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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

MARCIANO PLATA, et al., Plaintiffs, v. ARNOLD SCHWARZENEGGER, et al., Defendants.	Case No. C01-1351 TEH **DECLARATION OF TERRY HILL IN SUPPORT OF RECEIVER'S OPPOSITION TO DEFENDANTS' MOTION TO TERMINATE THE RECEIVERSHIP AND THE RECEIVER'S CONSTRUCTION PLANS** Hon. Thelton E. Henderson

I, Terry Hill, declare:

1. I am the Chief Executive Officer for Medical Services for the California Prison Health Care Receivership Corporation, a non-profit organization created to house the activities of the federal Receiver J. Clark Kelso. Unless otherwise stated, I know the following facts to be true of my own knowledge, and if called as a witness I could competently so testify. I make this declaration in support of the Receiver's Opposition to the Defendants' Motion to Terminate the Receivership and the Receiver's Construction Plans.

Ongoing Constitutional Violations and Need for Receiver's Construction Plans

2. In 1999, the California Department of Corrections (CDC, later to become California Department of Corrections and Rehabilitation, or CDCR) released a comprehensive report entitled "Older Inmates: The Impact of an Aging Inmate Population on the Correctional System." Attached as Exhibit A is a true and correct copy of the report. The report included several recommendations specific to physical prison upgrades. The CDC concluded in the report that the construction of healthcare facilities "will have to be done to a significant extent, no matter what." The CDC did not follow through on any of the report's recommendations.

3. The CDC's inaction was a prominent focus in a joint meeting of the Senate Subcommittee on Aging and Long Term Care, the Senate Select Committee on the California Correctional System, and the Senate Public Safety Committee, held on February 25, 2003, to discuss "California's Aging Prisoner: Demographics, Costs, and Recommendations." Attached as Exhibit B is a true and correct copy of the transcript from that hearing. During the hearing, multiple dimensions of the crisis posed by aging and medically ill inmates were reviewed in great detail, including the advantages of cohorting medically needy inmates. The CDC responded in part that there was not enough room to implement the committees' suggestions, and took no action.

4. In 2004, as a geriatrician with long-term care expertise, I was appointed as an expert in another federal court prisoner healthcare class action focusing on long-term care issues. In January 2005, I wrote a report describing the inadequacy of long-term care in the Correctional

Treatment Center at Pelican Bay State Prison. Attached as Exhibit C is a true and correct copy of that report.

5. In my 2005 report, I found that consolidation of CDC's medical long-term care patients into a smaller number of settings would facilitate the development of cost-effective programs capable of meeting minimum healthcare standards.

6. Throughout 2005 and 2006, under the guidance of the District Court in this case, I led a research team hired by the CDCR to investigate and improve its care of aging inmates. My team also collected data on all inmates of any age in eleven prisons' medical beds. Our report reiterated many of the recommendations of the CDCR's own 1999 report, and echoed nearly identical findings despite the passage of up to six years. Attached as Exhibit D is a true and correct copy of our study.

7. When my research team visited the Substance Abuse Treatment Center in the Central Valley in Corcoran, CA, for example, we found 6 inmates who were either paraplegic or quadriplegic, 5 of whom had non-healing pressure sores. This pressure sore rate greatly exceeds community standards. The cost of healing a pressure sore can easily reach $40,000. Medical personnel with the requisite expertise in such conditions are notoriously difficult to recruit for that prison due to its rural, isolated location.

8. In addition to the lack of expertise noted in rural prisons, we also noted the prisons' obvious overcrowding. Double-bunking and triple-bunking put inmates at risk for life-altering and costly injuries.

9. Overall, our report found that there had "been no serious attempt to carry out the physical plant and program modifications recommended in the department's 1999 internal report on aging inmates." We recommended aggressive development of specialized units and support programs, including assisted living and congregate care.

10. Because the methodological limitations of this 2005-2006 study limited our confidence in our evaluation of medical bed needs, the Receiver engaged Abt Associates in 2007 to perform a more rigorous assessment. I provided oversight and guidance to Abt's review. Attached as Exhibit E is Abt's Final Report dated August 31, 2007.

11. In its report, Abt Associates concluded that California prisons require between 4,970 and 5,750 additional beds for inmates with long-term medical care needs.

12. In 2008, we asked Abt Associates to revisit their bed need projections, taking into account custody levels, the CDCR's new population projections, and the possibility of a "mass release scenario." Attached as Exhibit F is Abt's Updated Report dated June 13, 2008. Abt's new study concluded that even if none of the hypothetically released inmates returned to custody, the long-term medical care needs of California's inmate population would still require over 4,500 additional beds. In a more recent update, Abt specifically examined the possible effects of a 50,000 inmate release. Attached as Exhibit G is Abt's Updated Report dated January 5, 2009. On page 9, the report reads: "If 50,000 inmates were released, then in 2009, the number of inmates needing LTC would drop by 939 from 3258 to 2319. If none of the mass released inmates returned to custody, then by 2018 there would be nearly 1600 fewer inmates needing LTC. However, if the release cohort returns to custody as described above, the number of inmates needing LTC over a 5-10 year horizon will only be about 550 fewer than if there had not been a mass release."

13. In June 2008, the Receiver in this case submitted his Turnaround Plan of Action to the District Court. Goal 6 of the Plan was to "Provide for Necessary Clinical, Administrative and Housing Facilities." The Plan detailed the need for seven separate healthcare facilities on CDCR property to house both medical and mental healthcare beds (approximately 10,000), and the need to upgrade existing facilities. The Receiver's plans for the seven new healthcare facilities are consistent with all the reports I have cited, beginning with the CDCR's own 1999 planning document for aging inmates.

Death Reviews and Related Analysis

14. In early 2007, at the request of the Receiver, I directed Dr. Kent Imai to conduct a complete analysis of the death review reports for 2006, because previous analyses had focused on identifying and sanctioning individual practitioners.

15. The purpose of the analysis was to categorize each 2006 death into three categories (non-preventable, preventable, or possibly preventable), to summarize the major lapses in care

(both individual and systemic) contributing to the patient deaths, and to make recommendations for quality improvement.

16. The three categories of deaths are described as follows:

(a) Non preventable – the healthcare system and individual providers probably would not have been able to prevent the patient's death.

(b) Preventable – better medical management or a better system of care would have prevented death.

(c) Possibly preventable – better medical management or a better system of care may have prevented death.

17. The Death Reviews are conducted by a committee which is responsible for evaluating the health care provided to inmates who have died, identifying deficiencies in care and taking action to improve care.

18. The Death Review Committee is composed of a Chief Physician Executive, a Correctional Administrator, Regional Medical Directors, Regional Director of Nursing, a Division of Adult Institutions representative, and others as determined by the Chief Physician Executive.

19. Although mortality rates at the prisons have shown some decreases since the Receivership was established, as the Analysis of Year 2007 Death Reviews shows, new long-term medical care beds are still necessary to prevent unnecessary death and injury in California's prisons.

20. In 2006, there were 18 preventable California inmate deaths and 48 possibly preventable deaths. Significant lapses in care were noted in more than half of the death reviews which were categorized as individual practitioner errors in judgment or attitude, systemic lapses, and no-fault lapses. Systemic lapses included: delays in triaging and processing patient requests for care resulting in patients with red flag symptoms not being evaluated in a timely manner; fragmentation of care and clinical inertia leading to lack of individual practitioner responsibility and accountability for each patient; pervasive prolonged delays in specialty referrals; no system for flagging abnormal test results; incomplete medical records; poorly managed transfers of care;

practices which place mid-level providers in vulnerable clinical situations, poorly supported or unsupported, with little or no mentoring; and practice environments.

21. In 2007, there were a total 397 deaths, of which 395 were subject to death reviews. Of those, 65 were possibly preventable deaths, and 3 were preventable. Attached as Exhibit H is the Analysis of Year 2007 Death Reviews.

22. The Death Review Committee also categorizes extreme departures in care into one of 14 lapses in care. The Committee identified 292 extreme departures from the standard of care among the 395 death review cases in 2007. Lapses in care occurred in all three types of deaths—preventable, possibly preventable, and non-preventable—but lapses occurred most frequently for the preventable cases.

23. The most frequent lapse of care in 2007 was the failure to recognize, evaluate, and treat important signs and symptoms. Fully one-third of all identified lapses in 2007 occurred in this category. The majority of these lapses occurred after clinic hours, at night and on weekends, when healthcare staff are most isolated. As the report concludes, renovation of clinical areas in existing prisons and creation of the Receiver's new healthcare facilities will reduce the current physical isolation of providers and decrease the number of these lapses.

24. The second most frequent lapse of care in 2007 was the failure to follow clinical guidelines. The report states that the Receiver's upgrade and new facilities plans will increase the availability of support from colleagues and decrease the occurrence of this lapse.

25. And the third most prevalent lapse of care in 2007 was delay in access to care. The report states that locating chronically ill and disabled inmates in the Receiver's new healthcare facilities will decrease the occurrence of this lapse.

26. In sum, the Receiver's construction projects are necessary to address the top three extreme lapses of care identified in the 2007 Death Review Analysis.

27. In addition to the lapse-specific interventions, the 2007 report describes six "macro" interventions to decrease lapses in care and unnecessary deaths. One of these interventions is "Facility upgrades and seven new facilities (10,000 bed project)." According to the report:

> The CPHCS clinical staff has been working in clinical areas that are dirty, cramped, crowded, noisy, and poorly equipped. Efficient team care, as called for in the chronic care model, is physically impossible where the requisite team members cannot fit in the clinical space, as is true for the majority of CDCR's yard clinics. The volume of care often far exceeds capacity, as at Avenal State Prison, where the 7525 inmates get care in spaces designed for 2320. Crowded patient care areas promote errors and prohibit confidentiality. Recruitment and retention of professional staff will be problematic so long as clinic environments are isolating and flagrantly unprofessional. There are plans to improve and enlarge the clinical areas in existing prisons, but these clinic remodels have only just started, and they will not address the challenge of providing adequate care in rural areas to large populations of patients heavily burdened with chronic disease. The 10,000 bed project will cohort sicker patients in urban or near-urban facilities, increase access to care, and dramatically improve efficiencies in care.

28. In addition to the 2007 Death Reviews Analysis, I have reviewed other investigative reports into inmate deaths. In one example of an inmate death attributable to departures from a minimum standard of care, a 36-year-old patient with the functional IQ of a 9-year-old died on January 27, 2008. In November 2007, he had suffered multiple seizures and was admitted to a community hospital. He returned to the prison where a physician ordered his seizure medications, but failed to see him. The clinical staff recorded that he failed to show or refused to come to multiple clinic appointments. The inmate's chart clearly identified that he was developmentally disabled and had a history of not taking his medications as prescribed, but the staff did not attempt to seek him out. There were clearly multiple clinical departures from the standard of care in treating this inmate. The investigation report into this death concluded that inadequate staffing, housing facilities, and clinical facilities had led to the death, and that it "is impossible to provide adequate health care delivery to prisoners with a combination of medical/mental health problems at California Rehabilitation Center (CRC) regardless of the competency of the health care and correctional officers assigned to those living units."

29. Another illustration of the State's inability to provide adequate care absent new facilities has arisen out of one of the remedial plans ordered in related litigation. The CDCR has been placing wheelchair-dependent inmates in 10 designated prisons in accordance with a remedial plan entered in the *Armstrong* case. Those mobility-impaired inmates are now located in prisons with grossly inadequate housing, inadequate cleaning sinks for those with colostomy bags, and impassable sidewalks. Recruiting necessary medical staff to those prisons is almost

impossible because the clinical facilities are so unprofessional. The rehabilitation therapy spaces do not allow for the most basic of examinations and equipment.

30. Finally, it is important to understand how the challenge of meeting the needs of inmates with disabilities has impacted the Receiver's mandate to achieve adequate and sustainable medical care. Both our 2005-2006 study of aging inmates and the 2007 Abt Associates study revealed that the CDCR has been flagrantly deficient in assessing and tracking inmates with disabilities. Between 99% and 100% of the inmates judged to need long-term care and inclusion in the medical half of the Receiver's new 10,000 bed healthcare facilities, in my experience, qualify as disabled under the Americans with Disabilities Act (ADA). My assessment is supported by an independent assessment of the ADA's applicability.

31. In my opinion and based on my experience, there will be additional unnecessary deaths, and the Receiver will not succeed in creating an adequate and sustainable medical care system, until adequate new healthcare facilities are in place.

Information Sharing with the State

32. The stipulated orders in the *Plata* litigation require that the Receiver produce extensive documents to the Plaintiffs on a monthly basis. Defendants have always been copied on that document production.

33. Beginning on April 15, 2004, as part of the monthly document production, the Receiver was required to start providing a list of inmates who died while in CDCR custody for the prior month. This report is submitted to Plaintiffs' counsel as a part of the monthly production of documents. The list is also provided to CDCR Office of Legal Affairs and the Office of the Attorney General, among others.

34. To ensure compliance with the *Plata* stipulated orders regarding production and access to documents, submission of Monthly and Quarterly Production of Documents is required from all 33 institutions. The submitted documents are reviewed by the Program Compliance Section (PCS) analyst to ensure compliance with the stipulated orders. Any documents not in accordance with the orders are removed. Information that is considered non-medical or sensitive is redacted.

35. Institutions are also required to provide a follow-up response to the Death Review Committee within 30 days of referral regarding any action item. Each institution also reports in writing to the California Attorney General within 10 days after an inmate death. The institution provides the AG with the following documents: a DOJ Form, a complete incident report or report of death, as applicable, a completed copy of the death certificate, a fingerprint card (two sets), and a coroner's report, if applicable.

36. The Analysis of Year 2006 Death Review was publicly distributed to all parties, including: Robin Dezember of CDCR Division of Correctional Health Care Services; Bruce Slavin, and Kathleen Keeshan of CDCR Office of Legal Affairs; Charles Antonen, Samantha Tama and Rochelle East from the Office of the Attorney General; and Paul Mello, as a part of the Receiver's Sixth Quarterly Report filed on September 26, 2007.

37. Additionally, both the 2006 and 2007 Death Reviews were published on the CPR website at www.cphcs.ca.gov.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed on February 23, 2009 in Sacramento, California.

/s/ Terry Hill
Terry Hill

GENERAL ORDER 45 ATTESTATION

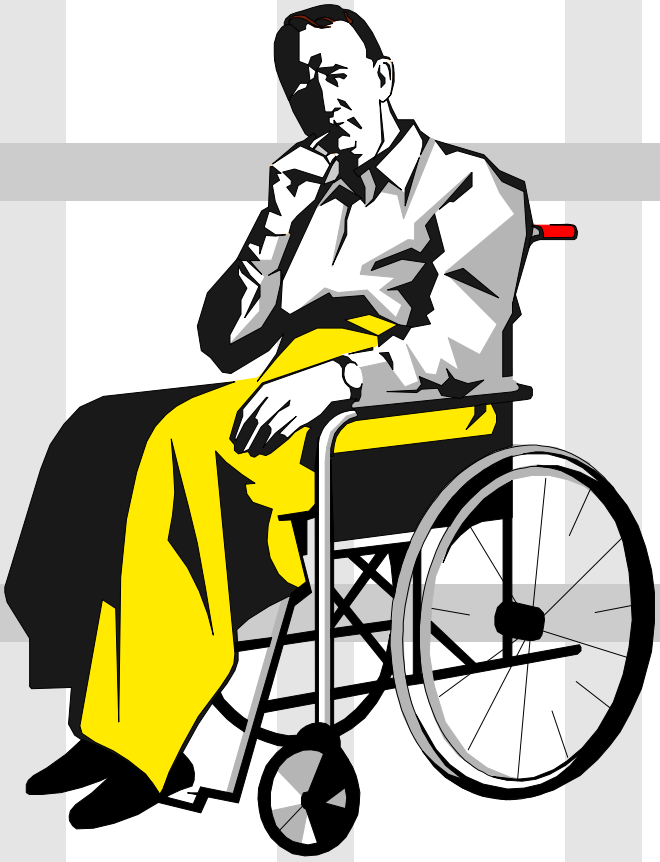
I, James J. Brosnahan, am the ECF User whose ID and password are being used to file this Declaration of Terry Hill in Support of Receiver's Opposition to Defendants' Motion to Terminate the Receivership and the Receiver's Construction Plans. In compliance with General Order 45, X.B., I hereby attest that Terry Hill has concurred in this filing.

/s/ James J. Brosnahan
James J. Brosnahan
Attorneys for Receiver

Exhibit A

h www.senate. /ftp/SEN/COMMITTEE/SUB/HHS%5 E/%5Fhome/A
C PRISONER C%5FREPORT.DOC

Older Inmates: The Impact of an Aging Inmate Population on the Correctional System



An Internal Planning Document for The California Department of Corrections 1999

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	1
BACKGROUND	4
DEFINITION OF "OLDER OFFENDER"	4
ISSUES OF AGING	5
OLDER FEMALE OFFENDERS	9
CALIFORNIA DEPARTMENT OF CORRECTIONS' OLDER OFFENDER INMATE POPULATION	11
HEALTH CARE UTILIZATION	12
EXISTING OLDER OFFENDER PROGRAMS AND SERVICES IN THE CALIFORNIA DEPARTMENT OF CORRECTIONS	16
OLDER OFFENDER PROGRAMS IN OTHER STATE CORRECTIONAL SYSTEMS	18
THE FUTURE FOR THE CALIFORNIA DEPARTMENT OF CORRECTIONS	22
RECOMMENDATIONS	26
REFERENCES	30
ACKNOWLEDGMENTS	32
DOCUMENT REVIEWERS	33
APPENDIX A: PROGRAMMING ACTIVITIES FOR OLDER OFFENDERS	A-1
APPENDIX B: HANDLING INMATES WITH DEMENTIAS	B-1

APPENDIX C: OLDER OFFENDER HEALTH ISSUES **C-1**

APPENDIX D: ADULT DAY CARE SERVICES **D-1**

APPENDIX E: PAROLE ISSUES **E-1**

APPENDIX F: PROJECT FOR OLDER PRISONERS **F-1**

APPENDIX G: COMMUNITY-BASED CORRECTIONAL NURSING HOMES AND HOSPICES **G-1**

APPENDIX H: GERIATRIC INMATES: WHO ARE THEY AND ARE THEY SUITABLE FOR ALTERNATIVE PLACEMENT? **H-1**

APPENDIX I: KEY TO PRISON ABBREVIATIONS **I-31**

EXECUTIVE SUMMARY

- Correctional systems across the nation are experiencing an increase in the number of older inmates.

- As of June 30, 1998, there were 1,859 inmates aged 60 and older in California's prisons and reentry facilities; by 2025, this number is estimated to increase to approximately 7,079.

- Tougher sentencing laws, especially the "Three Strikes" law, will increase the number of inmates serving life sentences, the number of persons aged 55 and older at the time of commitment, and the total number of older offenders in the system.

- It is estimated, by Jonathan Turley, founder and Director of the Project for Older Prisoners, that, on average, the cost of housing, programming, and providing medical care to older offenders is three times that of younger offenders.

- The increase in older inmates will bring new challenges to the California Department of Corrections in the areas of health care, housing, custody, food service, parole, and physical plant construction and operation.

- The California Department of Corrections may have to amend "standard operating procedures" and develop a comprehensive, standardized "Older Offender Program" to meet the needs of the older offender inmate population, not through enhanced services, but by restructuring to address the unique needs of this population and as a means to forestall costly health care services.

- It is recommended that the California Department of Corrections take a proactive stance by creating a multidisciplinary Task Force to address the needs of the older offender population and develop the necessary programs to meet these needs.

INTRODUCTION

In a 1989 Newsweek article "Growing Old Behind Bars," the author stated: "The average expense of medical care and maintenance for inmates over 55 is $69,000 a year, about three times the norm. As with any aging group, their incidence of chronic illness increases, especially for ailments such as heart disease, emphysema, cancer, and stroke. They require special diets, more eyeglasses, hearing aids, dentures, and prosthesis. Prisons must replace uniform buttons and shoelaces with Velcro patches to accommodate arthritic fingers."

Across the nation, correctional systems are experiencing a new phenomenon: an increasing number of older inmates. It is being called "The graying of the prison population." As most systems have historically served a fairly young population (persons in their 20's and 30's), this increase in the older population is posing new challenges. According to the National Institute of Corrections, few systems are geared up to meet the housing, programming, food service, and medical needs of older offenders.

According to Jonathan Turley, Director of the Project for Older Prisoners (POP): "Older offenders (55 and older) must be part of any comprehensive program to deal with overcrowding and diminished resources. Meeting the physical, social, and mental needs of older inmates is one of the most difficult problems facing correctional systems across the country. Nationwide, it is estimated that the number of older inmates will exceed 125,000 by the year 2000. Institutional costs of older inmates far exceed the costs for younger inmates. It is estimated that the older inmate costs three times the average cost of younger inmates. The greatest single contributor to the high costs of older inmates is medical expenditures. On average, inmates over 55 will suffer three chronic illnesses while incarcerated." *(Preliminary Report to the State of Illinois,* pages 5 and 6)

The American Medical Association (AMA), in its "White Paper on Elderly Health," echoes the problems to be expected in dealing with older inmates: "The health care problems of the elderly include a higher incidence of disease, increased prevalence of chronic illness, and significant functional disability. The elderly are 4.5 times more likely to suffer activity limitation than persons who are younger." (Page 2459)

The California Department of Corrections (CDC) is not immune to this phenomenon. Currently, there are over 4,100 older inmates in California's prisons and reentry facilities, and this number is expected to grow substantially. The CDC's Offender Information Services Branch (OISB) provided the actual numbers of older offenders for 1988 and 1998, and made the following estimates for the growth in the number of older offenders for the years 2000 through 2025.

ACTUAL AND PROJECTED NUMBER OF INMATES AGED 60* AND OVER IN THE CDC PRISON POPULATION

As of 6/30:	Males	Females	Total Number	% of Total Population
1988	634	25	659	0.9%
1998	1786	73	1859	1.2%
2000	2028	92	2120	1.3%
2004	2533	137	2670	1.4%
2010	3535	217	3752	1.6%
2015	4560	286	4786	1.8%
2020	5536	356	5892	2.1%
2025	6644	435	7079	2.3%

Source: "Spring 1999 Projections by Age Group" (05/11/99) CDC, OISB

**NOTE: The computer program identifies ages in ten year increments. Therefore, although the majority of the information in this report is based on the 55 and older age group, this chart reflects ages 60 and above, and thus underestimates the actual "geriatric" population.*

The current fiscal condition within the State government and the concomitant, possibly short-term, absence of new bond money for prison construction and expansion provides many challenges for the CDC to meet the needs of the general inmate population. Added to these challenges is the necessity to meet the needs of the older population as well.

This report began as an exploration of the health care needs of this growing population. It became apparent during the research that the entire Department will be affected by the increasing numbers of older offenders. Thus, the initial concept was expanded to include departmentwide issues.

As the CDC enters into long range planning activities, recognition of the challenges brought by an older offender population must be incorporated into those plans. This report seeks to provide CDC administrators and decision makers with information

describing the older felon population; the unique needs associated with aging in the prison setting; and recommendations for meeting those needs. It is not the intent of this report to suggest that older offenders receive enhanced services; rather, that the CDC be aware of the needs of this population and take a proactive course of action which will mitigate, to the extent possible, the increased costs associated with aging.

BACKGROUND

What is causing this growth in the number of older offenders? People are now living longer, including those who become inmates. Most states, including California, now have tougher sentencing laws. This increases the length of time in prison even for first time offenders and leads to lengthy (including life) sentences for repeat offenders. Habitual criminals, those who started their crime sprees in the 1940's and 1950's as juveniles or young adults, are now in their 60's, 70's, or older, and have continued to commit offenses, often more violent crimes leading to longer and/or life sentences. Lastly, there has been an increase in the number of persons who are committing their first felony crimes late in life.

In the past, the average age of a felon population was in the mid 20's. While the average age has gradually been increasing over the years, the general inmate population is still fairly young (the average age of the inmate population in California is 32 years old). Thus prison facilities and programs are not necessarily designed to meet the needs of an older offender population. Correctional systems nationwide are gearing up to meet the needs of this growing population.

According to the National Institute of Corrections: "Studies indicate that most existing prisons are not designed structurally or programmatically for older inmates nor do they meet their needs. Correctional administrators need to become more knowledgeable about the issues that must be addressed to meet the needs of the older inmate population." (*An Administrative Overview of the Older Inmate*, page 2.)

California is not alone in facing the issues related to the increase of an older inmate population. But now is the time to take a proactive stance in meeting the challenges presented by the older offender.

DEFINITION OF "OLDER OFFENDER"

"Even gerontologists do not agree on a specific chronological starting point for the study of aging. Instead, they often group people into categories. Some categorize 'older population' as 55 and older, 'elderly' as 65 and older and 'aged' as 85 and older. Other gerontologists refer to the 'young-old' as 60 to 74, the 'middle-old' as 75 to 84, and the 'old-old' as 85 and over." *(An Administrative Overview of the Older Inmate*, page 4.)

The definition of "old" or "older" is not clearly defined for the outside community and is no less easy to define for the inmate population. According to the California Department

of Aging (CDA), the current trend is to consider functional level instead of chronological age. The Federal Age Discrimination in Employment Act protects persons 40 and older, while the Job Training Partnership Act considers those 55 and over as "older workers." The designation of "senior citizen" can be made as early as 50 for some programs, such as some nutrition programs, or as late as 65 for others. The American Association of Retired Persons allows membership at age 50 while many retirement communities set 55 as a minimum age. Social Security members must wait until age 62 to collect their funds. Some inmates, because of their lifestyles (lack of access, or of accessing, comprehensive health care in the community; the long-term effects of smoking, drug and alcohol use; poor nutrition, etc.), may be chronologically 45, but could have the medical profiles and frailties of a 60 year old. (The Washington Department of Corrections estimates that inmates are medically 15 years older than their chronological ages while the National Institute of Corrections estimates six to ten years older.)

The Project for Older Prisoners and the Illinois and Virginia Departments of Corrections consider those 55 and older as "older offenders," while the Pennsylvania and West Virginia Departments of Corrections use age 60. The Florida and Minnesota Departments of Corrections use age 50. The National Institute of Corrections, recommends age 50: "It is recommended that, in order to have a uniform reference point, correctional agencies nationwide adopt age 50 as the chronological starting point to define 'older offenders.' This is based on a number of factors including socioeconomic status, access to medical care, and lifestyles of most offenders. Despite the difficulties in determining a common chronological starting point for the definition of 'older' inmate, it is necessary to establish one so that comprehensive planning, programming, evaluation, and research within and among prison systems can be accomplished. It is important that this chronological starting point be at a young enough age to allow for early health care, intervention, and prevention programs to minimize some of the long-term medical costs and other problems associated with older offenders." (*An Administrative Overview of the Older Inmate*, page 4.)

For the purposes of this report and in order to establish a community standard and common reference point for the collection, analysis, and comparison of available data, inmates who are aged 55 or older are considered to be "older offenders." This is not to say that every inmate who is 55 or older will present with the medical profiles and "special needs" associated with aging. As with all inmates in the California system, those 55 and over will need to be assessed on a case-by-case basis.

ISSUES OF AGING

It is important at this juncture to understand the process of aging. Some say we begin to die the moment we are born. In a sense, this is true. Cells in our bodies die daily. Our bodies are continually rebuilding new cells as the older cells die. In doing this, we use up our reserves of building materials. Thus, as we age, dead cells are not so readily

replaced. We become subject to the syndromes of aging: increased falls, instability, functional impairment, deconditioning, incontinence, delirium, constipation, fecal impaction, dehydration, nutritional deprivation, sleep disorders, modified speed of recovery from illness or injury, atypical disease presentation, altered pharmacokinetics, increased susceptibility to drug reactions, and poor adaptation to environmental change. (AMA *White Paper*, page 2460.)

Additionally, as we grow older, the realization that we have a finite time for life becomes more prominent in our thoughts. We begin to dwell on our own impending frailty and death as well as on the deaths of family and friends. This can lead to depression, a very common phenomenon in the aging. This can be exacerbated for inmates who are facing the possibility of losing community contacts and family members to death while they are incarcerated.

According to the 1990 census of the United States, 12.5 percent of the population was 65 or older, with a life expectancy of 78.5 years. (If it holds true that the health status of an inmate may be 6 to 15 years older than chronological age, a 65 year old inmate would have the health status of a 71 to 80 year old.) Ten percent of the elderly population (65+) has one or more mobility impairments and 7.7 percent have limited self-care ability. Mobility and self-care limits vary by ethnicity:

	Mobility Limits	**Self-care Limits**	**Both Types of Limits**
White	6.0%	3.6%	5.6%
Black	8.6%	7.0%	11.3%
Asian	6.5%	6.6%	7.0%
Hispanic	7.2%	5.6%	7.6%
Native American	9.4%	4.6%	7.7%

In addition, elderly persons (those 60 and over according to the California Department of Aging) in the community often need assistance with the Activities of Daily Living (ADL):

ADL Needs:	**% Needing Assistance:**
Assistance with bathing	23%
Assistance with dressing	15%
Assistance with mobility	36%
Assistance with eating	4%
Assistance with toileting	9%
Incontinence (bowel/bladder)	12%

Finally, there are specific indicators of longevity for Californians in general, regardless of current age. Persons, including inmates, with one or more of these indicators can expect increased morbidity and a shortened life span. As with mobility and self-care limitations, these indicators, presented in rank order from the highest to the lowest risk factor, vary by ethnicity:

WHITE	**HISPANIC**	**ASIAN**	**BLACK**
Heart disease	Heart disease	Heart disease	Heart disease
Cancer	Cancer	Cancer	Cancer
Stroke	Stroke	Stroke	Accidents
Lung disease	Homicide	Accidents	Homicide
Pneumonia	Accidents	Pneumonia	Stroke
Accidents	AIDS	Lung Disease	Cirrhosis
AIDS	Pneumonia	Diabetes	AIDS
Suicide	Lung disease	Suicide	Perinatal
Cirrhosis	Diabetes	Homicide	Pneumonia
Diabetes	Perinatal	Cirrhosis	Congenital

One of the most challenging aspects of an increasingly aging population for the CDC will be dealing with Alzheimer's disease (AD) and other age related dementias. *Stedman's Medical Dictionary* defines dementia as: "A general mental deterioration due to organic or psychological factors; characterized by disorientation, impaired memory, judgment, and intellect, and a shallow labile affect" (flat emotions). Dementia can result from the general atrophy of brain cells associated with aging, reduced vascular blood flow, as a side effect of medications, from trauma to, and scarring of, the brain, or by mental illness. Dementias in themselves are not usually fatal. However, the confusion and mental impairment can lead to accidental death.

Alzheimer's, on the other hand, is fatal. According to *Stedman's*, AD is a "progressive mental deterioration resulting in death in five to ten years." It causes, or is caused by (the exact disease progression is not clearly understood), actual changes in the structure of the brain and a decrease in neurotransmitters. It is the fourth leading cause of death for the elderly and it is estimated that 22 percent of persons over 78 will have AD. It affects more women than men, with symptoms usually occurring around age 65.

As we age, our nutritional requirements change. Currently, there are no Recommended Dietary Allowances (RDA's) specific to older persons. This area of geriatrics is just beginning. What is known is that in the elderly, the metabolism slows down as does energy expenditure. Thus older people need fewer calories. Vitamins and minerals continue to play an important role in maintaining health status, especially since many medications used by the elderly, and decreased liver function which occurs with aging, often decrease vitamin and mineral absorption and stores.

Factors such as dental problems, a decrease in the amount of saliva produced, difficulty in swallowing, an altered sense of taste and smell, diminished range of motion, and dementias all contribute to eating problems and possible malnutrition. Older persons often need softer, blander, moister food; food cut in smaller pieces; more colorful foods to stimulate appetite; smaller portions served more often; and a longer time for eating. While socialization during meals is an important factor, eating in large, noisy, crowded dining halls may be detrimental to ensuring proper nutrition. In this setting, the inmate is hurried by time constraints and distracted by the environment. He or she may not be able to eat a complete meal and thus not consume sufficient nutrients.

As stated earlier, older persons have an increased incidence of chronic diseases that usually require multiple prescriptions. In the community, persons with multiple illnesses risk medication complications as one person may see two or more doctors and use more than one pharmacy to fill prescriptions. Often the doctors and pharmacists are unaware that the patient is taking medications that should not be used together, that cancel each other out, or are at the wrong strength. Care must be taken when prescribing medications for older patients. This is especially important with mentally ill older offenders because psychotropic medications can influence physiological reactions and increase the complexity of multi-drug interaction. Decreased metabolism and liver function can lead

to either a dangerous buildup of the drug in the body or not enough of a concentration to work effectively. There is too often a pattern of over medicating to counteract the side effects of one medication by prescribing another. According to Mettler: "Studies show that two-thirds of prescriptions for older people are unnecessary, too risky, or the wrong dose." (*Healthwise*, page 327.)

OLDER FEMALE OFFENDERS

"We, of course, are particularly interested in older offender programs for women and are already seeing an aging population compared to a few years ago. Thus far, dementia has been the main challenge in our elderly population and this impacts custody as well as medical. Assigned staff for (an older offender) program should be consistently the same staff so that they get to know the patients well -- elderly patients are often upset by the least little change." *Gwendolyn Dennard, M.D., as Chief Medical Officer and Health Care Manager, California Institution for Women (Dr. Dennard held the same position with the Central California Women's Facility and currently holds that position at California State Prison, Folsom.)*

Older female offenders bring additional health care and custody challenges. These inmates will be in one of the three stages of menopause: perimenopause, menopause, or postmenopause. The perimenopausal and menopausal phases may require frequent and on-demand access to bathroom facilities and protective products, and possibly a need for more frequent changes of clothing and linens. It will also necessitate increased medical monitoring and evaluation for hormone replacement therapy.

Older female inmates will be increasingly susceptible to cancers of the breast, ovaries, uterus or cervix, as well as endometrial cancer and other common cancers. They may need more frequent gynecological exams and access to mammograms to screen for the increased cancer risk. It can be expected that there will be an increase in the number of hysterectomies performed as the number of older female inmates in the system increases.

Hormone deficiencies, lifelong calcium deficiencies, and inactivity will contribute to brittle bone disease and osteoporosis and resultant bone (wrist, ribs, etc.) and especially hip fractures. They will also be more susceptible to urinary incontinence, stress incontinence, and uterovaginal prolapse. As with perimenopausal and menopausal women, those with incontinence will need frequent and on-demand access to bathroom facilities and incontinence pads as well as the possibility of more frequent clothing and linen changes.

As with older male inmates, females inmates will experience a thinning of the skin and increased susceptibility to skin cancers and bruising. This condition can be exacerbated by the decrease in female hormones. Care will have to be taken to identify those who are

candidates for hormone replacement therapy and then to tailor that therapy (using estrogen alone or in combination with progesterone) to the unique needs of each individual woman.

The CDC will have to study the needs of the increasing older female offender population and decide how their general population housing needs and their acute care, hospice and intermediate care needs will be met. There will also need to be increased efforts in recruitment to ensure that there are qualified medical staff able to meet the health care needs of this population.

CALIFORNIA DEPARTMENT OF CORRECTIONS' OLDER OFFENDER INMATE POPULATION

ACTUAL NUMBERS OF INMATES AGED 55 AND OLDER BY INSTITUTION:

	6/93	12/93	6/94	12/94	6/95	12/95	6/96	12/97**	6/98
ASP	132	140	144	145	138	151	151	202	217
CAL	47	55	50	45	47	51	56	86	89
CCC	44	52	57	45	43	55	57	51	57
CCI	99	108	115	120	134	134	144	157	161
CCWF	37	41	54	64	60	44	41	67	85
CEN		15	36	52	54	57	62	65	72
CIM	119	127	126	97	107	118	141	169	154
CIW	27	32	38	40	42	43	40	45	43
CMC	334	299	307	304	299	305	295	335	358
CMF	211	211	198	190	185	182	192	220	224
COR	73	99	103	104	94	93	103	107	118
CRC *	M=64	M=60	M=76	M=78	M=82	M=84	M=85	M=102	M=103
CRC *	F=3	F=4	F=3	F=5	F=5	F=0	F=2	F=5	F=4
CTF	177	182	181	197	222	211	248	292	320
CVSP	41	55	56	63	70	61	63	92	100
DVI	70	72	94	89	87	82	93	101	103
FOL	98	106	111	111	100	116	113	158	157
HDSP						23	43	64	63
ISP			20	34	48	57	54	76	65
LAC	27	47	52	66	78	88	100	106	105
MCSP	75	81	88	80	84	84	100	112	138
NCWF	7	6	9	2	2	6	10	13	11
NKSP	24	54	69	67	78	70	76	104	108
PBSP	33	40	42	45	53	45	49	55	66
PVSP				10	47	54	85	124	112
RJD	64	56	65	78	80	77	84	101	109
SAC	38	47	45	52	56	59	56	64	69
SATF								51	127
SCC *	M=21	M=29	M=44	M=44	M=43	M=53	M=-59	M=44	M=57
SCC *	F=0	F=0	F=0	F=1	F=1	F=0	F=0	F=0	F=0
SOL	155	153	156	162	157	187	215	237	229
SQ	135	131	129	120	134	153	157	169	176
SVSP							15	79	88
VSPW					6	24	31	43	45
WSP	73	65	74	89	91	97	73	117	108
S. Rita					15	12	23	12	10
Other *	M=60	M=61	M=53	M=57	M=66	M=56	M=57	M=85	M=105
Other *	F=2	F=4	F=2	F=5	F=6	F=2	F=5	F=1	F=4
TOTAL	**2280**	**2432**	**2597**	**2661**	**2814**	**2934**	**3178**	**3911**	**4160**

* CRC, SCC, and "Other" house both male (M) and female (F) inmates. "Other" Includes facilities such as work furlough, Community Correctional Facility, leased beds, State hospitals, etc. (See Appendix I for list of institutional abbreviations.)

** Due to a change in the computer program used for the reports, the data for December 1996 and June 1997 are not available.

Source: "Characteristics of the Population in California State Prisons by Institution"; June 30, 1993 (1993); December 31, 1993 (March 1994); June 30, 1994 (August 1994); December 31, 1994 (May 1995); June 30, 1995 (July 1995); December 31, 1995 (February 1996); June 30, 1996 (September 1996); December 31,1997 (April 1998); June 30, 1998 (March 1999). CDC, ASD, OISB

Before the CDC can plan for the future needs of an older offender population, there must be an understanding of the current population. To achieve this, an analysis was made of the inmates who were 55 and older at a given point in time.

It must be noted here that the following analysis is not, nor is it intended to be, a scientific research model. As with the designation of age 55 discussed earlier, the data presented are proposed as a reference point from which to extrapolate a general understanding of the CDC's older inmate population. It is recognized that the selection and sampling methods may lend bias to the outcome data. Additionally, projections on an older population influenced by the "Three Strikes" law were not available at the time the original data were gathered.

The CDC's Offender Based Information System (OBIS) generated several "runs" for this report. The information generated included the names, CDC numbers, locations, commitment dates, dates of birth, current age as well as age at commitment, and commitment offenses for all inmates in the system at that time who were 55 and older.

At any given time, there are approximately 4,000 older offenders in California prisons. Older offenders can be found in all of the existing prisons as well as in reentry facilities. The highest concentration (almost 300) of older offenders can be found at the California Men's Colony. Significant populations (over 100 each) are at Avenal State Prison, California Correctional Institution, California Institution for Men, California Medical Facility, Corcoran State Prison, California State Prison-Solano, California Training Facility, Folsom State Prison, and San Quentin State Prison. There are populations of older offenders at each of the three current female institutions as well.

HEALTH CARE UTILIZATION

"Of course, the big problem is medical care. I had an inmate on dialysis the last year of his life. We spent $200,000 taking care of him. We need to consider an alternative to incarceration." *Tony Gammon, Superintendent, Moberley Correctional Center, Missouri Department of Corrections ("Life Behind Bars").*

As discussed earlier, and in more detail in Appendix C: *Older Offender Health Issues,* the increase in older offenders places new challenges and burdens on the CDC's health care system. The CDC does not currently have an automated comprehensive, inpatient/outpatient health care management information system able to display health care on a cost center basis and track individual health care utilization. Thus, there is not an efficient and reliable way at this time to predict the impact on the current system (personpower, resources and cost) of this increasing population which brings with it increased health care utilization. In order to provide some projection of health care utilization, two available sources were queried and compared: the CDC's Health Care Cost and Utilization Project (HCCUP) and the Medi-Cal system. While this comparison can be useful to identify the types of medical conditions an aging population may have, it must be noted that the data from CDC is for inpatient usage of a group of 100 inmates serving life sentences while the data from **Medi-Cal** is for **inpatient and outpatient** usage combined for all users 55 and older. Thus, there is not the ability to do a cost comparison between the two systems to estimate fiscal impact using this data.

The HCCUP is a CDC database which collects inpatient data. (NOTE: Because the HCCUP system brought institutions on-line in phases, data was not 100 percent available.) This system was not developed to be a cost center tracking system similar to those used in community hospitals. However, the HCCUP system is able to provide, among other things, cost and utilization for inmates treated in community hospitals. The HCCUP system was searched for inpatient usage by a group of 100 inmates serving life sentences. Following are the medical conditions for which these inmates received inpatient care. The conditions in ***bold italics*** correspond to the medical conditions most frequently found in users of the Medi-Cal system on both an inpatient and outpatient basis who are also 55 and older.

This information is provided solely as a gauge of the types of health care problems with which the older inmate population may present. It is not intended to predict exact health care system usage.

Eyes/ENT**:**
Cataract
Diplopia

Respiratory:
Asthma
Chronic obstructive asthma
Chronic airway obstruction
Orthopnea
Pneumonia

Cardiopulmonary**:**

Cancer**:**
Prostate

Genito-Urinary:
Disorder of the kidney and ureter
Renal failure
Bladder neck obstruction
Calculus in bladder
Hyperplasia of the prostate
Prostatitis

Orthopedic**:**

Intermediate coronary syndrome
Essential hypertension
Coronary arteriosclerosis
Atrial fibrillation and flutter
Heart attack
Chest pain
Peripheral vascular disease
Arteriosclerosis of the arteries
Obstructive pulmonary disease
Ischemic heart disease

Osteoarthrosis
Spinal stenosis of the lumbar region
Spinal cord injury
Broken hip
Lumbago
Arthropathy

Gastrointestinal:
Hemorrhage of the GI tract

Psychological/Organic Mental Illness:
Paranoid state
Neurotic disorder
Depression
Dementia

Cerebral:
Syncope and collapse
Hemiplegia
Transient cerebral ischemia
Cerebrovascular disease

Data was also received from the Medi-Cal system indicating the most frequently occurring medical conditions for which Medi-Cal recipients aged 55 and older sought treatment on a inpatient and/or outpatient basis. As the inmate population has a similar socio-economic status to that of the Medi-Cal population, this information may provide an indicator of the types of medical conditions expected in the older offender population although it will not differentiate between those which can be treated on a outpatient basis versus those treated on an inpatient basis. Conditions shown in ***bold italics*** correspond to those conditions gleaned from HCCUP for the group of 100 inmates serving life sentences.

Eyes/ENT:
Cornea lens replacement
Glaucoma
Presbyopia
Sensoneural hearing loss
Dysphasia
Cataracts
Degeneration of the macula
Esophagitis
Pharyngitis

Cardiopulmonary**:**
Intermediate coronary syndrome
Peripheral vascular disease
Hypertension
Heart attack
Cardiomyopathy
Atrial fibrillation
Cardiac dysrhythmia
Heart failure
Congestive heart failure
Edema
ASCVD
Arteriosclerosis
Chronic ischemic heart disease
Chest pain
Angina
Cardiomegaly

Gastrointestinal:
Peptic ulcer
Gastritis
Gastroenteritis

Respiratory:
Upper respiratory infection
Bronchitis
Allergic rhinitis
Pneumonia
Emphysema
Asthma
Chronic airway obstruction
Lung disease
Respiratory arrest
Cough
Dyspnea
Respiratory abnormality

Cancer:
Prostate
Colon
Lung
Breast

Hemotologic:
Hypovolemia
Hyperglyceridemia
Anemia
Septicemia

Skin:
Cellulitis
Dermatitis
Dermatophytosis
Chronic leg ulcer
Decubitis ulcer
Ingrowing nail

Intestinal obstruction
Diverticulosis
Gastrointestinal hemorrhage
Abdominal pain

Orthopedic**:**
Rheumatoid arthritis
Osteoarthrosis
Arthropathy
Pain in joint or limb
Lumbago
Back ache
Osteoporosis
Broken hip

Cerebral:
Hemiplegia
CVA
Cerebrovascular disease
Alteration of consciousness
Syncope and collapse
Convulsions
Dizziness
Cerebral artery occlusion
Transient cerebral ischemia

Endocrine:
Diabetes

Neurological:
Cauda Equina Syndrome
Parkinson's

Genito-Urinary**:**
UTI
Chronic renal failure
Hyperplasia of the prostate
Urinary incontinence
Hematuria

General**:**
Malaise
Fatigue
Pyrexia
Headache

Psychological/Organic Mental Illnesses**:**
Dementia
Paranoid schizophrenia
Depression
Bi-polar
Non-psychotic brain syndrome
Alzheimer's
Anxiety
Psychosis

As can be seen by these two lists, there is a wide range of medical conditions occurring in the older population. As stated earlier in this report, each inmate can be expected to present with at least three chronic medical conditions during incarceration. Thus the increasing number of older offenders in the system as well as the longer sentences for these individuals has the potential to place a significant load on the CDC's comprehensive health care delivery system.

EXISTING OLDER OFFENDER PROGRAMS AND SERVICES IN THE CALIFORNIA DEPARTMENT OF CORRECTIONS

Actual Numbers of Inmates Aged 55 and Older entering the System as New Admissions and as Parole Violators With New Terms (PVWNT):

	Total		**Males**		**Females**	
	#	%	#	%	#	%
New Admissions						
1988	450	1.5%	417	1.5%	33	1.3%
1989	537	1.5%	499	1.6%	38	1.1%
1993	636	1.5%	602	1.5%	34	0.9%
1994	697	1.7%	649	1.7%	48	1.2%
1995	683	1.5%	638	1.5%	45	1.0%
1996	766	1.7%	711	1.7%	55	1.1%
1997	848	1.8%	792	1.9%	56	1.0%

	Total		**Males**		**Females**	
	#	%	#	%	#	%
PVWNT						
1988	70	0.8%	67	0.8%	3	0.6%
1989	77	0.7%	76	0.7%	1	0.1%
1993	177	0.9%	174	0.9%	3	0.2%
1994	157	0.9%	148	0.9%	9	0.7%
1995	156	0.9%	151	0.9%	4	0.4%
1996	177	1.0%	170	1.1%	7	0.5%
1997	203	1.2%	190	1.2%	13	0.9%

Source: "Characteristics of Felon New Admissions and Parole Violators Returned with a New Term": Calendar Year 1993 (May 1994); Calendar year 1994 (April 1995); Calendar Year 1995 (August 1996); and Calendar Year 1996 (October 1997); Calendar Year 1997 (May 1998): CDC, ASD, OISB, ESAS, DAU

The CDC currently does not have a standardized, systemwide "Older Offender Program" or specific "Older Offender Policies." Those institutions which house significant numbers of older offenders have developed local policies and procedures such as nutritional consultations; assignment to lower bunks and tiers as medically indicated; support groups (e.g., the "Over 50" group at the California Institution for Women); clustered housing in one or more locations within the institution; "buddying" with other inmates in a mutual support arrangement, etc. While this meets the needs for that location, it does not provide consistency for older offenders transferring from one institution to another.

The California Institution for Men (CIM) houses older offenders in its Elm Hall. Elm Hall was designated an older offender housing unit. Over time, it has evolved into a housing unit for both older offenders and those with non-acute care medical needs (i.e., inmates in wheelchairs, stroke victims, inmates who had organ transplants pre-incarceration, etc.). This new mix creates adjustment problems, especially as young para- and quadriplegic inmates find themselves housed with older inmates and the older inmates find themselves amongst former "gang bangers." There is a Medical Technical Assistant on duty in Elm Hall for 16 hours per day. The CIM has an arrangement with California Polytechnic Institute to act as a training ground for social work and geriatric social work students. This arrangement helps augment the Correctional Counselors whose caseload has not been adjusted to take into account the increased time it takes to deal with older offenders and disabled inmates, especially in placement matters. At one time, there was an organized senior citizen group in Elm Hall that raised money for charities; taught reading, music and other subjects to inmates; and provided a socialization function for the residents. This group was administratively disbanded several years ago and has not been reestablished. There is no programming specifically geared for older offenders. They take part in regular programming opportunities. Because of the problems in adjusting to and living on the outside, Elm Hall has seen a similar pattern to that experienced with Human Immunodeficiency Virus (HIV) positive inmates willfully violating parole to return to prison for needed health care and other services. (*Personal conversation with Diana D. Smith, Facility Captain, Elm Hall.*)

According to Gwendolyn Dennard, M.D., who was the Chief Medical Officer at the California Institution for Women and at the Central California Women's Facility, much the same holds true for the female older offender, especially willful recidivism. This population brings an increased workload for the medical staff, as the older women require more time to diagnose and treat.

As the CDC's older offender population increases and more and more institutions house these inmates in increasing numbers, the need to develop standardized policies, procedures and staffing packages becomes more critical. A proactive stance in developing these now will not only facilitate implementation of additional older offender programs as the need arises, but will also forestall the problems inherent with having a special needs population whose needs are not being addressed.

OLDER OFFENDER PROGRAMS IN OTHER STATE CORRECTIONAL SYSTEMS

*"**The 'graying' of the prison population -- and the escalating costs of health care that result -- is just one of the issues to be faced in the national debate on crime."** Bernard Gavzer ("Life Behind Bars")*

Contacts were made with several state correctional systems (referred to in this report as ”DOC” [Department of Correction]) to determine how they were handling the older population. In addition, the National Institute of Corrections surveyed other state systems, and the Southern Legislative Conference of the Council of State Governments produced a special report: “The Aging Inmate Population.” Some states indicated that they were beginning to develop programs while others had already established programs. The most frequent omission is that few if any systems are addressing the needs of older female offenders, possibly due to the smaller number of female offenders in other correctional systems. While most of the systems identify a need to address the needs of older female offenders, only Florida and South Carolina have programs for older women.

Following are descriptions of the programs in other state correctional systems. This information is provided to identify potential contacts and models which the CDC may utilize in developing its own older offender policies and procedures.

ARKANSAS

While the Arkansas DOC does not have specific “geriatric” policies or facilities, older offenders may be housed in one of two housing units for the “chronically infirm.” They are exploring an initiative with the private sector to establish a single-site dedicated geriatric facility.

FLORIDA

The Florida Department of Corrections has special units for both male and female older offenders. Younger inmates are also housed in these units to provide the necessary work force. Health and food services have been modified to address the needs of the older inmate. They have a chronic disease clinic in which inmates are seen every 90 days, or sooner if needed. They are seeing the classic medical conditions associated with aging. Inmates have the right to sign living wills and “do not resuscitate” orders. The DOC has also been able to remove inmates from life support. The Florida Department of Elder Affairs works closely with the DOC.

GEORGIA

Aged, infirmed and handicapped inmates are housed in one institution which also has a 60 bed hospital and 24-hour medical services access. There are special programs for the elderly, such as gardening, special exercise classes, and access to talking books.

ILLINOIS

Inmates aged 55 and older with one or more chronic illnesses and special needs inmates are housed together in one facility. Special arrangements are made for meals, obtaining items from the commissary, legal library access, barbershop, and chaplaincy services. Special activities such as chess, dominoes, pool and art classes are scheduled.

INDIANA

There are two facilities designated for older offenders and other special needs inmates. Their strategic plan recommends the creation of a hospice, recreational and vocational programs, and access to gerontologists.

KENTUCKY

The Kentucky DOC has a convalescent care unit that provides 50 beds for inmates with limited mobility, advanced age, and medical conditions. The unit is handicapped accessible with medical services located within the area. There is a recreational leader and classification officer assigned to the unit. The DOC is building a 58-bed Skilled Nursing Facility (SNF) which legally can house both male and female inmates. As it is doubtful that females will actually be admitted, the infirmary at the female institution is being remodeled to include SNF beds.

LOUISIANA

Most of their geriatric inmates are placed in one of four prisons. A new “special needs” facility, for chronic care and skilled nursing, is being built. Geriatric inmates needing these services will also be housed there.

MARYLAND

Most older offenders are provided “special housing” -- in hospital units, dorms, first floor cells, single cells. They have an agreement with the State Department of Health and Mental Hygiene to house senile inmates in state hospitals or skilled nursing facilities.

MINNESOTA

They have a dorm to accommodate 23 self-sufficient men aged 50 and older. Those needing medical monitoring are placed in a 10-bed medical unit. Men in the dorm go to

meals ahead of the general population to avoid the rush. There is a special senior social group. Otherwise, the men participate in regular institutional programming.

MISSISSIPPI

The DOC has two units at one institution for geriatric and disabled inmates: an 85 bed nursing home and a 192 bed unit.

MISSOURI

Missouri uses the chronic care model for geriatric inmates. They have an early release law for inmates needing extensive medical care the DOC is unable to provide. They have a 22 bed unit near the infirmary and two additional units for use by older offenders. Infirmaries may also be used for SNF level of care.

NEW JERSEY

The New Jersey DOC is in the process of developing a comprehensive older offender program. Meanwhile, they have an arrangement with a community based SNF. Minimum security inmates can be placed without the need for guarding. They also have 77 beds on three floors of a local hospital for male and female inmates. Custody staff are assigned full-time to the hospital. The DOC is planning a new facility that is slated to include 100 long-term and 40 older offender beds. However, if costs need to be reduced, these beds will be eliminated.

NORTH CAROLINA

The North Carolina DOC is renowned as a national model for older offender issues. The McCain Correctional Hospital serves both older offenders and medical needs inmates. It offers inpatient, outpatient and skilled nursing services. There is a comprehensive activity and therapy program in place, including taking the seniors out to the community for recreational and socialization opportunities.

OHIO

They have a 40-bed facility for older male inmates. Staff receive special training on older offender issues and there are special programming opportunities. The local senior volunteer program works with the facility.

SOUTH CAROLINA

The South Carolina DOC has a men's, a women's and a mixed gender program for older offenders. A sheltered work-shop as well as recreational, educational, craft, horticulture, literacy, and work release programs are in place.

TENNESSEE

The DOC has a 50 bed unit at Wayne Correctional Annex and 100 sheltered living beds at Deberry Special Needs Facility which are available to geriatric inmates.

TEXAS

There is a 60-bed ambulatory older offenders housing unit at Huntsville and a 50-bed SNF in one wing of the adjacent hospital. There is a waiting list for both facilities. Medical charts of these inmates are reviewed monthly with patients seen every three months, or as needed, for chronic illnesses.

VIRGINIA

The Virginia DOC has an older offender program at one facility for inmates aged 55 and older which offers exercise programs and discussion groups on relevant topics.

WASHINGTON

The Washington DOC has a “chronic disease” program in lieu of a geriatrics program in recognition of the discrepancy between chronological age and the health status of inmates. Inmates are seen every 90 days, or as needed. Staff, both medical and custody, have been sent to specialized training in chronic diseases and geriatrics.

WEST VIRGINIA

There is a 45-bed unit for elderly and ill inmates. Medical care, counseling, exercise, gardening, life skills, self help (such as AA), education, religious, and pre-release programs are provided.

WISCONSIN

Elderly inmates may be placed in one of two units for the medically needy. There is an infirmary unit for those who need 24-hour care and a self-care unit for those who need minimal assistance.

WYOMING

Those aged 40 and older who meet specific screening criteria may be placed in one of two special housing units. These inmates program with the general population.

THE FUTURE FOR THE CALIFORNIA DEPARTMENT OF CORRECTIONS

*"**Studies have shown that the average cost of imprisoning an inmate over the age of 50 with health problems is $60,000 per year."*** *Bobbie Ituskey, President, American Correctional Association ("Life Behind Bars")*

According to the National Institute of Corrections, older offenders fall into three groups:

> **Group 1:** Those who committed their first crime over the age of 50. These inmates can be expected to have problems adjusting to prison. They will be easily victimized. However, they do have good community skills and often have family ties, which will assist in a successful parole.
>
> **Group 2:** Career and habitual criminals. These inmates usually adjust well to the prison environment. They are usually substance abusers, especially of alcohol, with the abuse worsening with age. They do not have strong family or community ties and lack community skills.
>
> **Group 3:** Those who received long sentences at an early age. These persons have usually committed heinous crimes that make them difficult to place. While they adjust well to prison, their family and community ties are weak or nonexistent. They lack community skills.
> (*An Administrative Overview of the Older Inmate*, page 11)

The aging inmate population will cause the CDC to rethink "standard operating procedures" that have been in place for decades. New ways of doing business will have to be implemented. This will include:

Physical plant: Grab bars in cells, showers and toilet areas; elevated toilet seats; stools or benches in showers and bathtubs; hand rails on walkways; bottom steps painted a darker and/or reflective color for better contrast; elevators or other lifts for second story access; compensation for decreased ability to control body temperature and increased risk for hypothermia, especially for mentally ill older offenders; greater access to toilet facilities; large lettered signage; accommodations in the general population for inmates who are oxygen dependent but who do not need medical housing; environmental modifications and/or totally separate housing for inmates with AD and other dementias.

Programming: Activities to keep the inmate mentally and physically active as a means to delay onset of costly medical care; programming which takes into account the limited capabilities (lifting, standing for long periods, diminished eye sight and coordination, etc.) of some older inmates; programming geared specifically for the elderly (See Appendix A: *Programming Activities for Older Offenders*).

Custody Staff: Training for correctional officers in dealing with an aging population, especially in dealing with inmates with AD and other dementias (See Appendix B:

Handling Inmates With Dementias); awareness of the impact of hearing loss, brittle bones, poor eyesight, slower response time and reflexes, instability in walking and standing, need for more frequent access to toilets; need for more Correctional Counselors with lighter caseloads, and/or Discharge Planners to assist in meeting the needs of the older offenders.

Operations: Development of policies which take into account the difficulty in controlling body temperature and need for more blankets or heavier clothing in winter months as well as lighter or heavier clothing in warmer months; the need for toothbrushes with larger, easier to grip handles, for shoes with non-slip soles, shirts with Velcro instead of buttons, and shoes with Velcro instead of laces. Awareness of, and compensation for, difficulty in maintaining personal hygiene and need for assistance with Activities of Daily Living (ADL). The need for assistance in making funeral arrangements, writing "Living Wills" and "Do Not Resuscitate" (DNR) orders. Development of alternative housing arrangements (clustered, disbursed, or a combination; hospice, skilled nursing, convalescent, sheltered living) and transportation policies, especially the need for frequent "rest" stops; standardized procedures for transporting older parolees with medical problems; accommodation in the general population for oxygen dependent inmates who do not require medical housing.

Food Services: The need for fewer calories and awareness that the elderly may have difficulty in chewing and swallowing and will need softer food that is easier to chew and digest; awareness that the elderly may have digestion problems requiring blander diets and of the increased need for calcium to mitigate brittle bones, especially for female inmates; awareness of the different nutritional, vitamin and minerals needs of the elderly; awareness that the elderly may be unstable in gait, weak, and lack the coordination to stand in food lines with able bodied inmates, may be unable to carry full food trays to tables and may require a longer time to eat and/or feeding assistance; Diet Kitchens or other means for meeting nutritional needs.

Medical, dental, mental health: Awareness of the process of aging and the special needs in diagnosing and especially in medicating, and in meeting the unique needs of older female inmates; the need for life support systems and removal from those systems; the need for skilled nursing, hospice, and convalescent services; willingness and ability to carry out living wills and DNR's; special attention to dental health issues which can severely impact health status in the elderly; cooperation between physical medicine and mental health in the diagnosis and treatment of Alzheimer's disease and other dementias; medical and ancillary specialization in geriatrics (See Appendix C: *Older Offender Health Issues*.); the need to do functional assessments to identify specific health care needs and ADL assistance needs; the need for development and monitoring of care plans.

Parole: Potential need to parole into a nursing home or board and care facility; need to enroll in Medi-Cal program for access to health care; linkages to Adult Day Care and Adult Day Health Care Centers (See Appendix D: *Adult Day Care Services*); unlikelihood of employability and the resultant need for living expenses; awareness of

existing or planned funeral arrangements and living wills; the need to train Parole Agents on the Older Americans Act and the availability of community-based services for older parolees. (See Appendix E: *Parole Issues*.)

"These issues must be addressed prior to parole. Again, discharge planning is essential, Parole and Community Services Division has minimal cash assistance for parolees. Agents supervising the older parolee must be familiar with community based programs offering assistance in these areas." *Vicki Sanderford, Program Manager, CDC, Parole and Community Services Division.*

Not all older inmate or parolees will meet the profile or need the full range of services for "frail elderly." As with the standard CDC operating procedure, each inmate will need to be assessed on a case-by-case basis.

RECOMMENDATIONS

Recognition of the unique needs of an older offender population must be a part of any and all long range planning activities within the California Department of Corrections. To this end:

It is recommended that the California Department of Corrections take a proactive stance in meeting the needs of an increasing older offender population. Enactment of tougher sentencing laws will serve to increase the number of persons aged 55 and older who will be incarcerated. Now is the time to act to have programs in place which will accommodate this population, not with enhanced programs, but with programs which will mitigate the high cost of housing, programming, and providing comprehensive health care to an aging population.

It is recommended that the CDC initiate this activity by establishing a multi-divisional, multidisciplinary Task Force and Working Groups to develop a comprehensive "Older Offender Program" for the California Department of Corrections. These groups will seek consultation from local geriatric associations, experts in geriatrics, and providers of services to older persons, from other correctional systems which already have older offender programs in place, and from university based geriatric educational and training programs.

Based on the research for this report, the following issues have been identified for consideration by the Task Force. One of the first assignments for the Task Force would be to review these issues to determine which should be pursued and in what priority order.

- Cost studies on the fiscal impact of developing, implementing and maintaining a comprehensive, system wide "Older Offender Program," including a comprehensive, research-model analysis of the current older offender population (demographics, health care utilization and cost, criminal history, etc.) and the capital outlay implications.

- Identification of funds (e.g., grants, contracts, etc.) and funding sources (e.g., National Institute of Corrections, foundations, Older Americans Act, California Department of Aging, etc.) to assist in the development, implementation, and maintenance of CDC's Older Offender Program.

- Pre-release planning that includes referrals to long-term care, board and care, Adult Day Care and Adult Day Health Care services, etc., as well as eligibility for Medi-Cal, and Social Security, if applicable.

- Institutional programming suitable for older offenders, including programs (i.e., educational and vocational) which assist in maintaining and improving mental and physical health status. (See Appendix A: *Programming Activities for Older Offenders*.)

- The establishment of a community based "Adopt an Elderly Inmate" program for visiting, letter writing, transitioning back into society, etc.

- The need for hospice, skilled nursing facility, intermediate care, and sheltered living beds for both male and female older offenders, including methodology for identifying the number and placement of the beds.

- Development of appropriate housing policies, including accommodation in the general population of oxygen dependent inmates who do not need medical housing.

- Training needs for medical staff in geriatrics, especially in geriatric female health issues, proper medication, and dementias. (See "*Older Female Offenders*" and Appendix C: *Older Offender Health Issues*.)

- Training needs for custody staff in older offender issues.

- Training needs for Parole Agents in older offender issues, including differentiating between behaviors associated with dementias and those caused by usual acting out. (See Appendix E: *Parole Issues*.)

- Information for all inmates on issues of aging.

- Intensive recruitment efforts for medical and ancillary professional staff skilled in geriatrics, especially for the women's institutions.

- The need for development of standards of care for physical, dental and mental health care services of the older offender population. (See Appendix C: *Older Offender Health Issues*.)

- The need for development of standards of care for older female inmates. (See "Older Female Offenders" and Appendix C: *Older Offender Health Issues*.)

- The need for specific food services policies and practices to meet the nutritional and special diets needs of older offenders.

- Development of transportation policies that take into account the special needs of the older offender in general and the emergency transport of the older mentally ill offender in crisis.

- Appropriateness of establishing programs in institutions housing older offenders based on the Adult Day Care Services model. (See Appendix D: *Adult Day Care Services*.)

- The pros and cons of housing older offenders within the general population versus within specialized housing units and/or specialized "500 bed" facilities; throughout the system versus on a regional or clustered basis; and development of the optimum housing policies, including those inmates who are oxygen dependent. (See Appendix F: *Project for Older Prisoners*.)

- The feasibility and usefulness of entering into cooperative arrangements with the California Department of Aging and other organizations involved with geriatric and aging issues to assist in the development and maintenance of the CDC's Older Offender Program.

- Development of internships, fellowships, credentialing "hours," etc., for medical students, medical practitioners (including doctors and nurses), psychiatrists, psychologists, social workers, recreational therapists, physical therapists, etc., who are specializing in geriatrics.

- The need for the development of specific policies for paroling older offenders. (See Appendix E: *Parole Issues*.)

- The feasibility of establishing, or having established, Adult Day Care Services, congregate living arrangements, skilled nursing facilities, hospices, board and care homes, etc., for older parolees, including those with mental illness, dementias, and AD, as a means to mitigate willful parole violation and costly return to prison to obtain needed services.

- The need for standardized staffing packages for Older Offender Programs, including recognition that workload standards for staff working with older offenders need to be adjusted for the increased time and attention these inmates require. (This would include interdepartmental agreements, and consultation with the labor unions, Department of Personnel Administration, and Department of Finance to obtain advance buy-in to facilitate the budget change proposal process and the base and over crowding ["6-to-1"] staffing allocations.)

- The optimal manner to meet the needs of the older offenders for supportive care and assistance with activities of daily living (e.g., training low risk inmates, hiring personnel classifications such as nurse assistant or health aide, establishment of care assistance positions to assist older offenders with activities of daily living.)

It is recommended that the CDC establish an oversight responsibility to ensure that the needs of the older offender inmate and parolee population are met. This would include responsibility for the Task Force addressed in the above recommendation; implementation of the new Older Offender Program; monitoring compliance with program mandates; liaison with those individuals and organizations who assisted with Task Force activities; and program review and monitoring.

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Key to abbreviations:

ADHC	Adult Day Health Care
CCWF	Central California Women's Facility
CDA	California Department of Aging
CDC	California Department of Corrections
HCSD	Health Care Services Division
P&CSD	Parole and Community Services
P&CD	Planning and Construction Division
RD	Registered Dietitian

Appendix A

PROGRAMMING ACTIVITIES FOR OLDER OFFENDERS

The following activities are potential programming opportunities for older offenders. Additionally, these activities would also be appropriate for inmates with disabilities. These activities have been chosen because they can be accomplished at low or no cost, rely on community volunteers and institutional "talent," and many have potential for the generation of revenue to support the activity.

ACTIVITY	POSSIBLE INSTRUCTORS	POSSIBLE MATERIAL SOURCE	OUTCOMES	POTENTIAL FOR REVENUE GENERATION	POTENTIAL FOR CHARITABLE OUTCOME
Horticulture	Inmates Master Gardeners Local garden clubs Local colleges Community volunteers Joint Venture	 X X X X X Local garden stores and horticultural societies Other donations Revenue from sales	Flowers for facility Flowers for staff Packaged seeds Dried flower arrangements Flower crafts Potpourri Fruits and veggies Spices Dried gourds Dried Indian corn	 X X X X X X X X X	Flowers and decorative arrangements for hospitals, nursing homes, day care centers, etc.; fruits and veggies for food banks
Yarn Crafts	Inmates Community volunteers Yarn shops Art Facilitators Local colleges Hobby Craft Program	 X X X Staff (leftover yarn) Other donations Revenue from sales	Afghans Lap robes Ornaments Dolls Yarn wall hangings Hooked rugs	X X X X X X	Donate to hospitals, nursing homes, day care centers
Material Crafts	Inmates Community volunteers Yardage shops Craft shops Art Facilitators Local colleges Hobby Craft Program	 X X X X Staff (leftovers) Other donations Revenue from sales	Soft dolls Soft toys Doll clothes Rag rugs Rag baskets Ornaments Quilts Placemats and napkins Aprons Appliqué Fabric painting Lap robes	X X X X X X X X X X X X	Donate dolls to children's facilities; ornaments and lap robes to nursing homes

ACTIVITY	POSSIBLE INSTRUCTORS	POSSIBLE MATERIAL SOURCE	OUTCOMES	POTENTIAL FOR REVENUE GENERATION	POTENTIAL FOR CHARITABLE OUTCOME
Holiday Decorations	Inmates Art Facilitators Local colleges Community volunteers Craft shops Hobby Craft Program	 X X X Horticulture program Staff (leftovers) Other donations Revenue from sales	Decorations for various holidays Greeting cards	X X	Donate to hospitals, nursing homes, children's facilities, low income families
Wood Craft	Inmates Art Facilitators Community volunteers Local colleges Craft shops Hobby Craft Program	 X X X Lumber yards Staff (scrap wood) Wood shop scraps Other donations Revenue from sales	Wooden toys Wall hangings Decorative boxes Name plates Picture frames Shadow boxes Plant stands Foot stools Rocking horses	X X X X X X X X X	Donate toys to children's programs
Art Projects	Inmates Art Facilitators Community volunteers Local colleges Hobby and craft shops Hobby Craft Program	 X X X Staff (leftovers) Leftovers from other projects Other donations Revenue from sales	Paintings Drawings Mobiles Clay projects Prints Paper art	X X X X X X	Donate to hospitals, nursing homes, and children's facilities

Other types of activities suitable for older offender (and disabled) inmates include:

- Low impact exercises, including "sitter-cizes" for the mobility impaired, for 20 to 30 minutes per day;
- Small group activities such as book clubs (with access to large print and talking books); current affairs discussions; reality based exercises; reminiscing using sight, sound, and smell cues;
- Card and board games; chess and checkers;
- Crossword puzzles and other word games (available also in large print);
- Jigsaw puzzles;

- Occupational, music, and art therapy;
- Discussion groups which allow inmates to talk freely about physical and emotional concerns and difficulties; and
- Self-sufficiency exercises for those who will be paroling (e.g., handling money, paying bills, getting to the doctor, shopping, nutritional cooking, how not to become a victim of scams which prey on the elderly, etc.).

It has also been shown to be beneficial to have background music from the era most familiar to the inmates. This has a calming effect, promotes greater participation in activities, and may aid in maintaining order and security.

Appendix B

HANDLING INMATES WITH DEMENTIAS

Often viewed as a psychiatric disorder by much of the public, Alzheimer's is in fact a neurological disease characterized by a deficiency in the brain of chemicals known as neurotransmitters which allow brain cells to communicate with each other. When these cells stop communicating, says Dr. Zhaven Khachaturian director of the Office of Alzheimer's Disease Research at the National Institutes of Health in Bethesda, Md., the cells wither and die. Although Alzheimer's can affect speech, personality and motor functions, the most conspicuous early symptoms usually involve memory loss. In the more advanced stages, that loss can be devastating. "You and I may forget where we parked the car, but an Alzheimer's patient cannot remember if he drove that day," says Kachaturian. "He'll look at the car keys and forget what they're for."

In some cases, Alzheimer's patients have been frightened just by looking in the mirror. Because they have forgotten what they look like, they believe there is a stranger in the room. Ultimately, the disease robs them of the ability to feed or care for themselves. It usually leads to death eight to 10 years after it is diagnosed. (*People Weekly*, page 63)

According to current research and literature (e.g., The Alzheimer's Association), many people over the age of 65 will experience some type of senility, more commonly known today as dementia. This often manifests itself through such things as forgetfulness, taking a longer time to complete tasks or answer questions, or not being able to place a name with a face. For some, it will be the degenerative and fatal Alzheimer's disease (AD). For others, it may be the result of medication, physical illness, or mental illness. Sometimes the effects of medication-induced dementia can be mitigated or eradicated by a change in medications. Dementia brought on by illness may diminish when the illness has run its course. For the majority of those suffering from dementia, it will be part of the aging process, and will be permanent and degenerative. As the population of older offenders increases through longer sentences and more crimes committed by older persons, the CDC will be faced with increasing numbers of inmates with AD and other dementias. These inmates will change the way the CDC functions. Regardless of the cause, inmates with dementias will bring challenges to the correctional system.

Those most impacted by the increase in the number of inmates with dementia will be the custody staff who will have to learn a new way of dealing with these inmates. Persons with dementia do not process information the same way we do. Their frames of reference and reality, and concept of time, place, and self-image are distorted by the dementia. A person who is 80 may think of him or her self as a small child, a middle aged parent, or as another person all together. It may be the current year or 30 years ago. The inmate with dementia may have no concept of who this person in the uniform is who is giving orders

or why the orders are directed at him or her. He or she may not be able to find the way back to a housing unit or from a bathroom. As short-term memory diminishes, that person may forget what he or he was told to do five minutes ago. He or she may be unable to formulate a response to the simplest question, let alone a complex or multiple part one.

Persons with AD will not just suffer mental deterioration, but physical deterioration as well. Following is the expected prognosis and progression for a person with AD, as excerpted from *"Care of Alzheimer's Patients: A Manual for Nursing Home Staff"* (pages 25-27):

First stage: lasting two to four years, from first onset of symptoms to actual diagnosis, symptoms worsening until the second stage:

- Recent memory loss;
- Cannot remember what he or she was just told to do;
- Confusion about place: cannot remember how to get from one place to another even though he or she has been able to do this before;
- Inability to start a project or task unassisted;
- Mood and personality changes;
- Poor judgment;
- Takes longer to do routine tasks or chores;
- Loses things;
- Cannot remember appointments;
- Hides things;
- Gets easily upset.

Second stage: beginning two to ten years from the diagnosis:

- Increasing memory loss and confusion;
- Shorter attention span;
- Difficulty recognizing family and friends;

- Makes repetitive statements or motions;
- Restless, especially in the late afternoon and at night ("sundowning");
- Occasional muscle twitches or jerks;
- Perceptual-motor problems (e.g., difficulty in getting in or out of a chair, making a bed, etc.);
- Problems organizing thoughts and thinking logically;
- When unable to think of the right words, makes things up to finish the conversation;
- Problems with reading, writing and numbers (e.g., cannot read and follow signs, cannot write own name);
- May be suspicious (accusing others of taking his or her possessions or trying to do them harm), irritable, fidgety, teary or silly;
- Becomes sloppy; refuses or afraid to bathe; has trouble dressing; undresses at inappropriate times or in inappropriate places;
- Frequent gain and loss of weight as appetite wanes and waxes;
- May see, hear, or smell things that aren't there;
- May have fixed ideas that are not reality based (e.g., that they are in a hospital and there are babies in the next cell);
- Need full-time supervision.

Terminal Stage: Lasts one to three years and can occur anytime after diagnosis:

- Cannot recognize self in the mirror;
- Cannot recognize family, close friends, or staff;
- Loses weight even with a good diet;
- Little capacity for self care;
- Cannot communicate with words;

- Cannot control bowel or bladder, or both;
- May have difficulty in swallowing, seizures, and frequent skin infections due to breakdown of the skin;
- May groan, scream, or make grunting sounds;
- May try to put inappropriate things in mouth or suck on things;
- Sleeps more;
- Needs full time care and supervision;
- Will die.

The types of problems AD and other dementias will bring to the CDC can clearly be seen from this symptomology. Custody staff will have to learn new ways of interacting with these inmates. For example:

- Inmates with dementias can be expected to wander and to lose their way in getting from Point A to Point B, within the housing unit or on the grounds. They may miss count, appointments, meals, medications, or worse, be harmed by predator inmates when they wander into areas where they do not belong.
- They will have trouble following orders because they cannot remember what they were just told to do and be unable to complete tasks because they cannot remember what comes next.
- Because they will suffer from bladder and/or bowel incontinence, they will need on-demand access to bathrooms, regular toileting schedules, clean clothes, diapers, and clean linens. This may present a problem in transporting these inmates.
- Because they will see, hear, and smell things that aren't there and do not have a reality- based thought process, they will have to be reassured rather than corrected: correcting does no good and may lead to explosive behavior.
- They may become disoriented in a noisy or hostile situation and fail to obey shouted orders, placing themselves and others in jeopardy if there is an incident.
- They will need assistance in dressing, and in staying dressed.

- Inmates with dementias who act out will not respond to the same types of corrective action as other inmates. They cannot control their actions, are unaware that their actions are inappropriate, and will likely repeat the behaviors despite attempts at corrective action.

- These inmates will have no concept of which things are theirs and which belong to others. This will lead to inmates "stealing" from each other. If they "steal" from another inmate with dementia, the situation may or may not escalate. But if they "steal" from an inmate without dementia, there may be serious problems.

- Because these inmates lack judgment control, they may be preyed upon by other inmates, losing money, possessions, and canteen items, or suffering physical harm.

- These inmates may become disoriented or combative while being transported and upon transfer to another housing unit or institution. This may increase wandering, getting lost, and acting out.

- Inmates with dementia may not recall having just eaten or having taken medications. They may confuse morning with afternoon and insist that they did not get to go to canteen or to the library that day nor have they eaten anything all day. It will be difficult to convince them to the contrary.

- The inmate may not recognize his or her cell or cellmate or the Correctional Officer who has been assigned there every day for six months. Family members or attorneys may not be recognized or may be accused of trying to do harm.

- "Persons with acute or chronic confusion become more confused, restless and insecure late in the day and especially after dark. It is worse after a move or a change in the patient's routine. (They) become more demanding, restless, upset, suspicious, disoriented and even see, hear, or believe things that aren't real, especially at night. Attention span and concentration become even more limited. Patients become more impulsive. No one is sure what causes 'sundowning,' possibly a lack of sensory stimulation, possibly due to the day's activities using up available energy." (*Care of the Alzheimer's Patients*, pages 73-74.)

- As the dementia progresses, especially for those with AD, the inmates will need increasing assistance with accomplishing activities of daily living (dressing, bathing, eating, ambulating, maintaining personal hygiene, etc.).

The Geriatric Education Center of Michigan has published an excellent manual entitled: *"Understand Difficult Behaviors: Some Practical Suggestions for Coping With Alzheimer's Disease and Related Illnesses"* which would be an excellent resource for custody and other staff who will be dealing with inmates with dementias. The most

significant message in this manual is: **"Remember: The behavior is caused by an organic brain disease. The person is not deliberately trying to be nasty, stubborn, or annoy you."**

According to the authors, the first step in dealing with the difficult behavior is to understand why it is occurring. Staff must recognize that the inmate is not in control of the behavior and that there may be external forces which can be corrected to mitigate or eliminate the behavior. These behaviors may be caused by:

- Side effects of medications;
- Impaired vision or hearing which may be causing difficulty in understanding the message or completing the task;
- Acute or chronic illness, especially one causing pain which often leads to irritability;
- Dehydration and resultant confusion;
- Constipation;
- Depression;
- Fatigue;
- Physical discomforts, such as hunger, being too hot or too cold;
- Environment is too large, too small, too noisy, or too cluttered;
- There are too many distractions (sight, sound, smell, crowds, etc.) leading to excessive stimulation;
- Lack of orientation clues, such as arrows pointing the way to the door or bathroom;
- Poor adaptation to sensory environment (light contrasts, floor patterns which look like steps, glare, etc.);
- The task is too complicated, or has too many steps to it, leading to frustration and confusion;
- The task in new or unfamiliar.

If staff can identify and correct the external forces that are causing the behavior, the consequences of the behavior can be mitigated and future incidences of the behavior may be avoided. Staff must also recognize that "standard operating procedures" of dealing with inmates will not work with inmates with dementias and that they will have to learn new ways of handling these inmates. Following are some of the recommended "do's" and "do not's" for dealing with persons with dementias:

DO:

- Take a calm, gentle approach;
- Use a non-demanding approach, using humor, cheerfulness or cajoling;
- Use gentle, supportive touch, when touch is appropriate;
- Win the person's trust by starting out making social conversation;
- Talk to the inmate in a place free from distractions;
- Begin by orienting the person, calling him or her by name and identifying yourself;
- Look directly at the person to get and maintain his or her attention;
- Be at eye level, speak slowly and clearly in a warm, easy-going manner, using short, simple words and sentences and keeping the pitch of your voice low and even;
- Ask simple questions that only require a "yes" or "no" answer. Let the inmate answer one question before asking the next. Allow the inmate enough time to think of the appropriate response. Be prepared to repeat or rephrase the question if the inmate has difficulty understanding it;
- Use very concrete terms and familiar words which do not have to be interpreted or are not likely to be misinterpreted;
- Give simple choices when appropriate (e.g., "Do you want to put on a jacket or a sweater?" instead of "What do you want to wear to go outside?");
- If giving instructions, break the task down into simple steps, giving ample time for the information to sink in. Repeat the instructions exactly the same way each time, without paraphrasing;

- If the inmate is having trouble understanding verbal instructions, try using visual cues or directions;

- If you are having trouble understanding the inmate, try to focus on any words you do understand to piece together the message. If you cannot understand the words, try to identify and acknowledge the emotion or feeling (e.g., "I cannot understand what you are saying, but you sound as if you are angry."); and

- Most importantly, stay calm and be patient.

DO NOT:

- Do not argue. It does no good and may make the situation worse. People with dementia are incapable of rational, logical thought or actions;

- Do not order the person around;

- Do not tell the person what he or she can or cannot do. If the inmate cannot go outside, instead of telling him or her that directly, make a statement such as: "Let's go watch television now." Or "Why do not you sit here and look at this book;"

- Do not be condescending;

- Do not ask direct questions that rely on memory, instead, phrase them into a statement (e.g., Instead of asking the inmate who the man in the photo is, state "That man looks like your brother."); and, most importantly,

- Do not talk about the inmate in front of him or her as if the inmate was not there.

Handling inmates with dementias may be difficult for CDC staff who are used to issuing orders and adhering to strict operational procedures, rules, and regulations. Lack of understanding and knowledge about AD and other dementias, and, to some degree, the staff's own fears of seeing themselves in old age with these problems, can throw up roadblocks to effectively handling the unique situations these inmates will bring. Training of medical, custody, parole, and ancillary staff in geriatrics, and especially in AD and other dementias, will therefore be vitally important.

Appendix C

OLDER OFFENDER HEALTH ISSUES

As stated in the report, older offenders can be expected to present with at least three chronic illnesses during their incarceration. According to *Healthwise*, this is due to "...age-related erosion of functional reserve in many systems and organs and because of impaired adaptive responses to challenge. Because of coincident pathology, a disease in one organ may precipitate decompensation in another." (Page 147) The tougher sentencing laws, longer sentences and an increase in the number of inmates serving life terms may increase this number of chronic illnesses for each older offender. Not only will CDC clinicians be faced with an increase in "routine" medical problems, they must also address the special needs and circumstances of the older offender population. This will no doubt necessitate the training of clinicians in geriatric health care as well as focused recruitment of practitioners skilled and knowledgeable in geriatrics.

In addition to those health conditions listed in the body of the report, the following are some of the health care issues the CDC can expect to face in an older offender inmate population.

- Increased incidence of disease due to a weaker immune system brought on by decreased thymic function and a decrease in the number of T-cells.
- Increased risk of a cold or flu becoming a pneumonia.
- Increased importance of providing tetanus vaccines every ten years, flu vaccines yearly, and a one-time pneumonia vaccine for every inmate 65 or older.
- Increase in the number of falls ("Falls are the leading cause of nonfatal injuries and the second leading cause of unintentional injury related deaths." [*White Paper on Elderly Health*, AMA, page 2464.])
- Increase in the number of wrist and hip fractures.
- Increased incidence of arthritis and osteoporosis, the latter especially in women.
- Increased incidence of emphysema, necessitating constant oxygen access.
- Increased incidence of heart disease and attack; congestive heart failure; edema; arrhythmias, etc.

- Increase in phlebitis and thrombophlebitis due to decreased activity, cardiopulmonary disease, remaining in a sitting position for too long, or remaining in bed too long.

- Increase in cancers, especially colorectal; prostate in men; cervical, ovarian and breast in women.

- Increased gallbladder disease, with a higher possibility for women on estrogen replacement therapy.

- Dementias, especially Alzheimer's disease.

- Eye diseases such as cataracts, glaucoma, and macular degeneration.

- Increased dental problems that may affect eating and health status.

- Dry skin leading to cracks and infections, and increased incidence of skin cancers.

- Dehydration brought on by a decreased awareness of thirst and by medications such as diuretics.

- Increased incidence of pharmacology problems brought on by multiple prescriptions; improper dosing ("*The consequences of inappropriate drug choices for the elderly include over sedation, orthostatic hypotension, and decreased cholinergic tone. In the frail elderly, this may cause mental deterioration, falls, and bowel and bladder dysfunction. The cost of these side effects, which are often avoidable by optimal drug selection, is staggering in terms of morbidity, mortality, and monetary burden*." [AMA, page 2469]); compliance problems; taking medication with insufficient fluids; interference between prescription medications; interference between prescription and over-the-counter medications; and changes in physiology in the elderly:

    - Reduced gastric juices;
    - Altered gastric emptying;
    - Reduced splanchnic blood flow;
    - Reduced body water volume;
    - Increased body fat;
    - Decreased body mass;
    - Decreased serum albumin;
    - Decreased liver blood flow;
    - Decreased glomerular filtration rate;
    - Decreased renal tubular function;
    - Decreased hepatic uptake; and
    - Decreased renal and hepatic function.

- Increased sensitivity to heat risk situations when taking psychotropic medications, due in part to the aging process and resultant thinning of the skin.

- The need to reduce "normal" dosages and frequencies of psychotropic medications in mentally ill older offenders. The need for more frequent evaluation of long term use of these medications and the problems of medication compliance exacerbated by the forgetfulness of dementia.

- Increased depressions, possibly as a side effect of medications, or the loss of family and friends.

- Increased central nervous system incidents brought on by herpes zoster, meningitis (including tubercular), brain abscesses, varicella zoster, and herpes simplex virus.

- Increase in the incidence of headaches, often due to high blood pressure and vascular problems.

- Increased incidence of bowel and bladder incontinence, constipation and fecal impaction.
- Increased incidence of epilepsy (82/100,000 for those over 60 as compared to 12/100,000 aged 40 to 59).

- Increased incidence of neuropathies.

- Increased risk of herpes simplex virus encephalitis, with a 70 percent mortality rate for the elderly.

- Increased incidence of hiatus hernia.

- Increased incidence of diabetes and its complications in the elderly.

- Increased incidence of leg and decubitis ulcers.

- Older female health issues such as menopause, hormone replacement therapy, increased cancer risks, osteoporosis, etc.

- Increase in post-operative complications (longer time to heal, stroke, changes in central nervous system function, sepsis, thromboembolism, hypoventilation; critical need to monitor urinary output and balance fluids and blood volume).

- Increased need for eyeglasses, hearing aids, dentures, walkers, canes, wheelchairs, etc.

- Differing nutritional needs:

- Decrease in liver function which causes a decrease in synthesis of nutrients and enzymes;
- Decrease in digestive process and absorption due to decrease in enzymes and gastric juices;
- Changes in bowel function and need for more fiber and bulk;
- Decrease in renal function leading to a decrease in conservation of nutrients and water balance;
- Decrease in saliva, making digestion and swallowing more difficult;
- Development of lactose, glucose and carbonation intolerance;
- Need to balance protein intake needs: higher need versus impact on impaired renal function;
- Need for fewer calories and softer food;
- Changes in smell and taste which impact appetite;
- Possibility of vitamin and mineral deficiencies, especially B_{12}, C, A, E, calcium, iron, zinc, copper, and potassium, if taking diuretics;
- Need for increased zinc to aid in healing and maintaining immune system function.

- Issues of death and dying:

  - Do not resuscitate orders;
  - Living Wills;
  - Placement on and removal from life support systems;
  - Knowledge of burial arrangements.

- Mental health issues:

  - Increased need to monitor medications;
  - Higher levels of suicidality, especially in males;
  - Increased incidence of depression.

Meeting the unique health care needs of the increasing population of older offenders will make the recruitment and training of CDC health care providers even more critical and challenging.

Appendix D

ADULT DAY CARE SERVICES

The CDC will have to look at various models in developing its Older Offender Program. One such model, which can be utilized in the prison setting and also can be of assistance in placing older parolees, is the Adult Day Care Services model.

According to materials from the California Department of Aging, Department of Social Services, and the California Association for Adult Day Services, adult day care services (ADCS) provide treatment for adults whose ability to live independently is threatened or impaired. There are four types of ADCS in California:

- Adult Day Care (ADC): These provide nonmedical care to adults who are in need of personal care services, supervision, or assistance essential for maintaining activities of daily living. These centers are funded through sources such as client fees, Older Americans Act, donations, grants, and other fund raising activities.

- Adult Day Support Center (ADSC): ADSC's provide nonmedical social, psychosocial, and related support services to functionally impaired adults. Funding comes from client fees, foundation and municipal funds, Older Americans Act, donations, and other fund raising activities.

- Adult Day Health Care (ADHC): These centers provide medical, rehabilitative, and social services to the elderly as well as to adults with functional impairments for the purpose of restoring or maintaining optimal capacity for self care. ADHC's are funded through client fees, Medi-Cal reimbursement, foundation and municipal funds, Older Americans Act, donations, and other fund raising activities.

- Alzheimer's Day Care Resource Center (ADCRC): ADCRC's provide day care for persons in the moderate to severe stages of Alzheimer's disease or other dementias as well as support to their families and caregivers. These centers are funded through State contracts (up to $60,000 annually with a 25 percent local matching requirement), client fees, Older Americans Act, grants, donations, and other fund raising activities.

The ADCs and ADSCs are licensed by the Department of Social Services. The ADHCs are licensed by the Department of Health Services. Currently, ADCRs do not require licensure, but are monitored by the California Department of Aging. The ADCS's provide the following services:

	ADC	**ADSC**	**ADHC**	**ADCRC**
Activities	X	X	X	X
Health monitoring			X	
Supervision	X	X	X	
Assistance with ADL	X	X	X	X
Meals and snacks	X	X	X	X

	ADC	**ADSC**	**ADHC**	**ADCRC**
Social services		X	X	
Transportation			X	
Referral to other services		X	X	X
Coordination with other services		X	X	X
Family support services		X	X	X
Nursing			X	
Nutrition Counseling and Education			X	
Therapy			X	
Psychosocial assessment			X	X
Public information				X
Emergency Medical Services	X	X	X	
Training				X

These services are intended to:

- Stabilize medical conditions and avoid frequent hospitalizations;
- Prevent secondary disabilities that result from excessive bed rest or inactivity;
- Improve ability to carry out daily activities through sustained treatment and the therapeutic environment;
- Improve the quality of life for the participant (and, in the community, for the caregiver);
- Increase the self-esteem and dignity of the participant;
- Improve, stabilize, or retard the deterioration of cognitive functioning;
- Increase verbal ability and mobility;

- Minimize catastrophic reactions such as inappropriate anger, combativeness, refusal to cooperate, suspiciousness, wandering, and severe depression;
- Provide opportunities for friendships and decrease isolation and loneliness;
- Improve behavior and mood;
- Improve nutritional intake; and
- Lessen the incidence and impact of acute episodes through monitoring and rapid intervention.

Typically, the participant attends the ADCS center one to five days a week, arriving in the early morning and staying to mid-afternoon. While at the center, the participant will take part in activities geared toward increasing or stabilizing mental and physical functioning. Activities are structured to be applicable to ambulatory, wheelchair bound, and limited mobility participants, as well as those with functional impairments (e.g., those non-elderly and elderly with disabilities). Bulletin boards and activities center around awareness of day, date, time, and place. Physical therapy assists with maintenance of mobility, while recreational therapy assists with both mobility and cognitive issues. In the ADHC model, participants have vital signs and medications monitored, and are referred for more intensive medical services as needed. Participants in ADCS centers are also served nutritional meals and snacks.

Granted, ADCS's are not the usual correctional model. However, there are clear advantages to the CDC establishing ADCS-like programs in institutions housing older offenders, as well as being aware of these services when paroling older offenders. One has only to look at the facts:

- The CDC older offender inmate population is going to increase.
- Inmates will be in prison longer, many with life sentences.
- An increasing number of persons will grow old in prison, especially under the "Three Strikes" law.
- Older offenders will bring new, and potentially expensive, challenges to the CDC in areas such as housing, programming, medical care, and "standard operating procedures."
- There will be an increase in the number of inmates with Alzheimer's disease and other dementias.

- Persons with dementia can become behavioral problems. (See Appendix B: Handling Inmates With Dementias.)
- Older inmates will present with multiple chronic diseases, requiring multiple medications.
- Improper medication and noncompliance with medication regiments will create additional health problems.
- Mental deterioration leads to physical deterioration.
- Appropriate medical monitoring can mitigate or prevent costly hospitalizations.
- Proper nutrition can mitigate health problems.
- Activity can mitigate health problems.
- If an elderly person is taught the proper ways to get up from bed or a sitting position, and is provided with assistance in ambulating, hip fractures and their complications, can be lessened.
- Socialization can mitigate depression, withdrawal, and health problems.
- The ADCS afford the environment and mechanism to provide the services that will forestall costly medical and psychological deterioration.
- If you can keep an elderly person mentally and physically active; provide medical monitoring, especially of medications; provide appropriate nutrition; mitigate difficult behaviors indicative of aging and dementias, the prison environment will be safer and there will be a delay or avoidance in costly hospitalization.

It makes good penalogical sense to provide housing and programs for older offenders that will afford them a safe environment and forestall costly medical problems. The ADCS model will facilitate this and consideration should be given to establishing one at each institution housing significant numbers of older offenders. The programs can be set up in housing units, day rooms, or other available space. Medical staff can be deployed to the ADSC site for a couple of hours a day to monitor health status, review medications, and refer for needed medical care. There is technical assistance available from the community to develop plans for daily activities. Staffing needs may be partially met through internships with medical, nursing, social work, recreational, occupational, speech, and physical therapy students. Community volunteers, especially from organizations serving senior citizens, may be available, as may be donations of funds and materials, or grant moneys. Pay numbers can be set up for able-bodied inmates to assist in some of the care and activities, especially in assisting the older offenders with canteen, library, clothing/linen exchange, and accessing the dining halls. Activities, such as those

listed in Appendix A: *Programming Activities for Older Offenders*, can be incorporated into the Adult Day Care Services model.

The Parole and Community Services Division also needs to become aware of, and begin liaison with the local ADCS. Few, if any, of paroling older offenders will have family support systems available to them. The ADCS centers provide a mechanism for obtaining needed support, medical monitoring, nutritional services, and socialization opportunities that may lessen willful parole violations as a means of obtaining needed care and services.

Appendix E

PAROLE ISSUES

The increase in the number of older offenders will also provide challenges for the Parole and Community Services Division (P&CSD), especially if legislation provides for alternatives to incarceration for older offenders who do not pose a danger to society and/or early release to a lengthy parole. These challenges will include:

- Older parolees will be less likely to have family support systems to provide housing and care.

- Employment opportunities for older parolees will not be readily available, compromising the ability for self-support. As Social Security may not be an option, these parolees will need to be linked with the welfare, food stamp, and feeding assistance systems.

- Older parolees will have several chronic illnesses, requiring medical and medication monitoring. These parolees will not have private insurance and therefore must be assisted in obtaining and maintaining Medi-Cal coverage.

- Older parolees may have difficulty in accessing needed services (getting to and from medical appointments, picking up needed prescriptions, getting to the welfare office, obtaining the monthly allocation of food stamps, getting to the parole office, etc.) due to transportation problems. This may necessitate linkages to services and organizations that provide transportation. There is usually a cost involved for these transportation services.

- Some older parolees will need to be paroled to a nursing home or board and care facility. This will require cooperation with the institution pre-parole to locate a facility willing to accept the parolee and qualification for Medi-Cal to pay for the care.

- Older persons often suffer malnutrition for a variety of reasons: no money for food; problems in shopping and transporting food; living arrangements (e.g., residence hotels) which prohibit cooking or limit it to what can be cooked on a hot plate; not knowing how to cook, or what their nutritional needs are; altered sense of taste and smell which diminishes appetite; effects of medications, etc. In addition, older persons often have a diminished feeling of thirst that leads to dehydration. This will require additional monitoring and may lead to increased medical problems, hospitalizations, or death.

- Older parolees without families or community ties may die while on parole. The role of the Parole Agents may thus change to include awareness of funeral and burial arrangements and/or assisting the parolee in making these arrangements. Likewise, the Agents may need to be aware of Living Wills and "do not resuscitate" orders and arrangements and possibly act as surrogate family members in seeing that these are carried out.

- Parole Agents will likely be dealing with increased caseloads of parolees with Alzheimer's disease (AD) and other dementias. As discussed in Appendix B: *Handling Inmates With Dementias*, this will pose a similar situation for Parole Agents as it will for custody staff.
- Older parolees who cannot find adequate and safe housing, access to medical care and socialization, or who cannot take care of themselves may willfully violate the conditions of parole to go back to the "comfortable" surrounding and access to care the prison offers. (A similar phenomenon has been experienced with the HIV positive population who cannot find housing or access medical care and willfully violate parole to return to prison. According to Diana D. Smith, Facility Captain at the California Institution for Men's Elm Hall, this same pattern has been seen in elderly inmates paroling from Elm Hall.)

There are services available in the community to offset some of these problems. Parole agents will need to become familiar with what is available in their jurisdictions. Parole decisions may need to be made based on where the older parolee's needs can be met instead of where he or she would normally be paroled.

Consideration should be given to working with the Departments of Social Services, Health Services, and Aging to either establish Adult Day Care and Adult Day Health Care centers for parolees, or facilitate parolee participation in existing centers.

Consideration should be given to working with the Department of Health Services and providers to either establish community based nursing homes for parolees or facilitate paroling older offenders into nursing homes.

Consideration should be given to the establishment of congregate living facilities in the community to house older parolees in a safe environment where their age related needs can be met.

Finally, Parole Agents must be trained in geriatrics, and especially in dealing with parolees with AD and other dementias.

Appendix F

PROJECT FOR OLDER PRISONERS

The Project for Older Prisoners (POP) was founded in 1989 by (then) professor Jonathan Turley of the Tulane Law School in New Orleans. It was begun as a public advocacy group whose chief objectives were to reduce recidivism and relieve overcrowding by identifying low-risk, high-cost offenders for early release.

The POP staff have studied other correctional systems and made recommendations to them. Among those recommendations is the establishment of housing units specifically for older inmates:

"Two primary goals are achieved by segregating older inmates in a correctional nursing home. The first goal achieved is protection of older inmates from victimization at the hands of younger inmates. The second is a more efficient allocation of security and health care costs, potentially tens of thousands of dollars.

"The most immediate savings from a geriatric unit are reclaimed through decreases in fixed security costs for the facility. A geriatric unit generally requires fewer security personnel due to the lower risk of the population.

"POP has found that older inmates visit infirmaries on a regular basis and far in excess of younger prisoners for a variety of non-emergency treatments. By placing older offenders in special facilities (the state) can reduce some pressure on other in-house treatment centers which have little time or experience to deal with gerontological illnesses."

Additionally, "...most geriatric illnesses are preventable with early detection and treatment", facilitated by housing geriatric inmates in selected institutions. (*Preliminary Report to the State of Illinois*, Pages 16-19.)

This recommendation is echoed by the National Institute of Corrections. While they do recommend mainstreaming those inmates whose needs can be met in the general population, they suggest separation of the frail, easily victimized, and special needs older offenders: *"Special units enable the development of programs and services specifically designed for older inmates and provide a concentration of specialized staff and resources for the group."* (*An Administrative Overview of the Older Inmate*, page 12.)

Appendix G

(The following document, which was previously submitted to the Departmental Directorate, was prepared by CDC staff as part of the CDC Leadership Institute. It is partially reproduced here, unedited, as an example of the knowledge and commitment of CDC staff to the issue of an aging inmate population.)

COMMUNITY-BASED CORRECTIONAL NURSING HOMES AND HOSPICES

For CDC's growing geriatric and disabled "Three Strikes" inmate population

CDC LEADERSHIP INSTITUTE
CSU-CHICO
SEPTEMBER 1995

D. D. Smith, Facility Captain, Elm Hall (geriatric and disabled unit), California Institution for Men

Gilbert Sainz, M. D., (former) Chief Medical Officer, Deuel Vocational Institution

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With thanks to:

Chris Cummings, Ph.D., Health Care Services Division, Planning Branch

Please note:

This is a rudimentary concept proposal prepared as an adjunct to Group Presentation Projects created at the CDC Leadership Institute, CSU-Chico. The authors are deeply committed to further pursuit of the issues raised and see value in the cross disciplinary (medical, custody, program) approach to its design and facilitation. We are available to the Department in any capacity for additional project development.

SITUATION OVERVIEW:

Tougher sentencing laws, especially California's "Three Strikes Law," are increasing the number of aged, disabled, and medically deteriorating inmates housed in mainline units, specialized housing units, CDC hospitals, and contract hospitals, and hospitals in the community.

Long-term medical care, assisted living needs, and building modifications for this growing population are economically and structurally challenging.

Another disturbing trend in specialized housing units such as Elm Hall-CIM, and in similarly situated facilities in other states, is what appears to be willful violation of parole as a means to secure basic medical care, housing, and a sense of "community."

Elm Hall, a 156 bed unit unique in the CDC system, was originally designed to house minimum security inmates over 60 years of age in an open dormitory setting. Correctional Officer coverage is augmented by Medical Technical Assistant (MTA) assignment on second and third watches.

Today, inmates of all ages and varying custody levels are transferred to Elm Hall from other prisons, based on needs related to age, amputated limbs, seizure disorders, Alzheimer's, post-stroke, chemotherapy, diabetes management, and dialysis. Each inmate must be medically endorsed and classified as "well-handicapped" (able to bathe self, ambulate to meals, adapt to an open dorm setting). The unit now houses 30 to 40 wheelchair cases. The oldest inmate in recent years was an active 94-year old. Great effort is made to employ as many inmates as possible, accommodating medical limitations. Day-for-day credit is an advantage to CDC.

The unique problems of such a population has attracted media interest and has provided supervised student intern opportunities for social work graduate students attending college in the area.

Medical and geriatric offender information nationwide is being collected and evaluated at the National Institute of Corrections, Longmont, Colorado. CNN News Services has featured the growing dilemma in a one-hour documentary "Maximum Insecurity." Much of the country appears to be looking to California for leadership solutions because of our numbers, diversity, and historical resourcefulness.

DISCRETE ELEMENTS:

- Increasing demand on medical dollars, services, and structural accommodations.
- Increasing number of inmates aged 60, 70 and 80-plus years.

- Lengthened and inflexible mandatory minimums under "Three Strikes" legislation.

- Anticipated increase in kidney and liver related diseases due to drug and alcohol abuse, leading to increased treatment costs. Also, Hepatitis-C increases.

- Growing homeless population throughout the state, without medical insurance or medical access. This population includes a growing psychiatric component.

- Observed trend of willful violation of parole to ensure return to the security of basic medical care, food, and shelter, and the "community" of family surrogates (fellow inmates, caseworkers, and unit staff). It would appear that the more accommodating and assistive these units become, the more dependent on the CDC system and resources the inmates become.

- Community attitudes appear to be conflicting and uninformed regarding the level of threat posed by significantly disabled and/or dying inmates. Citizens are not cognizant of the inmate aging process and its costs, and tend to think of prisoners as youthful, menacing, lifelong threats.

A VISIONARY ALTERNATIVE:

As experienced institutional health care providers and program managers, we can envision community-based correctional nursing homes and hospices placed near contract hospitals and prison hospital facilities. These CDC out-based units (could be fenced landscaped barrier buffer zones) would provide secure basic care and assisted-living of selected inmates and parolees not posing serious risk to the community. This would be less than the cost of 24 hour institution formula Correctional Officer coverage. Much like Community Correctional Facilities (CCF's) in place today, Correctional Nursing Homes could be staffed with minimal Correctional Officer (CO), Medical Technical Assistant (MTA) and Certified Nurse Assistant (CNA) supervision. Scheduled sick call rounds would be conducted by physicians from the nearest CDC prison facility (much like any nursing home). Hospital admission, routine or emergency, would be handled via CDC contract arrangement.

Community-based correctional hospices could be established along similar concept provisions, involving basic medical care and social worker services.

Preparatory and ongoing education of the public, re: purpose, operations and security emphasis, will be necessary to obtain and sustain community support.

OTHER ALTERNATIVES:

If all committed inmates must serve entire sentences, through advanced age, senility, deteriorating body functions and loss of body functions, assisted-care programs will have to be developed on an increasing scale. The community-based proposals will serve only the low-risk portion of this population. Remaining alternatives include:

- Building or modifying existing facilities to house large numbers of assisted-care inmates. These facilities must be situated near existing CDC hospitals. These units will displace units now in operation. Site selection must consider climate, altitude, pollutant index and weather extremes. This will have to be done to a significant extent, no matter what.

- Mixing assisted-care inmates among general population, handling likely lawsuits and protection concerns on a case-by-case basis.

- Increasing compassionate release referrals.

- Restructuring parole violation criteria to mitigate assisted-care parolee return-to-custody violations to the lowest possible percentage.

- Contract out with existing nursing home facilities and supplement security with Correctional Officers. *(Note: This is the model being used by the New Jersey Department of Corrections. -- Author's comment)*

- Contest return of senile and psychiatric cases in assisted-care category and press for referral to State Mental facilities.

- Implement hospice programs in existing CDC facilities.

ADVANTAGES OF DEVELOPING COMMUNITY-BASED FACILITIES FOR LOW-RISK ASSISTED-CARE INMATES:

- Reduced overall custody coverage costs.

- Employment for community residents, CNA's, maintenance personnel, service personnel.

- Lowest level of basic care for homeless, cleaning up a portion of transients on the street, reduced street nuisance crimes, etc.

- Disease control, communicable disease reporting. Disease treatment in developing stages, reduced emergency room and advanced care costs.

- Community participation in ameliorating community problems.

- Improved perception of Corrections Department as a community service provider.

POSSIBLE NEGATIVE IMPACT:

- May be perceived by community or critics as a "criminal welfare" or "convict Medi-Cal" program. This perception could be mitigated via publicity and community education efforts.

IMPLEMENTATION REQUIREMENTS:

- Establish planning/study group, utilizing Health Care Services Division **and** institution staff experienced in assisted-care program management as it exists currently (Elm Hall physicians, MTA's, and custody, classification, and counseling program managers).

- Establish current statistics regarding parole violation and return rates for geriatric and disabled parolee group. Establish baseline return rate.

- Anticipate community concern and interest. Develop advance community approach and education contingencies. Consider issues related to community self-interest and needs.

- Establish site selection committee to propose site recommendations addressing:
    - Community hospital contracting
    - Existing institution-based medical services and transportation resources
    - Expected community acceptance and resistance issues
    - Ancillary resources (Senior Citizens groups, Match-2 programs, outreach groups, hospice counseling, etc.).

- Combine contract, medical, custody and social work proposals and input in varying combinations and arrangements, providing a broad spectrum of prototype choices.

- Request authorization. commitment and funding for a pilot facility when most feasible proposal is fully developed and analyzed.

- Evaluate pilot facility through all stages of development and activation. Re-determine Departmental needs, direction, resources, and make appropriate modifications.

- Share analysis information and recommendations with national prison information network systems. Maintain all cost data in accessible information bases.

- Utilize medical teleconferencing technology as available and appropriate to enhance site communication with HCSD hubs.

- Following activation of pilot facilities, establish and maintain parolee violation and return statistics to determine impact and cost savings figures. Compare data with baseline figures.

STAKEHOLDER ISSUES:

• Director of Corrections	Reduced Departmental liability and litigation regarding geriatric and terminally ill inmate management.
• Institution Wardens	Mainline and Reception Center beds freed up for routine commitments; no longer enrouter nursing home beds for long-term hospital outpatients or assisted-care encumbrance.
• CDC Transportation Teams	Reduced air ambulance traffic, special van accommodation medical consultant trips. fewer hospital runs, fewer parolee return pickups.
• Parole Division	Reduced paperwork. Reduced BPT revocation related activity. Reduced parolee placement and effort regarding placing assisted-care parolees. Reduced "medical social work" hours. Increased time for parolee supervision.
• Taxpayers	Benefit from responsible use by CDC of State Tax revenues.
• Community	Employment opportunities for CNA's, physical therapists, social work and service personnel.
• CDC Treatment of People Goals	Hospice programs provide dignity for the dying.

Appendix H:

GERIATRIC INMATES: WHO ARE THEY AND ARE THEY SUITABLE FOR ALTERNATIVE PLACEMENT?

NOTE: This paper was prepared as a "stand-alone" document to assist in identifying those inmates who may be amenable to alternative placement. It is incorporated here to provide a profile of the geriatric inmate and to assist in planning activities.

EXECUTIVE SUMMARY

- As of December 31, 1997, there were 3,877 inmates aged 55 and older in the California Department of Corrections (CDC) system. It is projected that this number will increase to over 6,200 by the year 2010, and to over 17,000 by the year 2020.

- Older offenders are found in all CDC facilities.

- Over 56 percent of the male older offenders were already aged 55 and older at the time of their current incarceration; 62 percent of the females were aged 55 and older.

- In 1996, the Federal prison system housed the largest population of inmates aged 55 and older (5,934), followed by California (2,597), Alabama (2,159) and Texas (2,158).

- Currently, 18.53 percent of older male offenders have been committed for drug related crimes; 25.53 percent for murder, and 19.21 percent for sex crimes involving children.

- For older female offenders, 22.29 percent have been committed for drug related crimes, 45.14 percent for murder, and 18.86 percent for property crimes.

- Geriatric inmates cannot be viewed as a group when deciding appropriateness for alternative placement, but must be looked at on a case-by-case basis.

INTRODUCTION

The impending shortage of inmate beds, particularly beds for low custody inmates, is making it necessary for the California Department of Corrections (CDC), its control agencies and the Legislature, to identify specific types or groups of inmates that may be appropriate for alternative placement outside the "traditional" prison setting. Alternative placement includes, but is not limited to, house arrest; placement in community based skilled nursing facilities; contracting for beds in privately owned facilities such as board and care homes, congregate living facilities, or minimum security private prisons; conversion of closed state and community hospitals and military bases, either state run or by contract; etc.

One group frequently considered for alternative placement is the geriatric population: those inmates aged 55 and older. (Please refer to: "Older Inmates: The Impact of an Aging Inmate Population On the Correctional System," available from the CDC's Health Care Services Division, for a discussion on identifying inmates as "geriatric" beginning at age 55.) One of the reasons for looking at this population is the anticipated high cost of health care for geriatric inmates. As discussed in the above referenced report, elder inmates will likely have three or more chronic, costly medical conditions, in similar patterns to older citizens living in the community. The perceived attractiveness of this population is also partly based on the misconception that they would be eligible for Social Security benefits that would shift costs, including medical costs, from 100 percent State General Fund to a shared state/federal cost. In reality, as long as any inmate remains under the custody of the CDC, s/he is ineligible for Federal Financial Participation (FFP). Once paroled or released, the individual may become FFP eligible.

There is also a perception that older inmates are "harmless" senior citizens easily placed in the community in alternative incarceration. While we believed this to not be the case, we had no documentation to prove or disprove it. Using a "point-in-time" look at the geriatric inmate population, our conclusion is that, as with all other inmates, the geriatric inmate population cannot be generalized, but must be looked at on a case-by-case basis when determining appropriateness for alternative placement.

BACKGROUND

The CDC's Administrative Services Division's Offender Information Services Branch generated a list of all known inmates aged 55 and older, including the commitment crime and classification score level. The list was generated for the population incarcerated as of December 31, 1997, providing a point-in-time "snapshot" of this population. The list includes only information pertaining to the current incarceration, and does not provide information on prior criminal activity or whether the inmate is a parole violator or repeat offender. This information needs to be taken into consideration for alternative placement.

As of December 31, 1997, there were 3,877 inmates aged 55 and older within the CDC prison system: 3,702 males and 175 females. Of the 3,702 males, classification score level was available for 3,547, and commitment crime information was available for 3,676. For the female inmates, there were classification scores for 163 of the 175 females, and crime information for 173. For the most part, classification score level information was missing for inmates in Reception Centers. Crime information was missing for some inmates in Reception Centers as well as for some assigned to institutions.

Analysis of these data was done to determine both the classification level and the crime profile of this population. While the results depicted in this paper pertain specifically to the December 31, 1997 population, it can be assumed for planning purposes that the profile will pertain to any given point-in-time data set, with the caution that any plans to place these inmates into community placement will have to be done on a case-by-case basis.

Table 1 shows the number of older inmates by location, the percentage they represent of the institution population, and their classification score levels. Upon entry into the CDC system, each inmate goes through the classification process. (See California Code of Regulations: Title 15, Division 3, Chapter 1, Subchapter 4, Article 10, Section 3375, et seq., for further information.) Utilizing standardized criteria, each inmate is assigned a point score. This score determines the inmate's security level (I through IV, with Level I being the least restrictive) and the institutions to which the inmate may be assigned.

In addition to a security level, inmates may also be assigned a custody level that is used to further determine where and how an inmate is to be housed, programming restrictions, and the level of needed supervision. Unfortunately, the CDC does not have a data base that can accurately produce this information. As the custody level is an important indicator for alternative placement, any older inmate considered for such placement must have an individual case review.

Table 2 summarizes the commitment crime data contained in Tables 7 and 8. These data show that the majority of geriatric male inmates were committed for sex crimes involving children, murder, or drug related crimes. The majority of the female inmates were committed for murder, theft, or drug related crimes. This criminal activity, especially sex crimes against children, will make community placement difficult.

Table 3 displays age at commitment and Table 4 shows time served to date. A projection of the number of potential geriatric inmates by type of crime is shown in Table 5, while Table 6 contains information on the average length of time served for specified crimes by all inmates regardless of age. Also included in this report is information on national elder crime statistics.

TABLE 1: NUMBER AND CLASSIFICATION SCORE LEVEL BY LOCATION

Location [1]	**Total # /% of POP**	**Level I**	**Level 2**	**Level 3**	**Level 4**	**No Info.**
Males:						
ASP	222 3.90%	134	80	5	0	3
CAL	83 2.06%	12	4	26	39	2
CCC	50 0.87%	21	10	16	0	3
CCI	149 2.53%	97	24	6	17	5
CEN	65 1.41%	12	10	43	0	0
CIM	151 2.40%	100	37	5	1	8
CMC	335 5.06%	193	66	71	5	0
CMF	222 7.10%	92	29	65	33	3
COR	101 1.98%	31	6	20	43	1
CRC	104 2.50%	53	27	1	0	23
CTF	286 4.06%	210	74	0	0	2
CVSP	94 2.56%	58	36	0	0	0
DVI	84 2.33%	49	11	16	2	6
FOL	161 4.20%	107	52	1	0	1
HDSP	69 1.72%	12	12	17	27	1
ISP	79 1.76%	13	13	52	0	1
LAC	108 2.56%	28	13	27	40	0

[1] Refer to Appendix I for the prison abbreviations.

MCSP	119 3.43%	40	11	36	32	0
NKSP	86 1.77%	20	14	20	1	31
PBSP	57 1.51%	11	4	8	34	0
PVSP	122 2.62%	24	14	82	2	0
RJD	101 2.15%	42	15	42	0	2
SAC	62 1.90%	17	4	2	39	0
SATF	60 2.38%	24	21	11	2	2
SCC	47 0.81%	23	16	8	0	0
SOL	246 4.30%	142	50	52	0	2
SQ	166 2.80%	90	27	2	27	20
SVSP	81 1.98%	12	3	6	60	0
WSP	108 1.86%	46	15	16	0	31
S. Rita	15 2.14%	7	4	0	0	4
Pitchess	23 1.93%	16	4	2	0	1
CCF	33 0.61%	22	9	0	0	2
Re-entry	13 N/A	8	4	0	0	1
TOTAL	3702	1766	719	658	404	155

Location	**Total # /% of POP**	**Level I**	**Level 2**	**Level 3**	**Level 4**	**No Info.**
Females:						
CCWF	63 1.88%	42	8	7	4	2

CIW	47 2.59%	36	3	4	2	2
CRC	6 0.70%	3	0	0	0	3
NCWF	14 1.76%	7	6	1	0	0
VSPW	38 1.51%	17	5	8	3	5
CCF	6 1.49%	4	2	0	0	0
Re-entry	1 N/A	1	0	0	0	0
TOTAL	175	110	24	20	9	12

- The California Men's Colony (CMC) has the highest number of male geriatric inmates (335), followed by the California Training Facility (CTF) (286), CSP-Solano (SOL) (246), and the California Medical Facility (CMF) and Avenal State Prison (ASP) (with 222 each).

- CMF has the highest percentage by population with 7.10 percent, followed by CMC with 5.06 percent, SOL with 4.30 percent, and Folsom State Prison with 4.20 percent

- Excluding Pitchess (23), Santa Rita (15), Community Correctional Facilities (CCF's) (33) and re-entry facilities (13), SCC is the institution with the lowest number of male geriatric inmates (47) and the smallest percentage -- 0.81 percent.

- For female geriatric inmates, the Central California Women's Facility (CCWF) houses the most (63), while the California Rehabilitation Center (CRC) houses the fewest (6). The California Institution for Women (CIW) houses the largest percentage (2.59 percent). There is one geriatric female inmate in a re-entry facility.

- The majority of geriatric inmates are classified as Level I: 47.71 percent of the males and 62.86 percent of the females. When the classification levels of the geriatric males are compared to the classification levels of males regardless of age, the percentages are significantly higher for Level I, and are lower for Levels II-IV:

	Level I	Level II	Level III	Level IV
All Males:	32.00%	21.50%	24.40%	19.70%
Geriatric Males:	47.71%	19.43%	17.79%	10.93%

Classification level was unknown for 2.4 percent of all males and 4.14 percent of geriatric males.

- Unfortunately, due to lack of comparable data, similar comparisons cannot be made between geriatric female inmates and female inmates in general.

- Three hundred two of the males and twenty of the females are "lifers." Twenty-six of the men are on death row. There are no women 55 or older on death row.

TABLE 2: SUMMARY OF COMMITMENT CRIMES

CODES VIOLATED BY MALE INMATES:	# INMATES	PERCENT
1 Business Code: Forgery of a prescription	1	0.03%
1 Civil Code: Loan violation	1	0.03%
3 Corporations Code Sections: securities violations	6	0.16%
28 Health and Safety Code Sections: controlled substances	686	18.53%
2 Insurance Code Sections: filing false claims (Now Penal Code Section 550)	4	0.11%
139 Penal Code Sections:	2,836	76.67%
Murder 1st & 2nd; manslaughter, inc. vehicular	945	25.53%
Kidnap	56	1.51%
Robbery	127	3.42%
Assault, battery, assault with a deadly weapon, bodily injury	156	4.21%
Sex crimes against adults, rape	179	4.84%
Sex crimes against children: lewd and lascivious behavior; oral copulation; sexual abuse; indecent exposure	711	19.21%
Arson	20	0.54%
Burglary	201	5.43%
Theft, grand theft, petty theft, receiving stolen property, forgery	116	3.13%
Elder Abuse	4	0.11%
Other Penal Code violations	321	8.67%
8 Vehicle Code Sections: driving while intoxicated; reckless driving, auto theft	140	3.78%
2 Welfare and Institutions Code Sections: illegal food stamps, making false statements to obtain aid	2	0.05%
Code violated unknown	26	0.70%

TOTAL	3,702	100%*

CODES VIOLATED BY FEMALE INMATES:	# INMATES	PERCENT
10 Health and Safety Code Sections: controlled substances	39	22.29%
35 Penal Code Sections:	130	74.29%
Murder 1st & 2nd; manslaughter, inc. vehicular	79	45.14%
Assault, battery, assault with a deadly weapon, bodily injury, etc.	5	2.86%
Crimes against children: harm, lewd and lascivious conduct	2	1.14%
Arson	3	1.72%
Burglary, theft, grand theft, petty theft, receiving stolen property; fraud, etc.	33	18.86%
Elder abuse	1	0.58%
Other Penal Code violations	7	4.00%
3 Vehicle Code Sections: driving while intoxicated	3	1.72%
1 Welfare and Institutions Code Section: illegal food stamps	1	0.58%
Code violated unknown	2	1.14%
TOTAL	175	100%*

* Percentages may not add to 100% due to rounding.

The December 31, 1997 printout of inmates aged 55 and older contained commitment crime data for 3,376 of the males and 173 of the females. (See the Tables 7 and 8 beginning on page 18 for more specific detail.) An analysis of this crime data shows that few geriatric inmates would be suitable for alternative placement based solely upon the crime of commitment. However, a case-by-case review of each individual inmate may discover mitigating circumstances which would allow alternative placement.

TABLE 3: AGE AT COMMITMENT

This table shows the age (in five year increments) at which the now geriatric inmates were admitted to the CDC prison system for the current offense, and the number of inmates per age group.

AGE	# MALES	# FEMALES
15-19	5	0
20-24	24	0
25-29	31	1
30-34	44	0
35-39	109	7
40-44	262	10
45-49	382	20
50-54	750	28
55-59	1,142	69
60-64	512	25
65-69	266	11
70-74	132	3
75-79	34	0
80-84	9	1
TOTAL	3,702	175

For the male inmates, 2,095, or 56.60 percent, were aged 55 or above at the time of the current commitment. For the female inmates, 109, or 62.29 percent, were aged 55 or older at the time of the current incarceration. The majority of geriatric inmates are entering the system at an advanced age. This means that rather than having a large number of inmates entering the system at a young age and growing old in prison, we have the majority of elder inmates entering the system already at age 55 and older. This could have an impact on the CDC system in a number of areas.

If these are repeat offenders or habitual criminals, they will be fairly well institutionalized, making an easier transition back into prison. If they have been in and out of prison, they have had fairly consistent access to medical and dental care. If the current term is of short duration, they may parole out before their medical needs become complex. However, if they are habitual criminals, they may be re-incarcerated one or more times within their life spans. If the current term is lengthy and they will likely spend the rest of their lives in prison, it can be expected that they will require costly, age-related health care services and thus will contribute to higher health care expenditures by the department.

For first time offenders, entry into the correctional setting for the first time at an advanced age may be traumatic. Adjustment may take longer and may require mental health intervention. Depending on the pre-incarceration access to health care, these offenders may be in decent health or require extensive aging related health care services. If the current term is of short duration, they may parole out before their medical needs become complex. If the current term is lengthy and they will likely spend the rest of their lives in prison, they too, will require more costly age-related health care services.

Successful parole placement will depend on the commitment crime and the family and community support the elder offenders have. It may be assumed that inmates entering prison later in life will have established family and/or community ties that may sustain them through incarceration to parole. However, the type and severity of the commitment crime may cause these ties to be strained or broken. Habitual criminals and those who have been in prison for a long time will be less likely to have strong family or community ties.

TABLE 4: LENGTH OF INCARCERATION TO DATE

This table shows the length of time served (in five year increments) on the current commitment for inmates who are now aged 55 or older. The majority of the elder male (55.97 percent) and female (62.86 percent) inmate population in this data set have been in the CDC system for 5 or fewer years, indicating that they were already at an advanced age at the time of incarceration.

# YEARS	# MALES	# FEMALES
0-5 years	2,072	110
6-10 years	693	25
11-15 years	463	22
16-20 years	284	12
21-25 years	78	5
26-30 years	48	1
31-35 years	36	0
36-40 years	20	0
41-45 years	7	0
46-50 years	0	0
51-55 years	1	0
TOTAL	3,702	175

TABLE 5: PROJECTIONS

Using the data from the point-in-time snapshot and the March 4, 1998 version of the "Spring 1998 Population Projections by Age Group" provided by the Offender Information Branch, the number of geriatric inmates who will be incarcerated in the future for specific crimes was calculated. This information will be useful in planning for the housing needs of this population, whether it is within the traditional prison setting or in some type of alternative setting.

NOTE: The Health Care Services Division, following the recommendation of experts in the field, uses 55 as the beginning of "geriatric" age. The Offender Information Branch's age projections are based on ten year increments. Thus, the following projections use ages 60 and above while other data in this paper is based on age 55 and above. Additionally, due to rounding in the use of percentages, the columns will not always add to the totals.

The projections for male geriatric inmates are as follows:

		YEAR			
CODE VIOLATED:	PERCENT	2005	2010	2015	2020
Health and Safety Code	18.53%	654	1,285	2,437	4,073
Penal Code:	76.61%	2,704	5,314	10,074	16,841
Murder	25.53%	901	1,771	3,357	5,612
Kidnap	1.51%	53	105	199	332
Robbery	3.43%	121	238	451	754
Assault	4.21%	149	292	554	925
Sex crimes against adults	4.84%	171	336	636	1,064
Sex crimes against children	19.21%	678	1,333	2,526	4,223
Arson	0.53%	19	37	71	119
Burglary, theft, etc.	8.56%	302	594	1,126	1,882
Other Penal Code violations	8.79%	310	609	1,155	1,930
Other Code Violations	4.16%	147	289	547	914
Code violated unknown	0.70%	25	48	92	154
TOTAL MALE	**3,702**	**3,530**	**6,937**	**13,150**	**21,983**

INMATES					

The projections for female geriatric inmates are as follows:

		YEAR			
CODE VIOLATED:	PERCENT	2005	2010	2015	2020
Health and Safety Code	22.29%	42	68	115	172
Penal Code:	74.29%	139	227	384	572
Murder	45.14%	85	138	233	348
Assault	2.86%	5	9	15	22
Crimes against children	1.14%	2	3	6	9
Arson	1.72%	3	5	9	13
Burglary, theft, etc.	18.86%	35	58	98	145
Other Penal Code violations	4.57%	9	14	24	35
Other Code violations	2.87%	5	9	15	22
Code violated unknown	1.14%	2	3	6	9
TOTAL FEMALE INMATES	**175**	**188**	**306**	**517**	**770**

TABLE 6: AVERAGE TIME SERVED

Following is the average time served in CDC by all inmates, regardless of age, for the specified commitment offenses for felons released to parole for the first time in calendar year 1996. During that time period, no felons committed for murder in the first degree were released to parole. In addition, no females committed for attempted murder in the first degree or for sodomy were released to parole.

Commitment Offense	**# Mos. Served: Males**	**# Mos. Served: Females**
Murder 1st	N/A	N/A
Murder 2nd	140.5	114.7
Manslaughter	48.5	37.8
Vehicular manslaughter	15.7	10.5
Robbery	31.2	18.9
Assault /deadly weapon	24.3	18.1
Attempted murder 1st	119.2	N/A
Attempted murder 2nd	59.7	52.3
Other assault/battery	15.9	16.0
Rape	59.3	38.4
Lewd act with a child	39.5	29.4
Oral copulation	58.3	34.7
Sodomy	47.6	N/A
Penetration with object	39.5	15.3
Other sex crimes	14.0	20.0
Kidnap	49.9	31.1
Burglary 1st	29.3	20.2
Burglary 2nd	12.3	11.2
Grand theft	12.1	12.1
Petty theft/prior	12.5	11.2
Rec. stolen property	11.4	9.9
Vehicle theft	13.2	10.8
Forgery/fraud	12.5	10.6
Other property offenses	12.6	10.2
Poss. CS for sale	16.8	14.3
Sale of controlled sub.	22.5	18.3
Mfg. controlled sub.	24.0	21.6
Possess marij. for sale	9.7	8.6
Sale of marijuana	12.9	11.0
Possess CS	10.4	8.7
Other CS	15.7	17.3

Possess hashish	13.3	6.6
Other marijuana	12.1	10.5
Escape	14.2	12.9
DUI	11.0	10.7

Commitment Offense	**# Mos. Served: Males**	**# Mos. Served: Females**
Arson	19.2	22.4
Possess weapon	12.5	9.8
Other offenses	12.1	11.3

Source: "Time Served in Prison: Felons First Released to Parole by Offense, Calendar Year 1996"; CDC, Administrative Services Division, Offender Information Services Branch, Estimates and Statistical Analysis Section, Data Analysis Unit; May 1997.

NATIONAL ELDER CRIME DATA

The following data came from the *Sourcebook of Criminal Justice Statistics, 1996*; United States Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.

ARRESTS:

In 1995, nationwide, persons aged:

55-59 represented 4.2 percent of the U.S. population and 1.0 percent of arrestees;
60-64 represented 3.8 percent of the U.S. population and 0.6 percent of arrestees; and
65+ represented 12.8 percent of the U.S. population and 0.7 percent of arrestees.

CONVICTIONS:

Nationwide, in 1994, persons aged 60 and older represented the following percentages of criminal convictions:

Violent Crimes:	
Murder	1 percent
Rape	4 percent
Robbery	< 0.5 percent
Aggravated assault	1 percent
Other	3 percent
Property Crimes:	
Burglary	< 0.5 percent
Larceny	1 percent
Fraud	1 percent
Drug Crimes:	
Possession	1 percent
Trafficking	1 percent
Weapons Crimes:	1 percent
Other Crimes:	1 percent

PRISON POPULATION:

In 1996*, State and Federal correctional systems reported the following populations of inmates aged 55 and older:

STATE	NUMBER & % of POP		STATE	NUMBER & % of POP	
Alabama	2159	9.92%	Montana	86*	4.30%
Alaska	121	3.26%	Nebraska	88	2.69%
Arizona	827	3.66%	Nevada	381	4.64%
Arkansas	267	2.84%	New Hampshire	114	5.50%
California	2597	1.76%	New Jersey	429*	1.59%
Colorado	339	2.73%	New Mexico	157	3.32%
Connecticut	252	1.68%	New York	1339*	1.96%
Delaware	96*	2.00%	North Carolina	714	2.33%
Florida	1012	1.59%	North Dakota	33	4.57%
Georgia	773*	2.26%	Ohio	1532	3.32%
Hawaii	94	2.34%	Oklahoma	559	2.85%
Idaho	164	4.28%	Oregon	323	3.73%
Illinois	753	1.94%	Pennsylvania	1250	3.62%
Indiana	474*	2.94%	Rhode Island	75	2.29%
Iowa	61*	1.03%	South Carolina	88	0.43%
Kansas	238	3.07%	South Dakota	71*	3.86%
Kentucky	434	3.36%	Tennessee	467*	3.07%
Louisiana	653	2.44%	Texas	2158*	1.69%
Maine	30*	2.15%	Utah	158	4.01%
Maryland	155*	0.72%	Vermont	36	3.20%
Massachusetts	345*	2.95%	Virginia	282	1.02%
Michigan	1502	3.56%	Washington	462	3.69%
Minnesota	147	2.85%	West Virginia	126	4.58%
Mississippi	360	2.52%	Wisconsin	344	2.68%
Missouri	558	2.54%	Wyoming	39*	2.80%
			Federal	5934	5.62%

* Indicates 1994 data as 1996 data was unavailable.

The Federal prison has the largest number of older inmates (5,934), while the Alabama Department of Corrections has the largest percentage (9.92 percentage) of older offenders to total population. California has the highest number of geriatric inmates of all the state systems, but because of its large total inmate population, the CDC's percentage of older offenders to total population is relatively low.

CONCLUSION

In the wake of a burgeoning inmate population and the lack of public funding for new prison construction, the CDC will continue to explore alternatives to traditional incarceration. However, this must be done with caution. Each inmate is a unique individual, with an individualized criminal history, violence indicator, and amenability for non-traditional incarceration. While it may be appropriate to identify specific groups for consideration for alternative placement, it must be clearly understood that each individual within that group must be evaluated on a case-by-case basis.

Some older inmates may be good candidates for community placement. Perhaps some who committed murder a long time ago truly no longer pose a threat to society. Perhaps those who have committed "paper" crimes: filing false claims, forgery, etc., may no longer pose a threat as long as they do not re-enter the environment that provided the opportunity for these types of crimes. But sex offenders, especially those whose victims were children; those with a recent history of violent behavior; and those involved with controlled substances will likely continue to pose a risk to society if maintained in alternative placement situations.

In addition to looking at the individual inmate, the CDC must also look at the cost factors associated with alternative placement. Despite the location and the alternative type of housing, the inmate must continue to be treated as an inmate in terms of security, programming opportunities, access to health care, activities, privileges, etc. And the costs for those in alternative placement will continue to be State General Fund without federal financial participation.

TABLE 7: COMMITMENT CRIMES -- MALES

Code Section	Crime	Number & %	
Business 4390	Forgery of a prescription	1	0.03%
Civil 1916.3	Excessive interest on a loan	1	0.03%
Corp. 25401	Sale or purchase of securities under false information	3	0.08%
Corp. 25110	Unlawful sale of securities	2	0.05%
Corp. 25541	Use of a device to defraud	1	0.03%
H&S 11163	Official (prescription) blanks: number issued at one time	1	0.03%
H&S 11173 (A)	Obtain a controlled substance by fraud	1	0.03%
H&S 11350	Possession of designated controlled substance	1	0.03%
H&S 11350 (A)	Possession of controlled substance	188	5.10%
H&S 11351	Possession or purchase of controlled substance	97	2.62%
H&S 11351 (A)	Possession or purchase of controlled substance	7	0.19%
H&S 11351.5	Possession of cocaine base for sale	53	1.43%
H&S 11352	Transport or sale of controlled substance	10	0.27%
H&S 11352 (A)	Transport of controlled substance into state for sale	140	3.78%
H&S 11352 (B)	Transport or sale of controlled substance from county to county	1	0.03%
H&S 11353	Adult inducing minor to use controlled substance	3	0.08%
H&S 11355	Mislabeling of a drug	1	0.03%
H&S 11358	Plant, cultivate, harvest, dry, process marijuana	4	0.11%
H&S 11359	Possess marijuana for sale	11	0.30%
H&S 11360 (A)	Transport marijuana into state for sale	7	0.19%
H&S 11361 (B)	Adult using minor in sale or transport of marijuana	2	0.05%
H&S 11366	Open or maintain an unlawful place for selling or using a controlled substance	1	0.03%
H&S 11366.5 (A)	Making space available for the manufacture, storage or sale of controlled substance	2	0.05%

H&S 11366.8 (A)	Use of false compartment to conceal controlled substance	1	0.03%
H&S 11370.1 (A)	Possession of controlled substance and firearm	2	0.05%
H&S 11377	Possession of specified and schedules controlled substances	2	0.05%
H&S 11377 (A)	Possession of specified controlled substances	32	0.87%
H&S 11378	Possession for sale of specified controlled substances	52	1.41%
H&S 11379 (A)	Transport into state of specified controlled substances for sale	31	0.84%
H&S 11379.6 (A)	Manufacture of specified controlled substances	31	0.84%

Code Section	**Crime**	**Number & %**	
H&S 11380	Adult using minor or furnishing minor with controlled substances	2	0.05%
H&S 11383 (C)	Intent to manufacture meth	2	0.05%
H&S 11383 (C) (1)	Intent to manufacture meth -- possession of specified products	1	0.03%
Ins. 1871.1	Filing false insurance claim (now PC 550)	3	0.08%
Ins. 1871.4 (B)	Filing false insurance claim (now PC 550)	1	0.03%
PC 32	Accessory to a crime	1	0.03%
PC 118	Perjury	2	0.05%
PC 136.1 (C)	Intimidating a witness	3	0.08%
PC 148 (C)	Resisting or obstructing and taking a weapon form a peace officer	1	0.03%
PC 182.1	Conspiracy to commit a crime	2	0.05%
PC 187	Murder, first degree	442	11.94%
PC 187 2nd	Murder, second degree	395	10.67%
PC 187 (664)	Attempted murder, first degree	16	0.43%
PC 191.5	Vehicular manslaughter while intoxicated	13	0.35%
PC 192 (A)	Voluntary manslaughter	65	1.76%
PC 192 (B)	Involuntary manslaughter	6	0.16%
PC 192 (C) (1)	Vehicular manslaughter with gross negligence	3	0.08%
PC 192 (C) (3)	Vehicular manslaughter without gross negligence	3	0.08%
PC 192.1	Vehicular manslaughter, gross negligence	2	0.05%
PC 203	Mayhem	3	0.08%
PC 205	Aggravated mayhem	2	0.05%

PC 206	Torture	1	0.03%
PC 207	Kidnap	3	0.08%
PC 207 (A)	Kidnap by force	14	0.38%
PC 207 (B)	Kidnap child under 14, cross state lines	1	0.03%
PC 207 (D)	Kidnap, bring into state	1	0.03%
PC 208 (D)	Kidnap with intent to commit rape	1	0.03%
PC 209	Kidnap for ransom, reward, extortion, or robbery	7	0.19%
PC 209 (A)	Kidnap for ransom	17	0.46%
PC 209 (B)	Kidnap for robbery	11	0.30%
PC 209.5	Kidnap during carjacking	1	0.03%
PC 211	Robbery	27	0.73%
PC 211A	Robbery (repealed in 1986)	1	0.03%
PC 212.5	Robbery, first degree	2	0.05%
PC 212.5 (A)	Robbery of a person operating public transportation	9	0.24%
PC 212.5 (B)	Robbery of a person using an ATM	62	1.68%
PC 212.5 (C)	Robbery, second degree	26	0.70%
PC 215	Carjacking	1	0.03%
PC 217	Assault with intent to commit murder (now PC 664)	1	0.03%
PC 220	Assault with intent to commit felony	5	0.14%
Code Section	**Crime**	**Number & %**	
PC 236	False imprisonment	6	0.16%
PC 242.4	Battery	1	0.03%
PC 243.4 (A)	Sexual battery	9	0.24%
PC 243 (D)	Battery causing serious bodily injury	3	0.08%
PC 245 (A)	Assault with deadly weapon or force likely to produce great bodily harm	3	0.08%
PC 245 (A) (1)	Assault with a deadly weapon	93	2.51%
PC 245 (A) (2)	Assault with a deadly weapon, firearm	37	1.00%
PC 245 (B)	Assault with a deadly weapon, semiautomatic firearm	1	0.03%
PC 245 (C)	Assault with a deadly weapon upon a peace officer	6	0.16%
PC 245 (D) (1)	Assault with a deadly weapon against a peace officer, firearm	2	0.05%
PC 245 (D) (2)	Assault with a deadly weapon against a peace officer, semiautomatic firearm	2	0.05%
PC 245.2	Assault with a deadly weapon on an operator or passenger of transportation	1	0.03%
PC 245.5 (B)	Assault with a deadly weapon against a	1	0.03%

	school employee		
PC 246	Shooting at an inhabited structure	1	0.03%
PC 246.3	Discharge a firearm in a negligent manner	6	0.16%
PC 261 (1)	Rape, incapable victim	2	0.05%
PC 261 (2)	Rape by force	57	1.54%
PC 261 (3)	Rape, incapacitated victim	3	0.08%
PC 261 (4)	Rape, unconscious victim	4	0.11%
PC 261.5	Unlawful intercourse with a minor under 18	2	0.05%
PC 261.5 (C)	Unlawful intercourse with a minor more than 3 years younger than perpetrator	1	0.03%
PC 262 (A)	Rape of spouse	1	0.03%
PC 266 (I)	Pandering	2	0.05%
PC 264.1	Rape or penetration with a foreign object	1	0.03%
PC 266 (J)	Procurement of child under 16 for lewd or lascivious acts	1	0.03%
PC 273A (1)	Willful harm to a child	4	0.11%
PC 273.5	Willful infliction of corporal injury to a co-inhabitant	28	0.76%
PC 273.55	Willful infliction of corporal injury with priors	2	0.05%
PC 278	Unlawful detention or concealment of a minor	1	0.03%
PC 278.5	Deprivation of child visitation or custody	2	0.05%
PC 286 (C)	Sodomy, child under 14	12	0.33%
PC 286 (G)	Sodomy, victim incapable	1	0.03%
PC 288	Lewd and lascivious acts with child under 14	2	0.05%
PC 288 (A)	Lewd and lascivious acts with child under 14	509	13.75%
PC 288 (B)	Lewd and lascivious acts by force	65	1.76%
PC 288 (B) (1)	Lewd and lascivious acts by force or intimidation	9	0.24%
PC 288 (B) (2)	Lewd and lascivious acts by a caretaker upon a dependent adult	1	0.03%
Code Section	**Crime**	**Number & %**	
PC 288 (C)	Lewd and lascivious acts, victim 14-15, perpetrator 10 or more years older	7	0.19%
PC 288 (C) (1)	Lewd and lascivious acts, victim 14-15, perpetrator 10 or more years older	7	0.19%
PC 288A	Oral copulation	1	0.03%
PC 288A (B) (1)	Oral copulation of minor under 18	1	0.03%
PC 288A (B) (2)	Oral copulation, victim is under 16, perpetrator is 21 or older	2	0.05%
PC 288A (C)	Oral copulation by force of child, under 14 and more than 10 years younger than	29	0.78%

	perpetrator		
PC 288A (D)	Aiding and abetting oral copulation	2	0.05%
PC 288A (G)	Oral copulation, victim incapable	2	0.05%
PC 288.5	Continuous sexual abuse of a child	120	3.24%
PC 289 (A)	Penetration with a foreign object	10	0.27%
PC 289 (B)	Penetration with a foreign object, victim incapable	1	0.03%
PC 289 (J)	Penetration with a foreign object, victim under 14, perpetrator is 10 years or more older	1	0.03%
PC 290 (G) (2)	Failure to register as a sex offender	18	0.49%
PC 311.2 (B)	Import obscene material depicting minor under 18	1	0.03%
PC 311.4 (C)	Employ minor to perform prohibited acts	4	0.11%
PC 314.1	Indecent exposure	8	0.22%
PC 368 (A)	Elder abuse, causing physical or mental suffering	2	0.05%
PC 368 (C)	Elder abuse, theft or embezzlement	2	0.05%
PC 417.8	Exhibit firearm to resist arrest	1	0.03%
PC 422	Terrorist threats	7	0.19%
PC 424	Embezzlement by a public officer	3	0.08%
PC 451 (A)	Great bodily injury	1	0.03%
PC 451 (B)	Arson, inhabited structure	11	0.30%
PC 451 (C)	Arson, forest land	6	0.16%
PC 451 (D)	Arson, property	2	0.05%
PC 455	Attempted arson	1	0.03%
PC 459	Burglary, first degree	101	2.73%
PC 459 2nd	Burglary, second degree	100	2.70%
PC 470	Forgery	13	0.35%
PC 470 (A)	Forgery, any document	1	0.03%
PC 470 (B)	Forgery of a bill or note	2	0.05%
PC 475	Possession of forged documents	1	0.03%
PC 475A	Possession of a check, money order, etc., with intent to defraud	5	0.14%
PC 476A	Insufficient funds	7	0.19%
PC 484	Theft	1	0.03%
PC 484 (E) (3)	Theft of access card	1	0.03%
PC 484 (F)	Forgery of access card or of access card account information	2	0.05%
PC 487 (A)	Grand theft, animal carcass	28	0.75%
PC 487 (H) (A)	Grand theft, vehicle	1	0.03%
PC 487.1	Grand theft	27	0.73%
Code Section	**Crime**	**Number & %**	

PC 487.2	Grand theft, marine life	5	0.14%
PC 496	Receiving stolen property	2	0.05%
PC 496 (A)	Receiving stolen property, junk dealers	11	0.30%
PC 496.1	Receiving stolen property, knowledge or concealment	4	0.11%
PC 503	Embezzlement	1	0.03%
PC 524	Attempted extortion	1	0.03%
PC 529.1	False impersonation	1	0.03%
PC 550	False or fraudulent claim (See Ins. Code)	2	0.05%
PC 550 (C) (1)	False or fraudulent claim (See Ins. Code)	1	0.03%
PC 550 (C) (3)	False or fraudulent claim (See Ins. Code)	1	0.03%
PC 597	Cruelty to animals	1	0.03%
PC 646.9 (B)	Stalking with a temporary restraining order in place	3	0.08%
PC 647.6	Annoying, molesting person under 18	12	0.33%
PC 653 (F) (A)	Soliciting to commit a specified crime	1	0.03%
PC 653 (F) (B)	Soliciting to commit murder	1	0.03%
PC 666	Petty theft with prior	150	4.05%
PC 666.5	Felony grand theft or motor vehicle theft with prior	1	0.03%
PC 1320 (B)	Failure to appear when released in own recognizance	2	0.05%
PC 4500	Assault likely to produce great bodily harm	3	0.08%
PC 4502 (A)	Possession of a weapon while in prison	1	0.03%
PC 4573.6	Unauthorized possession of a controlled substance while in prison	5	0.14%
PC 4573.8	Unauthorized possession of drugs or alcohol in prison	1	0.03%
PC 12020 (A)	Manufacture, sale, import, etc., of specified weapons	8	0.22%
PC 12021 (A) (1)	Possession of a firearm by person addicted to narcotic substances convicted of specified crimes involving violent use of firearm	36	0.98%
PC 12021.1 (A)	Possession of a firearm by person addicted to narcotic substances convicted of specified violent crimes	2	0.05%
PC 12303.2	Possession of destructive devise near specified places	1	0.03%
PC 12303.3	Explosion of a destructive devise	2	0.05%
VC 2800.2	Driving with disregard for safety while fleeing from police officer	8	0.22%

VC 10803 (A)	Possess, buy, sell or trade motor vehicle or parts with altered identification numbers	1	0.03%
VC 10851 (A)	Auto theft	20	0.54%
VC 23152	Driving under the influence	2	0.05%
VC 23152 (A)	Driving under the Influence, any substance	55	1.49%

Code Section	**Crime**	**Number & %**	
VC 23152 (B)	Driving under the influence, 0.08% or more blood alcohol level	22	0.60%
VC 23153 (A)	Driving under the influence, causing bodily injury	17	0.45%
VC 23153 (B)	Driving under the influence, 0.08% or more blood alcohol level, causing bodily injury	15	0.42%
W&I 10980	Making false statements to obtain aid	1	0.03%
W&I 10980 (C) (2)	Unlawful acquisition of food stamps	1	0.03%
Code unknown	Crime not indicated	26	0.70%
	TOTAL	**3,702**	

TABLE 8: COMMITMENT CRIMES -- FEMALES

Code Section	Crime	Number	%
H&S 11350 (A)	Possession of a controlled substance	9	5.15%
H&S 11351	Possession or purchase of a controlled substance	6	3.43%
H&S 11351.5	Possession of cocaine base for sale	2	1.15%
H&S 11352 (A)	Transport controlled substance into state for sale	9	5.15%
H&S 11359	Possession of marijuana for sale	1	.58%
H&S 11366.5 (A)	Making space available for the manufacture, storage, or sale of controlled substance	1	.58%
H&S 11377 (A)	Possession of specified controlled substances	2	1.15%
H&S 11378	Possession of specified controlled substances for sale	6	3.43%
H&S 11379 (A)	Transport of specified controlled substances into state for sale	2	1.15%
H&S 11379.6 (A)	Manufacture of specified controlled substances	1	.58%
PC 182.1	Conspiracy to commit a crime	1	.58%
PC 182.4	Conspiracy to defraud a person of property or money	1	.58%
PC 187	Murder, first degree	34	19.43%
PC 187/664	Attempted murder, first degree	3	1.72%
PC 187 2nd	Murder, second degree	29	16.58%
PC 191.5	Vehicular manslaughter while intoxicated	2	1.15%
PC 192 (A)	Voluntary manslaughter	11	6.29%
PC 207 (A)	Kidnap	1	.58%
PC 212.5 (B)	Robbery, ATM	1	.58%
PC 243 (C)	Battery against a peace officer	1	.58%
PC 245 (A) (1)	Assault with a deadly weapon	2	1.15%
PC 245 (A) (2)	Assault with a deadly weapon, firearm	1	.58%
PC 273 (A) (1)	Willful harm to a child	1	.58%
PC 273.5	Willful infliction of corporal injury to a co-inhabitant	1	.58%
PC 288 (A)	Lewd and lascivious behavior with a child under 14	1	.58%
PC 368 (C)	Elder abuse, embezzlement or theft	1	.58%
PC 422	Terrorist threats	1	.58%
PC 424	Embezzlement by a public officer	1	.58%
PC 451 (A)	Arson, great bodily harm	1	.58%

PC 451 (C)	Arson, forest land	1	.58%
PC 455	Attempted arson	1	.58%
PC 459	Burglary, first degree	1	.58%
PC 459 2nd	Burglary, second degree	6	3.43%
PC 470	Forgery	1	.58%
PC 484 (E) (3)	Theft of an access card	1	.58%
PC 487 (A)	Grand theft, animal	2	1.15%
PC 487 (B) (3)	Grand theft, avocado, citrus fruit	2	1.15%
PC 487.1	Grand theft	6	3.43%
PC 496 (A)	Receiving stolen property	1	.58%
Code Section	**Crime**	**Number**	**%**
PC 508	Embezzlement of an employer	1	.58%
PC 597	Cruelty to animals	1	.58%
PC 666	Petty theft with prior	9	5.15%
PC 4530B	Escape, or attempted, without force or violence	1	.58%
PC 4573.6	Unauthorized possession of controlled substances in prison	1	.58%
PC 4573.8	Unauthorized possession of drugs or alcohol in prison	1	.58%
VC 10851	Theft and unlawful driving or taking of a vehicle	1	.58%
VC 23152 (B)	Driving under the influence, 0.08% or higher blood alcohol	1	.58%
VC 23153 (B)	Driving under the influence, 0.08% or higher blood alcohol, bodily injury	1	.58%
W&I 10980 (C) (2)	Unlawful acquisition of food stamps	1	.58%
Code unknown	Crime not indicated	2	1.15%
	TOTAL	175	

Commitment Crime Code Abbreviations and Initials:

Business	Business Code
Civil	Civil Code
Corp.	Corporations Code
H&S	Health and Safety Code
Ins.	Insurance Code
PC	Penal Code
VC	Vehicle Code
W&I	Welfare and Institutions Code

Appendix I

KEY TO PRISON ABBREVIATIONS

ASP	Avenal State Prison
CAL	Calipatria State Prison
CCC	California Correctional Center
CCI	California Correctional Institution
CCWF	Central California Women's Facility
CEN	Centinela State Prison
CIM	California Institution for Men
CIW	California Institution for Women
CMC	California Men's Colony
CMF	California Medical Facility
COR	California State Prison, Corcoran
CRC	California Rehabilitation Center
CTF	California Training Facility
CVSP	Chuckawalla Valley State Prison
DVI	Deuel Vocational Institution
FOL	Folsom State Prison
HDSP	High Desert State Prison
ISP	Ironwood State Prison
LAC	California State Prison, Los Angeles County
MCSP	Mule Creek State Prison
NCWF	Northern California Women's Facility
NKSP	North Kern State Prison
PBSP	Pelican Bay State Prison
PVSP	Pleasant Valley State Prison
RJD	Richard J. Donovan Correctional Facility at Rock Mountain
SAC	California State Prison, Sacramento
SATF	Substance Abuse Treatment Facility
SCC	Sierra Conservation Center
SOL	California State Prison, Solano
SQ	California State Prison, San Quentin
SVSP	Salinas Valley State Prison
VSPW	Valley State Prison for Women
WSP	Wasco State Prison - Reception Center
S. Rita	Leased beds at Santa Rita County Jail, Alameda County
Other	Includes facilities such as Work Furlough, Community Correctional Facilities, etc.

Exhibit B

Aging Prisoners: A Call for Reform

Senate Subcommittee on Aging and Long Term Care
Senate Select Committee on the California Correctional System
Senate Public Safety Committee

Tuesday, February 25, 2003
10:00 a.m.-1:00 p.m.
State Capitol Building, Room 4203

AGENDA

I. *Welcome*

- Senator John Vasconcellos, Chair, Senate Subcommittee on Aging and Long Term Care
- Senator Gloria Romero, Chair, Senate Select Committee on the California Correctional System
- Senator Bruce McPherson, Chair, Senate Public Safety Committee

II. *California's Aging Prisoners: Demographics, Costs, and Recommendations*

- Stan Neal, Senior Fiscal and Policy Analyst, Legislative Analyst's Office, Criminal Justice Section

III. *Addressing Reform: Other States as Models and Prospects for California*

- Jonathan Turley, J.D., J.B. and Maurice Shapiro Professor of Public Interest Law, George Washington University Law School

IV. *California Department of Corrections: Responses and Recommendations*

- Robert Presley, Secretary, Youth and Adult Correctional Agency
- Michael Pickett, Deputy Director, California Department of Corrections, Health Care Services

V. *Personal Perspectives on Aging in California's Prisons*

- Gloria Killian, former inmate, California Institution for Women, Chino (served 18 years), and Central California Women's Facility, Chowchilla

- Laura Kavrik, on behalf of her father, aged 74, an inmate at California Men's Facility, Vacaville

VI. *Public Comment*

http://www.senate.ca.gov/ftp/SEN/COMMITTEE/SUB/HHS%5FAGE/%5Fhome/AGING%5FPRISONERS%5FTRANSCRIPT.DOC

SENATE SUBCOMMITTEE on AGING and LONG TERM CARE
SENATE SELECT COMMITTEE on the CALIFORNIA CORRECTIONAL SYSTEM
SENATE PUBLIC SAFETY COMMITTEE

California's Aging Prisoner: Demographics, Costs, and Recommendations

Senator John Vasconcellos, Chair, Senate Subcommittee on Aging and Long Term Care
Senator Gloria Romero, Chair, Senate Select Committee on the California Correctional System
Senator Bruce McPherson, Chair, Senate Public Safety Committee

SENATOR BRUCE MCPHERSON, CHAIR: I call to order the meeting of the Senate Subcommittee on Aging and Long Term Care, the Senate Select Committee on the California Correctional System, and the Senate Public Safety Committee, which I chair. Senator Vasconcellos will be here shortly.

This is a very, very pressing and interesting topic that we have, one not only to give us a clearer idea of what we might be able to do with the aging prisoners who are in our prison system, as well as, if it can help us in this very dire circumstance that we're having with the state budget.

We are very fortunate today to have some distinguished people who are going to testify. In speaking for Senators Vasconcellos and Romero, I just want to say that this is an issue we take very seriously. I'd like to just ask Senator Romero if she might have a few opening remarks that she might want to make.

SENATOR GLORIA ROMERO, CHAIR: Thank you very much. And I welcome everybody to today's hearing. I want to thank everybody who is going to testify before us in advance, to say, thank you very much.

This is a great cooperation here. We essentially have three different committees in the state Senate taking a look at the issue of geriatric prisoners and Corrections quite seriously. This brings together the Senate Subcommittee on Aging and Long Term Care, which is chaired by, of course, Senator Vasconcellos. It brings together the Senate Public Safety Committee with Senator McPherson. And it brings together my Senate Select Committee on the California Correctional System. The three working together intend to focus specifically on looking at aging and the graying of the prison population in California.

Let me just at the start say that, looking at geriatric prisoners and the graying of our prison system is not unique to California. In fact, we're going to hear testimony indicating that this is a national issue and other states are facing this issue. But I believe, and we will hear testimony today, that will indicate that California is ahead of the curve. It is a more sharp concern for us in California.

Our prison population is getting older. And of course, as they age, we, in California, do pay more and more to incarcerate these aged prisoners.

There are estimates that housing an aged prisoner can cost up to three times higher than that of a younger inmate. And in California right now, that means that approximately $80,000 per year to incarcerate a prisoner over the age of 55.

Some might ask, well, there aren't that many senior citizens, older prisoners, in our system right now. In fact, it's estimated to be about 4 percent of our total population with an inmate count of about 6,400 inmates. However, this number is growing and this number will continue to grow. This number is not going to go away. The problem, the issue, the reality, and the cost are going to continue to exacerbate, because the population demographic shifts, as well as taking a look at changes in policy that have been enacted by the voters in this state and by this Legislature. We have seen the inclusion of "three-strikes" and the reality that as we implement and incarcerate around "three-strikes", that we are now looking at, for a longer period of time, essentially seeing our inmates age in our prison system. More and more it's been argued that our prison system has become a nursing home system with respect to public safety.

We've also seen the increase of enhancements and sentencing. So all of these policy issues also affect us as we take a look at the irreversibility of the aging process.

This does raise issues of concern. There are alternatives for us to take a look at. I do want to get specific answers from the Department of Corrections. Let me say at the start, that I am very disappointed in Corrections for not having, I believe, adequately or sufficiently addressed this issue. This is not a new issue. While it hasn't yet reached its crest, we have known for some time that this is coming. Reports have been issued. I would like to, at least on my end, get some answers today from Corrections staff as to why we have not been more proactive in addressing this situation, and what we can do now in order to confront this issue head on.

So I want to thank everybody for being here today. And Senator Vasconcellos had to take care of some business this morning but he will be back shortly. Thank you.

SENATOR MCPHERSON: Okay. I'd like to welcome Senator Betty Karnette also. And I'd like to begin the hearing by hearing from Stan Neal, the Senior Fiscal and Policy Analyst for the Legislative Analyst's Office, Criminal Justice Section. The LAO gave some interesting points of view in their report recently. And so, he would like to update us and clarify, if that's the way to put it, some of the issues that were brought up there. Mr. Neal, please take a seat.

MR. STAN NEAL: Thank you, Senators. I'm Stan Neal from Legislative Analysts. And I want to first review some of the demographics of the 6,400 inmates that Senator Romero mentioned.

Fifty-four percent of those folks are between 55 and 59 years of age. Twenty-five percent, between 60 and 64; 20 percent are 65 years and older. Not very many women. Only 300 females. Of that group of 6,400, 35 percent have been sentenced for non-serious, non-violent crimes.

I want to switch to that group, the non-serious, non-violent, because those are the folks we focused on.

Of the non-serious, non-violent offenders 55 years and older, some 50 percent of them have been incarcerated for drug related offenses; another 9 percent for driving under the influence; and perhaps 18 percent for petty theft and burglary. The average time served by this group, 55 and older, non-serious, non-violent, is 5 to 23 months for the offenders convicted of controlled substances. This is the time they have left to serve in the institution -- 5 to 23 months for a controlled substance; 12.7 months for the offense convicted of manslaughter; 11.6 months on average left for grand theft offenses; another 7 months for the driving under the influence. The point is, these people are not going to be in prison a very long time. It's something to keep in mind as we go on here.

Prisons nationwide are having to deal with the fact that they're going to have to manage a growing number of elderly prisoners, if you want to call 55 elderly. How many is an argument of healthy dispute.

The CDC seems to come to the conclusion that 20 years from now we'll be at around 7 percent of the prison population 55 and older. That is very much at odds with some other commentators who think that we'll be up to 20 percent nationwide in just 10 years. The Census Bureau is way out in the end, and they feel that by 2025, a third of the prison population will be 50 percent and older. So we go from 7 on the low end, to a third.

The analyst came in somewhere in between. We think that a reasonable number is somewhere in the range of 16 percent of the prison population will be elderly in the year 2025. That's somewhere, 30-, 40,000 prisoners. That is a lot to handle.

No matter what the growth trajectory is, I think everyone will agree that as percentage grows, the costs grow. How much? We took a look at that.

The department is unable to tell us how much it costs to house elderly inmates at this point. They just don't keep track of that sort of thing by age.

So we looked at the data. We looked at other correctional systems. Fairly consistently we found that the answer was two to three times the cost of a younger inmate. In New York for instance, they reported housing costs of $50- to $70,000 for elderly inmates. That was about twice their normal costs. Texas reports a cost of three times what they pay for younger inmates. And at the National Center of Institution and Alternatives reports a $69,000 cost, or three times the national average of $22,000. So if the national average is $22-, they think it's going to be at least three times, probably more.

Why are inmates so expensive to house?

Well, aging inmates make special demands on prison operations. Whether you're talking about housing, programming, food service, or healthcare, they have special needs. However, healthcare is by far in the way the greatest cost driver. Aging inmates have the same kinds of special needs that the aging population does in the community.

For instance, as we get older we're going to need eye glasses. Some of us are going to need hearing aids, walkers, canes, things that add to our daily expenses. These add to the prison's healthcare expenses. We're going to have more frequent healthcare episodes as we get older. Some of us are going to need special accommodations; bath rails, shower rails, special commodes, that sort of thing. And some subset of us, near the end, are going to need constant supervision. Inmates are all the same; have all the same needs.

On the other hand, inmates have unique needs. The demographics and the former lifestyle of inmates leave them susceptible to some unique problems: Hepatitis C -- over representation of folks with Hepatitis C in our system. HIV -- this is from the lifestyles that they've known.

In addition, when you talk about keeping inmates healthy, you're talking about combining healthcare and custodial considerations. Guarding and taking care of people is an added cost. This shows up most immediately, most strikingly, when you talk about transportation costs, removing a prisoner out of the institution to some kind of healthcare contractor in the community; very expensive.

Once again, the department does not have exact costs, or even inexact costs, for transportation, but anecdotally, at least in the press, we were talking about possibly $200 a trip at an institution where they make 350 trips a year. I think it's a year. But $200 a trip for guards and gas, as they put it. So it's very expensive.

In addition to that, inmates are unique in that there's no sharing of costs. The rest of us are in private insurance where we pool our risks. Or, we can maintain eligibility for federal programs, like Medicaid, SSI; inmates can't. The entire cost of their health care is a state problem, a state burden. That makes them unique.

But what exacerbates the problem is the fact that prisons aren't really geared up to take care of elderly inmates. They just aren't. Prisons work on a sick-call system. Sick-call system works if you have the flu, you sprained your wrist, broke your leg, but it really isn't geared up to keep on top of chronic problems. Problems that if they aren't taken care of early, can get to be very expensive.

Once again, I think of Hepatitis C because there are ways to deal with Hepatitis C at this point. But if you don't, at the end we're talking about a liver transplant. That's hugely expensive. So chronic problems are a big consideration.

The institutions are also limited in their experience to staff the doctors, the nurses, the correctional officers. They're not trained in age related illnesses. They don't recognize them early enough too often. This is true nationwide. It's true in California.

We also don't have institutions that are dedicated to take care of the elderly. Now we have had in the past. I was reading in the newspaper that in 1954, from '54 to '71 in San Luis Obispo we had a, in the men's colony, a dedicated senior facility. That's gone.

Currently, we have the California Institution for Men, CIM, down in Chino, which originally had a unit that was dedicated to the elderly. That has transformed over the years. Now there are only 10 percent elderly there, and it's really for the mobility impaired at this point.

So we have no institution that's dedicated to the needs of these people and they do have special needs. What we do have are some institutions who, on an ad hoc basis, do things to accommodate prisoners, elderly prisoners. For instance, if they're smart, they house them on the first floor. They bunk them in a lower bunk if there is a double bunk. But that is only catch is as catch can, and we find lots of anecdotal evidence that prisoners are pretty much left out there to fend for themselves once they get old.

So, these are among the problems that our institutions are facing in trying to deal with the elderly. And from our point of view at the Analyst's Office, possibly the biggest problem, one of the biggest problems is, that there is no classification system for elderly.

If you don't have a classification system, you can't track costs. We're very interested in the costs of health care for this group. You can't identify spikes in costs. And you can't take advantages of opportunities to combine people in institutions where you would have avoid these transportation costs, to consolidate, to take advantage of economies of scale. You just don't know where these costs are coming from. You're not tracking them.

So, those are some of the problems that we noticed.

Now, it's clear that elderly are high cost. The question was, are they also high-risk? And we took a close look at that. And the short answer is, many inmates 55 and older are not high-risk. Criminologists have long known that the propensity to commit crime declines noticeably after age 25. That's borne out by the arrest statistics nationwide which peak at 25, decline sharply between 25 and 40, fall to less than 5 percent for persons 50 and older.

The lesson here for us was, if public safety is the goal, imprisoning a 55 year-old has much less of a crime reduction effect than imprisoning a 25 year-old. Perhaps more important when we looked at this was, what was the likelihood that an offender released on parole would commit another crime? What was the public safety implication? And though there are notable exceptions, national studies indicate that older offenders are much less likely to commit crimes.

One study that we looked at followed a cohort of parolees from 1991 and concluded that 45 percent of the parolees aged 18 to 45 were recommitted. In contrast to that, fewer than 3 percent of the inmates 55 and older returned to prison. So statistically, the risk that inmates post, elderly inmates post to public safety, is much lower than their younger counterparts.

And last year, the Analyst's Office discussed releasing non-violent, non-serious elderly inmates as one of our options for addressing the state's fiscal problems. This year, after revisiting the literature and corrections operations in other states, and recognizing just how expensive some 55 and older inmates are to house relative to their public safety risk, we are recommending trailer bill language that would require discharge to parole for certain non-violent, non-serious offenders 55 years and older. We believe this policy change would represent a number of important opportunities for California at this time. Releasing a select subset of the 6,400 that we talked about earlier, perhaps 250 to 300, could save the state's General Fund up to $9 million in the budget year and even more in the out years. Early release would certainly have a positive effect on our over crowding problem. Early release might reduce, hopefully would reduce, the need to build and modify our facilities to accommodate this inmate population. Those capital costs would be very steep in the out years. And last but not least, definitely not least, to the extent that early release reduces the likelihood of expensive class action suits, we stand to gain quite a lot from reducing our exposure.

So, that's where the Analyst is going to come down in this budget year, and we think we have a lot of opportunities to take advantage of.

Thank you.

SENATOR MCPHERSON: On the cost of this -- of course, public safety, per se, as you've mentioned, is the most important aspect of all of this, to assure that for the people of California. But in hearing what you had to say about the reduction in cost of the prison system, would a released prisoner, a aged prisoner, pick up those costs elsewhere in the health care -- I mean, is it just a, you're out of prison. You don't have to worry about any costs at all? Or do you see the costs being borne by the health care

institutions of California, or part of that? Is that taken into account in some of the figures that you're talking about?

MR. NEAL: Well, Senator, we haven't run figures on exactly what the cost would be after these prisoners were released. We do know that you would bear, possibly, increased costs to monitor them on parole, because we think that setting up the correct parole situation for these prisoners is extremely important to keep them from revoking back into the system. We know that some of them will qualify for federal services, which are shared costs. We haven't run numbers on exactly who and how much, but that could happen in the future.

SENATOR MCPHERSON: So the 3- or 400, I believe you said it would save $9 million?

MR. NEAL: Up to, depending on when you implemented the program.

SENATOR MCPHERSON: Okay. So that could be a net -- it could be less than that to the state of California?

MR. NEAL: That cost has subtracted out parolee supervision. But if there are any other costs, it would be less.

SENATOR JOHN VASCONCELLOS, CHAIR: Senator Karnette.

SENATOR BETTY KARNETTE: You commented, sir, that 25 was the peak of incarceration.

MR. NEAL: Arrests.

SENATOR KARNETTE: Is that true also for women, or did you look at that?

MR. NEAL: That's a total, and I couldn't split it out for women at this point. I could find out for you though.

SENATOR KARNETTE: Well, is it costlier to house women? I visited some prisons, and the older women, I mean, is it costlier for -- is there a difference between males and females? Did you look at that issue?

MR. NEAL: At that age?

SENATOR KARNETTE: Yes. At the elderly age.

MR. NEAL: I know that they're both costly, because they both take a lot more prison resources. And if they have a very important health care episode, it's going to be expensive. So, on average, I don't think we have good data for that.

SENATOR KARNETTE: And to follow along with Senator McPherson's comment that, if they leave the prison, they will still need health care. But some of it would be borne, you say, hopefully by the federal government.

MR. NEAL: We would hope.

SENATOR KARNETTE: And some by the counties, probably. If they have some place to go, and the probation officers have a place for them to go, they're less likely to cost more, I would think. You know, I mean, if you just put them out in the street they're going to -- so you didn't really investigate the parole situation?

MR. NEAL: No, we didn't. We haven't taken a look at the after care. But certainly, if they're in better health situations, it's going to be less. If they have a very acute situations, that's going to be something that has to be looked at.

SENATOR KARNETTE: If they're extremely acute, there may be no place for them. Where would they go? If we release somebody who is bedridden, where do they go?

MR. NEAL: I think we would have to find places for them in the county.

SENATOR KARNETTE: Okay.

MR. NEAL: I don't think we have an answer to that just yet, but I think it's possible to find an answer.

SENATOR VASCONCELLOS: Senator McPherson.

SENATOR MCPHERSON: I have one more question and it might be Professor Turley who might be able to answer this more clearly. You might be able to. But, the classification system nationwide, how is that developed? Is it how long ago they committed the crime; how serious it was and so forth; and the age in which they committed that crime? To get this classification system in general?

MR. NEAL: Well Senator, I don't want to imply that there is a classification system nationwide. Most states don't have a classification system. I think you have to remember that most states are looking at a

fairly small elderly population relatively speaking; 4 percent here, less other places. What they have is what the department will probably say we have, a sort of not informal classification system. When a prisoner comes for health care, you see what age he is; you sort of notice him. If he's really sick, you take that into account. And you kind of know you have some elderly that you're taking care of. And a lot of states do it just that way. I don't believe that most states have a classification system at this point.

SENATOR VASCONCELLOS: Senator Romero, any questions at this time?

SENATOR ROMERO: Yes. Let me ask, do you referred to the concern over the possibility of additional or the filing of class action lawsuits against the state. What has been filed to date? Can you give me some idea as to what we're facing right now with respect to geriatric prisoners and class action suits?

MR. NEAL: I would need the help of the department on this one, but I don't know that we are facing class actions immediately related to geriatric or treatment of the elderly.

SENATOR ROMERO: So we may not have anything right now, but it's something certainly as we see the graying of the population we might anticipate.

MR. NEAL: Absolutely. Absolutely. People will be able to make the case that the treatment of prisoners is not suitable to accommodate.

SENATOR VASCONCELLOS: Okay. Any other questions, comments? Thank you, Mr. Neal.

This morning I was late. I promised Senator Bowen I'd meet with her Manhattan Beach contingency for a half-an-hour. I did that, so I'm late here. My staff has given me some comments to make, but I'm not going to make them, because the witness, I think, can speak much more directly about the realities that are found out scientifically than I can in terms of the conclusions I read from his papers.

I come at this with a triple background. First, I chaired Public Safety in the Senate for four years. I'm vice chair now. When I became its chair six years ago, it was called Criminal Procedure. And I asked Senator Lockyer, then the pro Tem, to change it into Public Safety, because procedures are important, but I wanted the system to be about the public being safe. That, to me, is the right framework for everything we do. The most important one.

Second, I chair the Senate Aging and Long Term Care Subcommittee, and last year passed a major bill, 953, which recognizes that we're an aging population of double numbers of people over the age of 65 before long, and a population at large tries to reform the whole system of providing services. And in that respect, I'm chair of the Aging and Long Term Care Subcommittee as a co-sponsor of this hearing, to look at what's happening with prisoners who are aging, especially downstream as we hit "three-strikes" in for life, and people who are 85 and wheelchairs costing us $60 grand a year to keep locked up somewhere, to me, sounds pretty silly for public safety. I want to hear the facts.

And third, I chaired the Budget Committee 15 years in the Assembly, so I'm keen and equipped to know how the taxpayer's money ought to be used, and it ought to be used smartly and not for somebody's myth, or somebody's propaganda, or somebody's campaign, but for public safety. And the cost involved here, or the implications could be in the billions of dollars that could be otherwise better spent if we find better ways of addressing issues in this arena of aging geriatric prisoners without in any way sacrificing public safety. So this hearing is really important. It's sort of a wakeup call for all of us.

I learned a lot last night at dinner with Professor Turley. I want to introduce him now. He comes from George Washington University. Jonathon Turley, Professor of Public Interest Law. And I gather, probably the nation's foremost expert, scientifically objective expert, in studying what's happening in the prisons of America and what's happening about geriatric prisoners in America. He's the founder of a group called, POPS, Projects for Older Prisoners, which has a stunning 1,000 percent success rate. And in my estimation from listening to him last night for an hour at dinner, and listening, not just talking, he has a statement that we ought to pay attention to, learn from, and use as a basis for our own opening up this issue and making smart, not stupid, decisions for the public safety of California.

Professor Turley, welcome. Thanks for coming out. You're on. You have about 15 minutes on the calendar if you need that much time.

PROFESSOR JONATHAN TURLEY: Thank you, Sir. As a law professor I'm trained to speak in 15 minute increments --

SENATOR VASCONCELLOS: Right. I remember that from way back when.

PROFESSOR TURLEY: Senator Vasconcellos, Senator McPherson, Senator Romero, I wish to thank you and the members of the two committees and subcommittees that you chair for the invitation to speak with you today at this important joint hearing. It's an honor to appear before the California Senate to discuss your graying population and its implications for the state.

I come here, obviously, as both an academic and as executive director of POPS, the Project for Older Prisoners.

I'll cut to the chase because I know our time is limited and we have much to talk of.

My purpose today is to give you the results of our initial findings as to the California system to put it into context of the country as a whole. This is not a comprehensive POPS report like the ones completed in states like New York and Illinois. Those take a little more time to put together. If such a report is desired, we can certainly do that if the state has a further interest.

But what is striking is the findings of our preliminary report, and we did a little more than usual for the state of California in the sense that our preliminary report is fairly detailed and we make copies available. It's roughly 70 pages of data and analysis.

What that data shows is, that California has a classic profile in terms of its problems, it's growing problems, with its older prisoner population. It's classic in the sense that it follows the same curves that we've seen in other states, but there is a considerable difference.

To put this into context, in a prison system, to take a biblical reference, there are four horses of the apocalypse essentially; four issues that can cause catastrophic problems in the system. Like the biblical reference, when they combine, if they combine, they are often very difficult to overcome. Any prison system has to avoid that combination. What is different about California is that in those four categories that we use to judge the condition of a correctional system, most states that we look at have a difficult problem in one or two. California is different. You are in what we consider to be the acute stage on all four, which means that your horsemen are combining.

Now, I want to emphasize before I get to these issues, that we felt that the data coming out of California was so surprising that I had our team of researchers check it two or three times because I just couldn't believe the figures. They are the worst we've seen in states around the country.

Now, those four categories, those horsemen, if you will, are recidivism, overcrowding, budget shortfalls, and acute demographic shifts in population. To quickly run over our findings before we get to specifics. First, California has the highest recidivism rate in the country. It is a rate that is quite disturbing and in and of itself should be viewed as a crisis. That recidivism rate ranges, depending on studies, between 60 and 70 percent. That is astonishing. It means that in this state, your citizens are being victimized at a much higher rate than other states. You are releasing high-risk prisoners, or failing to supervise them, but the results are not borne by the correctional system. The results are borne by individual citizens who are being victimized when they shouldn't be victimized. Your recidivism rate is twice that of comparative states. That is alarming.

Now, it is true that you have a larger number of parolees out there. And you also have a very high rate of revocation of parolees. Some for technical violations. But even if you take the lowest figure for recidivism, you have a serious problem in this state. And that problem relates not just to older prisoners, but to some of the solutions that we're talking about.

Second, the state is overcrowded by any estimation. It has all 33 of its major facilities are above design capacity. Once again, that is pretty remarkable. It is not uncommon for states to have facilities that are over capacity. But, I'm afraid California is something of an overachiever in this respect. Not only are 100 percent of your facilities over design capacity, about a third are twice design capacity. That is virtually an invitation for a lawsuit, and it is an invitation for the most dangerous form of prison reform. Court ordered releases. You get to that stage and your recidivism rate will go higher. It's hard to believe it will go higher, but it will.

Third, California's prison budget is rising faster than its population. This indicates that per capita inmate costs in your state are rising faster than the population itself. Part of that is due to your construction campaign which adds to those costs. But part of it is also due to the fact that your population is getting more expensive.

Then finally, and most of concern for us, is that California is looking at a major demographic shift in about a decade. To get an idea of what that means: Between 10 and 20 years, it will be as if someone comes into your prison and replaces the prisoners. You're going to have a different prison population than you have today. So your projections, your systems, your processes, that are designed to handle a steady rate of growth now, to handle this prison population, is going to be handling the wrong prison population. It's going to be different. And you're going to experience exponential growth in costs in other areas.

So, the recommendations that we have today in the findings will ultimately depend upon the willingness of California leaders to take the initiative to avoid a crisis. I mean, I'm not Hans Blic looking for violations, and I don't have any authority. I am an endomorphic meaningless law professor. All I can do is tell you, based on our view, what you're facing. And if I were you, I'd be pretty darn concerned.

The absence of meaningful reforms with older prisoners is something of a surprise for a system this size. California is the largest state system in the country. And at one time, it was the leader of correctional policy. It is filled with incredibly talented professionals, in your correctional officers, in places like the LAO. This state has more raw resource and expertise and people to solve this problem. It's just that they're not being used. You can turn the corner here because you can benefit from the work of other states.

But, I want to emphasize one thing and then I'll get to our specific findings. Time is of the essence. Time is of the essence. This state cannot drift toward this coming crisis without putting not just its correctional system, but its society at risk. As someone with professional and personal ties to this state, even though I harken from the East Coast now, I'm very concerned with what I've seen about this data. If the state does nothing, it will be living in denial. That is a habit that is hardly healthy for individuals, but is down right dangerous for a correctional system.

Let's turn to some of the figures and you'll see what I mean.

The prison population nationally is graying; that upon which we can agree. In the federal system a remarkable 43.7 percent of the population is 41 years old or older. We're going to be talking about the importance of years in that cutoff in a little bit. But what is clear in all states is that the older prisoner population is the fastest growing segment of the state's system. This shift comes with attendant costs and overcrowding and budgetary problems.

I won't go through some of the figures we have about the rate of this increase. But I just want to note that the federal system in 1988 had 33,000 prisoners; it now has the largest prison system in the country with 167,000. It just recently surpassed California by a small degree, but that's hardly a competition you want to win. California and Texas have the largest prison population with your own at 161,000 inmates. To put that in comparison, you've got 161,000 inmates today. In 1977, you had 19,600. With this rate of growth -- and I'll leave the statistics. I won't go through all of them to try to avoid people falling off their chairs in slumber -- But the point of putting this growth rate for you in terms of state and federal system, is to convey one very important fact upon which to live your life as public officials. You cannot, and you will not, build yourself out of this crisis. You simply can't do it. The federal government can't do it. And believe me, states and the feds have tried. We've had record construction in this country. But federal officials estimate that in order to just take care of their increasing population, they'd have to add a 1,000 bed facility every week. That's not going to happen. We've had states that tried to float bonds and to beat this race and they have failed.

SENATOR VASCONCELLOS: Including California.

PROFESSOR TURLEY: Including California. The result is that in California, you've got some facilities now that are at almost 240 percent of design capacity; 240 percent of design capacity. It is a virtual advertisement for a lawsuit. And it's going to come. The courts are quite clear. If you keep on stuffing prisoners into over capacity prisons, you're going to get sued. But that's not a problem. As a lawyer I can tell you, lawsuits just involve legal fees, which we are always grateful for. Your problem is that over design capacity at 240 percent, there's not any mystery as to the conclusion of that lawsuit. At the end, the court is not going to order damages against the state, the court is going to order releases. And what happens with court ordered releases is, they take the prisoners with the shortest period to serve. This is not rocket science and it's not surgery. It's taking a cleaver; finding the leading end of your prison population and cutting it off. Ironically, that tends to contain your highest risk prisoners. So if you go into court ordered releases, you're

going to actually release the highest risk prisoners you can possibly release. The cost for that will be borne by citizens who meet those prisoners in their living rooms, and meet them on dark streets.

I've already mentioned that all 33 of your prisons are overcrowded and one-third is twice the design capacity. But let me get to your increasing older prisoner population.

There's actually a typo on our report, something that academic just loves, and I'll correct it now. In year 2000, the older prisoner population passed 100,000 inmates. Today we believe that population is around 110- to 120,000.

SENATOR VASCONCELLOS: In where? In the country? In here?

PROFESSOR TURLEY: In the country.

SENATOR VASCONCELLOS: In the country.

PROFESSOR TURLEY: Yes, Sir.

SENATOR VASCONCELLOS: All the systems together, or the federal systems?

PROFESSOR TURLEY: All the systems together, Sir.

SENATOR VASCONCELLOS: Thank you.

PROFESSOR TURLEY: In the last 20 years, older prisoners have grown by 750 percent. To give you an idea using the federal system, in 1986, if you look at prisoners over the age of 50, they represented 11.3 percent of the federal system. In '89, they represented 26 percent. By 2010, at a minimum with the most conservative projections, they'll represent 33 percent.

In California, you have an estimate from the LAO, which does remarkably good work, and I commend the state for having such an office. Their estimate is that by year 2025, you're looking at an over 55 population of 50,000, roughly. We think that figure is fairly conservative, but that's what you should do if you're projecting things for the Legislature, is be conservative. We believe it's actually going to be higher. There's no reason why California is going to be below the national average. And in fact, our indications are, it should be above the national average in both numbers and costs.

But there is one very important thing that I want to add here. It is a mistake for you to base your policy on the chronological age of your prison population. If you're concern is with the ballooning hidden cost associated with older prisoners, do not, I recommend, make the mistake of looking at chronological ages. It's easier because you have data on that, you can just simply pop it up, although California has some serious problems in terms of data. Very serious. But it should be easier to pick up those chronological ages. But what happens is that if you set policy on chronological ages, your reforms will not address the problems in 10 years. The reason is, that a prisoner is on average between seven and roughly 10 years older, physiologically, than they are chronologically. Seven years is the lowest age.

SENATOR VASCONCELLOS: But that's on account of the lifestyles that they've led --

PROFESSOR TURLEY: Yes. There's a number of --

SENATOR VASCONCELLOS: Causing their bodies to deteriorate more rapidly.

PROFESSOR TURLEY: Yes, Sir. There's a number of reasons for that. One is, most prisoners come to prison with a poor dietary history, chemical abuses. But more importantly, prison is a highly stressful place. There's what's called the wolf/prey syndrome for older prisoners. And stress ages people in a much faster rate. And, you can imagine the stress for an older prisoner. The best thing is, when you speak to someone who is in their 60's and 70's today, they'll often talk about how they stay in their homes because they're afraid to go out at night because of dangers in the neighborhood. Well imagine being a geriatric at 70 in a neighborhood entirely composed of certifiably violent people, and you get an idea of the stress level for older prisoners. That's one of the reasons when geriatric units opened, they have an incredibly long waiting list as geriatric and older prisoners attempt to get into them. What we find is we go to facilities is that geriatric prisoners tend to congregate in hospitals or stay in their cells. We often have to go to cells to find these prisoners because they're concerned. Even being in a hallway during a rush hour could be a very dangerous situation for an older prisoner.

So the health costs go up. So when you look at your population -- for example, Florida just finished a very interesting report that indicated that their research shows that their prisoners are 11.7 years older than their chronological age. That's on the top end. Seven years, we believe, is too low. But we, as a policy at POPS, tend to take the most conservative figures because we don't like to be wrong. And so we tend to go

with the lowest most conservative figures so we don't overstate the case here. But in my personal view, it's probably closer to 10 years.

So that means that when you're looking at a 45 year-old prisoner, you're very likely looking at a 55 year-old physically. A 50 year-old prisoner is likely to look like anything between a 57 year-old and 60 year-old prisoner.

You have to be concerned because that's the reason you have some of these hidden ballooning costs. The per capita costs of your prisoners will increase because they will become more expensive because they're getting older. And so what your system sees is physiologically older prisoners. What you see are chronologically older. And if you just deal with chronologically older, you will not control the ballooning costs.

Right now in terms of physiologically older prisoners, if you take the most conservative figure, right now you have about 17 percent in terms of physiologically older or geriatric prisoners in your system.

Now California also has a very familiar profile in terms of its demographic population. But the difference is, that California is more extreme in how it is expressed in your population numbers. The reason is, that all states engaged in some level of sentencing reform, but your state led that process. That is, as your state was early on in "three-strikes", longer sentencing, some limitations on parole, limitations on compassionate release, practical or direct, so you've been doing it longer, which means that what's happening is that that bulge that we see between age 30 and age, roughly 45, is bigger, generally, in California than it would otherwise be. It also means that when that demographic shift, you think of this as sort of a boa constrictor and it's moving down the snake. You're about 10 years for when those prisoners are largely all in a category of chronologically or physiologically older and geriatric inmates. That's why your prison system will change, is those will be different people. Same identity. Same names. Different people. Over 46 percent of your population, prison population is now 35 years or older. That's the bulge in the snake. And that's the wall you're going to hit.

Now in terms of -- we put in the various charts and figures -- a couple of these charts did not make it with our transmittal from Washington, D.C. It's another example of East Coast, West Coast lack of communication, but you have to forgive. A couple of these tables apparently exploded during our transmittal. As an academic, I just ask you to avert your eyes. But, our projection is that by 2010, you're likely to be above the average 33 percent. All of our figures indicate that that bulge is just a bit bigger, so you should be above that figure if nothing is done.

The report then turns to what are called asymmetrical costs for maintaining an older prisoner population. This is where you hit that wall.

Nationally, states are spending between $30- and $50 billion a year, a rate that is twice that of 10 years ago. And it will likely double to $60 billion by 2010. Some of that is due to increasing wages and benefits for correctional staff. Correctional staff often cost as much as 50 percent of the operating budget of a facility. But much of it is due to the increase per capita costs.

Right now the cost of an older prisoner is roughly $70,000 a year, or $67,000 a year. It is found to be two, and very often, three times the cost of states. That has been the situation since POPS was formed. What we see is that most states are pushing towards the three times provision rather than two times because medical costs are increasing.

To give you an idea, Pennsylvania spends about $78 per day on a prisoner. For older prisoners, they spend over $200. Now, those costs are fueled by a number of issues. But first, in terms of general costs, in terms of social costs, there are three types of basic social costs. One is, older prisoners occupy cells that are in short supply and extremely expensive to construct. At $100,000 a pop, these are not cells that are easily substituted.

So the second cost is that for older prisoners serving long term sentences, they fuel your overcrowding problem which can result in early releases. And so when you enter the overcrowded status, you then get into that perverse situation I talked about. That as states like California that are moving into acute overcrowding stages -- now your population has leveled a bit. But as it increases just with the natural growth, and it will increase, you're looking at the danger of mandatory releases. Then we get into this rather perverse problem where you have a system that will be releasing younger prisoners at the height of their risk,and struggling to retain older prisoners who are statistically less dangerous. So you actually have a

system that's working the opposite of what public safety would demand. Some younger prisoners who are released are going to have a recidivism rate that will just spin your head, but they'll still be released. Because what we know about recidivism, as we're going to talk about, is that recidivism generally falls around age 30. So in acute overcrowding situations you have a state rushing to release that category.

In California, the annual cost of a prisoner is about $26,000. That's about $4- to $6,000 more than most states that's associated with your higher costs, which is not other worldly, it's basically what a lot of states are experiencing.

An older prisoner in this state is likely to top out at over $60,000 to $70,000 a year. But once again, there is a surprising paucity of data in California. States that I generally to be less scientifically and administratively developed in terms of charting costs, have a lot more information than California does. We were able to get much, much better information from a lot of other states. You simply don't have that data.

But let's take some of these figures and run them through a projection. Let's take the average cost of a prisoner in 2025 as $35,000 a year, which is the conservative cost we've been talking about with your staff. I consider that very conservative. And all the figures I'm about to give you I quite frankly think are wrong in the sense that they are too low. But let's be conservative.

Let's say by 2025 you've got a $35,000 per capita cost. And let's take the most conservative projections. Now the LAO was looking in terms of their growth, I believe at 60 years and older. Obviously, we use 55 years, and we think that is low if you look at physiological age. So the LAO figures are already on the low side because they're cutoff is higher than most states. But let's just put all that aside and take your 60 and over figure and assume that that is going to be the figure, which I think is conservative. Now, let's look at the multiplier. We know it's between 2 and 3 percent. Because you looked at 60 percent and older, it should be three times higher.

But once again, let's take a more conservative view and take a maybe 2.5 multiplier. That gives you a projected cost in that out year of $87,500 per prisoner. Once again, that is really conservative, because the figure today is believed to be $69,000 would mean that the rate of increase would have to decline dramatically. But just let's take $87,500. If we multiply to the year out in terms of the growth, you're looking at over $4 billion budget for your older and geriatrics. That is equivalent of your current correctional budget just using to maintain your older and geriatric prison population. The implications of that are pretty serious.

If you hit the wall and you have the demographic shift, the budgetary growth exponential in some categories, something is going to give. And you've got a very good correctional staff, and sometimes correctional staff look at this and are uneasy sometimes with reform, but, what should concern your correctional staff quite simply is, if you hit that wall, something is going to give. You're going to have to freeze and cost contain. You're going to have to rollback on benefits for correctional officers. You're going to have to freeze construction. When you get to that point, you sort of reach a correctional version of the China Syndrome. Things get out of control. You can't just freeze and stop because your system is overheating. So that's the reason time is of the essence. You can wait around, and this ticking bomb will go off. But at that point, there is going to be a world of hurt. And so that's the reason we're encouraging you to take steps now.

Let's finally look at that last horseman as I referred to in recidivism. And I'm just going to briefly talk about this because I'm running out of time.

I talked about earlier that your recidivism rate is one of the most astonishing things I've seen. This is a pretty dangerous state, quite frankly. I used to spend every summer here when I was a kid and I never thought it was nearly this dangerous. But it sure is dangerous. Your recidivism rate is a public safety crisis right now. It's not a projection, it's a crisis right now.

With all of the expertise California has, with all of the smart people in this state, you can throw a stick and hit 10 universities in this state. I can't imagine why this state has allowed recidivism to get this high. Recidivism is not that difficult to figure out. There's ways to reduce it. And those methods are not being used in California. But it's not an abstract academic issue. The thing that concerns me most about here is, there's real people that are being victimized because the state isn't making logical choices. It's not managing the prison population. It is dealing with sort of a warehouse approach in which prisoners are

released in a conduit system. And that's sort of having a system without any safety effects. It's like having a nuclear reactor with just a turn on and off switch. It doesn't have safety features.

And what concerns me as an academic is, usually when I do this stuff it's a fairly abstract cold record. But when I look at your recidivism rate, all I see is a whole bunch of people being victimized that don't have to be victimized.

Now clearly, that recidivism rate is probably higher because you have so many parole releases. You've got as many as 100,000 who might be released in a year or more. And a lot of those parolee revocations are for technical reasons. But if you take those off the board, you're still looking at a really high recidivism rate.

Recidivism is a tough thing to gauge because it depends on how you define it; whether it's a return within two years or three years; whether you've got a revertible recidivist or a habitual offender; all of those are terms that frankly we debate all the time. I don't like cutoffs on recidivism. I think that looking at two to three years is remarkably stupid, but we all do it. Because it doesn't matter to a citizen that they happen to be knocked over the head by someone in their third year. I mean to me, the recidivism rate you should look at is how many end up back in prison? I don't care if it's three years; if it's seven years or 10 years. Your obviously, this is someone who's ending up back in prison, and so those figures are subject to debate. But even if you take the most conservative ones, this state is pretty bad.

Let me push ahead. I gave you some of the statistics on New York and Illinois which sort of chart these things, and I'm not going to tell you about the history of the Project for Older Prisoners. We have some pictures of some of our prisoners from the Project of Older Prisoners. I use those pictures because they show me when I was about 30 pounds lighter and with not a gray hair to be seen, otherwise I'd be confused with our clients.

But this POPS project, the Project for Older Prisoners, started when I was teaching at _____ Law School and has grown to have offices around the country. We talk about, in the report, of how we were founded. But let me cut to what we do.

POPS basically does three things. We do individual case evaluations. We do state evaluations and recommendations. And we do legislative drafting. We do this pro bono. All of the POPS offices work out of law schools. Volunteer students occupy the offices with a supervising law professor and a staff of attorneys.

For individual recommendation, POPS, individual case evaluations, POPS will take a prisoner, assign a caseworker who will interview the prisoner a number of times, will look at the prisoner's criminal history, medical history, chemical dependency history, that pattern of criminality that we talk about. They will look at the prison jackets, speak to the correctional staff, look at the write ups, disciplinary accounts and hearings. They will then chart the prisoner in terms of two separate recidivism analysis. We've gotten very good a predicting recidivism in this country because of the advent of computers. We've become very good at it. And it's a resource you can use. What we do is, we take, once again, a very conservative recidivism evaluation and only recommend prisoners for release who are low risk on both tests. If the prisoner passes that test, the student goes back out into the field and determines what the view of the victims are on this issue.

We've had a victim's consultation stage since the beginning of POPS. It was the first that I had heard of and we're very proud of that. We have, in fact, turned down people on the basis of the interviews with victims even though they're statistically low risk. Sometimes in the victim's interview you find out things that a cold record does not indicate. Sometimes you find out that prisoner left something out.

The rule we give prisoners that we interview when we go into a state, we gather them together in their facility and I tell them that they have one rule. If they lie to us, they will never, ever be considered for POPS again. If there is one fact that they have misrepresented, augmented, changed, they will be taken out of the system and we will not review them.

So, sometimes in the victim's interviews we find that prisoners have left something out and that could be quite significant. If it turns out that the victims do not oppose release or do not have anymore information, the student presents the case to the POPS members. They vote on it and we often, if all of those things check out, will recommend the prisoner for parole or probation or pardon, depending on the state.

And we present all of our findings, including where the prisoner will live and what the prisoner will live on, to the appropriate board. That is the reason we have had hundreds of releases and zero recidivism.

SENATOR VASCONCELLOS: Zero.

PROFESSOR TURLEY: Zero. As far as we know, no POPS prisoner has been reincarcerated. Eventually we're going to have one. It's just a matter of statistics. But we're very proud of that recidivism rate. But it's because we really sweat the specifics.

We also do state recommendations for reform and legislative drafting. But let me finally get to -- and I've overstayed my welcome -- let me finally get to the specific reforms that we encourage for the state of California.

Attorney General Janet Reno, while she was still attorney general, who made the common sense observation that you don't want to be running a geriatric ward for people who are no longer dangerous, that seems pretty true and unassailable. However, an older prisoner population has the same range of prisoners as the general population. So just looking at age alone is a dangerous thing.

We don't want this state to say, yeah, if you're 55 years or older, you're going to be eligible for early release. In fact, we opposed and helped defeat such a law that was proposed in Washington, D.C. to release people primarily on age. We opposed that law because we believed it did not adequately take into consideration risk to the public.

You have to assume that your prison population will have three basic categories of inmates; low-risk, mid-risk, and high-risk prisoners You're task in the next two decades will be to develop a system that can isolate and evaluate where the prisoners fall in those three categories and then have a corresponding method to deal with them.

And on this, I want to emphasize that we often talk about releases. I strongly encourage you not to do this as an issue of early release. Early releases have to be a part of your solution and some of your greatest savings are not going to be in early releases. But if you just do early release, you're going to have that problem that they describe in the military, that if you only have a hammer, everything looks like a nail. So if you only have release, everything gets put into terms of can we release them, that's a dangerous thing. Because if that's your only valve, you're going to release people that you shouldn't release.

Now, the low-risk prisoners are the ones that you're going to want to identify first. Now, since you all are sort of starting from scratch, you should have some considerable savings up front. And so, you identify your low-risk prisoners using recidivism tests.

First, doing a cutoff -- we use 55. You can actually go to 50 for women. Women have a lower recidivism rate, period. And, you can go lower if you want, or you can make it 50 and have a staggered criteria, where the recidivism test is more extracting between 50 and 55. There's lots of ways to do it. You certainly don't want to end with an equal protection issue, so you have to be careful on that.

And so, you're going to have a group of prisoners that can be released. On that, the only real vehicle you currently have is your compassionate release provision. That provision from what we can make out, is underused, has increasingly been used less, and has all the normal problems of compassionate release. It's not California, and I don't mean to dump on California here. I really don't. Compassionate release in your provision reads a lot like some other states. That's not good, because most state's compassionate release programs are virtually not used and neither is the federal system. And the reason is, is that there is a lot of paperwork, a lot of delay. Often the prisoners or families don't know how to do it. They're not given very much help. But also, compassionate release programs are designed largely for people who will be dead in six months. That's the standard. Most people look to say, we want a doctor to come and say, this guy is going to be dead in six months. And if you use that practical requirement, very few doctors are going to stand there and say, talk to me in seven months at the funeral. They're not going to do that.

And so you have lots of problems in terms of medical projections when you use the compassionate release. But your compassionate release program will create a bottleneck problem. You can't use it for these purposes.

But what I encourage you to do is, when you look at compassionate release, you should look at it generally because it's not just for older prisoners, but incapacitated prisoners, HIV positive prisoners. Lots of prisoners that California has to deal with where you could tinker with it and have a better effect.

But what you need is a formal system looking at low-risk prisoners for release that also contains a post-release plan which I'm going to get to. These releases can obviously save you a lot of money. The release of only 500 inmates could save you as much as $15- to $20 million. LAO is projecting in terms of 200 and 300 inmates, a savings of
$9- to $14 million, I believe. In that in 20 years you could divert as many as 12,000 prisoners for a net savings that could be in the hundreds of millions of dollars.

But the reason I passed over that quickly is because that's a part of the report that legislators often put a little sticky on.

Every time I go into a state, particularly like California, because you can have a huge amount of savings because you're starting from zip, people look at that figure of hundreds of millions of dollars and it's like Pavlov's bell.

But, here's my caveat, and I hope you will take this seriously. Some of that money has to be put back into the post-release plan. The reason POPS has been successful is because we sweat the specifics and find where this person's going to live; what they're going to live on. We even submit pictures of where they're going to live. We make sure they've got room where they're living. We find out who owns the house. We find out how much room they'll have. Is the place accessible to an older person? It's not that expensive to do that. But it can be the difference between zero recidivism and greater recidivism. It's called a soft landing.

And a soft landing requires you to setup the older prisoner with some regiment. Older individuals actually prefer regiment that we've found in studies. They tend to gravitate towards regiments in terms of taking their pills, in terms of their movements. Regiments are good. If you setup a regiment for a geriatric prisoner, the prisoner will stick with that regiment and will not divert.

One of the biggest problems we have with older prisoners and we get them released -- we had one guy named Noah Wade, who went to prison in 1944. We got him out in like 1991. The man was like Rip Van Winkel. He didn't know how to open my door of my car because it had a flush handle on it.

Now, take a Noah Wade out into society was a problem. And the biggest problem we had with Noah was, he wouldn't leave his room at the nursing home. Older prisoners are terrified of going back to prison. And so, faced with the outside, they'll often stay like they do in a cell. They'll stay in their room and we get calls from nursing homes that say, Noah won't come out. Noah won't go into the hallway.

So, that gives you an idea of how these older prisoners respond. They don't want to go back in. They are more frightened of society than society is frightened of them. These people who have low recidivism rates, are projected risks than the students I drive to prison with.

The other thing that you have to avoid is what you had recently in California, which was an individual like Covell Russell, who was released in his 90's without any soft landing. He quickly exhausted what savings he had. He was suffering from geriatric illness, gerintological illnesses. And he described release as a form of physical and mental torture, and he tried to get help. And when it wasn't forthcoming, he committed suicide.

When I read about Russell's case, it moved me considerably because I know people like Russell across the country. And I viewed his death as entirely unnecessary. This was obviously an individual who was prepared to live and not recidivate, and it would have taken very little to keep that man alive.

For mid-risk prisoners, you're not looking at early release. Now what we consider to be mid-risk prisoners, most states would view as low-risk. But we tend to be more conservative so we call them mid-risk prisoners. And for mid-risk prisoners we recommend alternative forms of release, which would be electronic bracelet programs which can reduce your costs from over $60 a day, and some cases, $70 a day, down to less than $8. Some states have brought it down to $5. I expect yours is going to be closer to $8 or a little higher. For a lot of these prisoners, particularly ones that are barely mobile, you can put an electronic bracelet on them, improve their care, reduce their costs.

For high-risk prisoners, we recommend geriatric units but can reduce your costs by the economics of scale by collecting them and buying in bulk and dispensing in bulk medical services. You can dramatically reduce your costs and improve care. It is a win/win situation. You avoid illnesses. You reduce the cost of those illnesses.

What I encourage you to do -- and I've got to tell you this, and I don't mean to be cocky here, but, you're going to have geriatric units. I mean, right now you don't have them, but you're going to have geriatric units. Whatever the feeling, the current feelings of CDC or anyone else's, by 2025, you're going to have geriatric units because you will have no choice. The question is, do you create them now or then? Do you create them with time, or do you create them in an emergency? But you're going to get geriatric units and that's the trend across the country.

What I recommend is, that your geriatric units are spread throughout the state. One of the concerns we have with consolidation, it's better for the older prisoners. There's less stress, better care. But one concern we have is, putting them at a distance from family members. Older prisoners have a higher incidence of depression, of angst. Having access to their families reduces that. And so, it's better to have not one gigantic geriatric facility, but a series of smaller ones between 3- and 500 units preferably, that will put them in rough geographic proximity to their families.

Let me conclude -- and thank you very much for your patience -- let me conclude that I commend you for the leadership that you've shown here. Maybe this was caused by the budgetary issue. I know many of you have been citing this for years. I know that Senator Romero recently wrote a piece in the L.A. Times. I know that Senator McPherson, Vasconcellos, have been working on these issues for many years.

But what's happening is that in the budgetary crisis, you see the superstructure issues of the prison and it is forced you to look at what's below the surface, which is a far more serious problem. It is, in fact, a ticking bomb. And you can disarm it right now. You can make sure it doesn't go off, or you can wait. But waiting will come at a cost in our view, and it won't be just borne fiscally.

Thank you very much, and I'll just stop there.

SENATOR VASCONCELLOS: Okay. Bruce. Questions? Comments?

SENATOR MCPHERSON: A lot of information that we have to really take into account here. It's just the cost factor is much in the recidivism. It's down to 3 percent or so, did you say of most of those prisoners? Was it the Illinois or New York study, recidivism of the older prisoners who were taken out of the system?

PROFESSOR TURLEY: Yes. In fact, when you go to 60 and above, the recidivism rate is right on the floor, like 3 percent, which is nothing. That's going to be just a statistical reality. And, you have to assume that if you release older prisoners, or any prisoners, you're going to have some recidivism. But 3 percent is something for this state to dream of right now. But if you go from 50 to 60, it will be slightly higher. But the highest we're seeing in this areas is like 10 percent, which is pretty good for citizens.

And the other thing to keep in mind, Senator McPherson, is that in its state of chronic overcrowding, the question is not whether someone is going to be released, but who? And you can choose who. If you don't choose, then the way the system works is the wrong ones are going to be chosen.

SENATOR KARNETTE: I have a question on that.

SENATOR VASCONCELLOS: Senator Karnette.

SENATOR KARNETTE: You say that the courts would automatically release the prisoners that had the least time to serve. Well why is that so? I mean, why can't that be changed? Why can't good cases be brought to release the people who are the least at-risk. I don't understand why. I'm not an attorney.

PROFESSOR TURLEY: No, no, Senator. It's an excellent question. There's a couple of reasons. One is, political, and one is legal.

The political reason is that at a time of overcrowding, what's interesting is that you'll turn on the news and you'll find an official standing in front of a prison condemning some federal judge for releasing dangerous prisoners. What is not expressed is that that official knew probably four years before, that prisoners were going to be released and could have done releases. But the difference is that, when those prisoners are released, there's a judge's signature at the bottom of the paper and not their own. So if one of them ends up committing a new crime, you can just blame the courts, even though you created the conditions that lead to the releases. So there's a political dimension there. It's a terrible dimension, where many officials prefer to go into chronic overcrowding simply to force some judge to release them and take responsibility indirectly. The legal reason is, that if you don't have any releases by the time the court order hits, when these court orders -- a vast majority of states have been, or are under court ordered releases or overcrowding orders. Look at them in that virtually none of them really made significant early releases. So

when the deadline comes up and the federal judge is not going to wait for perpetuity -- when that deadline comes up, that judge is going to say, you've got to reduce by 10 percent. And the judge says, how many of your people are serving for less than a year? That's typical. Or less than two years? They get the numbers and they say, they go first because they are offenses that are lessor offenses. Well the irony is, that the people who are committing those lessor offenses are often young prisoners who may have a record going from juvey all the way up to early adulthood. So that's what would happen.

SENATOR KARNETTE: Well it seems like that would be a logical thing to change. I don't know how to do it, but if I were going to change something, I think I would change that. If I thought a bill would do it, I would introduce one. But I don't know how to go about doing that.

PROFESSOR TURLEY: Well it can be done as part -- you can do a couple of things. One is, you can do it as part of an overall reform package for older prisoners.

SENATOR KARNETTE: Well, low-risk actually. I mean, I just want to do it for low-risk.

PROFESSOR TURLEY: The other thing that you can do is, you can actually legislate emergency steps taken for overcrowding. I mean with 33 of your prisons beyond design capacity and one-third twice that, you could actually do legislation if you wanted to. That would be a formalized system of releases when you get beyond a certain capacity. That would become automatic.

SENATOR VASCONCELLOS: Senator Romero.

SENATOR ROMERO: Professor, I want to thank you very much for your remarks, for your paper. I very much have appreciated you coming and examining this issue for us. And we look forward to working with you as we work on -- as we scrutinize this issue this particular year.

With respect to recidivism. I absolutely agree with you 100 percent, that we do have a major recidivism problem in California. Under the auspices of the California Correctional System Select Committee a few weeks ago, we did have a hearing taking a general look at Corrections. And, of course, the issue of recidivism stood out. The timeline by which we monitor as well, two years makes no sense. I hope that we can look at the long range. As well too, I think also beginning to examine our youth population -- and we haven't even touched on the youth authority and how that feeds into CDC as well. So there is much to be done there with respect to recidivism.

I think that in terms of policy issues though, I do think that we need to take a look at why California appears to be parole happy, and how we revoke and put people back into the system based on minor technical violations. I do think that's a major issue.

I'd like to say that I very much concur with one of your conclusions that we can't build ourselves out of this problem. We cannot simply say, there is a major crime problem out there. I think more so what we're looking at is, how do we sentence and how do we manage and how do we assess those inmates who come into this situation. And I would add to that as well, to nor could we simply vote ourselves out of this problem as well. I fundamentally believe that more "three-strikes" type legislation is not going to solve the problem. And certainly for our children and our grandchildren, as well.

With respect to your distinction between the chronological age and the physiological age, I think that's very valuable for us to examine. And I think it also, I believe, raises the veneer as well too, to take a look at even the people who we see in our criminal justice system, and raises the questions as to a whole host of other sociological factors that bring people into the system to begin with.

So we have a lot of reading to do once you leave. I very much appreciate and want to take a look at what has been done in other states. I would be very interested in further exploring with you the program with POPS and how we can achieve and reduce recidivism, because it should not simply be a revolving door.

And one final thing that I would add as well too, I think that much of this scrutiny of our geriatric population, as well as all the population, is to also reexamine the mission of CDC. I do believe that at some point we have to take a look at rehabilitation as a vital part of CDC's mission and not simply a warehouse to incarcerate people. And until I think we can get to a philosophical change with policies and programs to get to that, I think we're going to keep seeing those four horsemen coming at us faster and faster. So thank you very much.

SENATOR VASCONCELLOS: Thank you very much. The next up we have an old friend, Mr. Secretary, Senator Presley. Bob Presley was in the Senate for some number of years; once upon a time a

sheriff. Secretary of the Youth and Adult Correctional Agency. Bob, welcome back. With him, Michael Pickett, Deputy Director of the California Health Care Services Division.

SENATOR ROBERT PRESLEY: Mr. Chairman, it's a pleasure to be here. I think we have heard a lot of information. I agree, a lot to digest. We have people around the table here representing the medical side of Corrections and parole side of Corrections, which I think can respond to a number of your questions.

Having voted for "three-strikes", maybe I -- I know you didn't.

SENATOR VASCONCELLOS: I didn't. I proudly didn't.

SENATOR PRESLEY: But in terms of what we've been trying to do. We did put together a report, a taskforce on aging population three or four years ago.

SENATOR VASCONCELLOS: 1999. With two pages of recommendations.

SENATOR PRESLEY: And we wanted to place a geriatric prison pretty much over at San Luis Obispo. And one of the reasons for that is, there's a 100-bed hospital there. It's an older prison, built, I think, around 1960, somewhere in there. We think that by doing that we could have prisoners, all geriatric in this particular prison, that would make life better for them, and they'd have the medical facilities available. And we thought we could probably save some money on the side of security It would probably lessen your security cost. And a big one is, to lessen the medical transportation cost. So many of the prisons have to transport people out for hospitalization, for dialysis, for all these kinds of major medical purposes. It takes correctional officers to go with them, stay with them the whole time for security reasons, custody reasons. So it's a very expensive proposition. To the extent that we can do all of that in one facility where the transportation costs are reduced would save considerable amounts of money.

We're pursuing now, a way to try to establish a dialysis units within the prison system so that you cut down these transportation costs.

In terms of what to do about all of this. I had a couple of ideas, but after hearing the professor, I'm not sure any of them fit. I thought that, just thinking off the top of my head, if you want to find a way to release some of these people earlier, and I don't like that term either, that's a political no no, if you release people early. But I was thinking of a system where you could setup through the Legislature here, a process and a procedure where, I don't know how you could do it, on a basis of classification or you could do it on low-risk, or you could do in it on age and say that when they reach that particular level or age, whatever you select, they would be eligible for a hearing before the parole board. In that case, they would all be treated individually. You could take in each individual case.

As was pointed out, a person released with 10 months could be very dangerous and another one on the other hand would not. So a system like that, I think could be worked out, where they could be treated in a lot more individually so that the individual review before they're released out to the public.

I don't think that much further, Mr. Chairman, I can answer any questions later. But we do have people that can respond in the medical and parole area, particular, which I hear mentioned here this morning. I don't know which one you want to start with. Mike, do you want to start with the medical?

MR. MICHAEL PICKETT: Good morning, Senators. My name is Michael Pickett. I'm Deputy Director for Health Care Services for the Department of Corrections.

Just briefly, Senator Romero, to answer one of your questions earlier, there is no class action litigation as far as the elderly or geriatric. There is, or are, a number of class action lawsuits which have scripted, if you will, and set forth certain requirements on how we deliver mental health and physical medicine healthcare within the Department of Corrections.

The physical medicine side, we're in the first year of a seven-year rollout which will determine how, and somewhat fundamentally change, how we deliver healthcare in this department. We are focusing on a chronic care delivery system. We're in the first year of it, as I said, for seven institutions this year. It does not differentiate, if you will, specifically by age. It focuses on chronic care issues, sets up the procedures and protocols, if you will, no matter whether you are 30 years-old, or whether you are 60 years-old, and it starts when you enter the system; it follows you all the way through.

The obvious hope is, if we are to do a better job of treating initially, that there will be some benefit of that as far as health care costs later in life, especially if the inmate stays with us for a prolonged period of time, which is not unusual now.

Within that, and to address the LAO briefly, we do have a highly evolved classification system for inmates in the state of California. Overlaid on that is the medical need, or the psychiatric need, for the inmate. If there are specific needs, be they aged or for some other chronic medical problem, or psychiatric problem, we then place the inmate within one of the 33 prisons we have commensurate with what that need is where we can best provide the service, be it medical or psychiatric.

Four of our institutions have licensed hospitals. Another 17 or 18 have step down facilities which are still licensed beds, which we call correctional treatment centers, and then a further step down past that for what we call out-patient housing units, what we used to call infirmaries. They are spread statewide and give us an opportunity to deliver a broad range of health care to the inmates.

We would not disagree with some of the information you've been presented with. Number one, I don't think we would disagree that the chronological age and the medical age, if you will, there's probably a 10-year offset in that. And I think that a lot of the information, some of which we provided with the committee, would tend to validate that.

At least two-thirds of our medical expenses are for inmates that are younger than age 55. The population that is over 55 does not drive the bulk of the money that we spend in contract medical, per se, which is medical services outside of our institutions that we contract with. It's more in line with 35, 36 percent. The rest is spent on inmates that are younger than that, and a lot of them in that mid age, their 30's and 40's.

SENATOR VASCONCELLOS: What percentage of inmates are in the older category?

MR. PICKETT: About 3 percent to 4 percent, Senator.

SENATOR VASCONCELLOS: About 3 percent, so they don't take a majority. That's no big surprise, man.

MR. PICKETT: I would agree with you.

SENATOR VASCONCELLOS: But what I heard this morning from Professor Turley and the Analyst, as well, is that younger group now that's taking the majority is going to be older and still in prison under "three-strikes", and it will be explosive. They won't be a minority anymore. They seems like they'll be 30 percent.

MR. PICKETT: I cannot disagree with that, Senator. That age group, or the bulge as you refer it, any reasonable person would agree that it is going to move along the age continuum. And I would also tell you that some of the data we have given you will show that there has been an increase in the last 10 years in the average age of our inmates who are using outside medical beds. It is up to about 43 ½, age 44. And it started out in the mid 30's maybe 10 years ago. So we are also seeing the increase.

For better or for worse, the litigation that we have, and the course that the department has taken for some time has been not to look at the geriatric population as a separate entity, I guess, if you will, but rather as a part of the total population that we deliver health care to.

I will tell you that one of the problems I think we face, is as the number grows, and the number -- that 3 percent number gets higher. It's roughly 6,000 now, that are age 55 and older. Surely that number will grow. We've seen it grow in the last 10 years. That population becomes more difficult to separate out and to treat if you were to try and isolate it, for lack of a better word. Thus, we have it. We maintained that it's spread throughout the system and within the delivery system that we have. It becomes more and more problematic to build big units just for that purpose, especially when you have to consider the mentally ill; how we treat them; where we have them housed; which are specific entities and then try and overlay the medical on top of that.

I will tell you that for years, and we --

SENATOR VASCONCELLOS: I have no idea what you're talking about.

MR. PICKETT: Oh, I'm sorry, Senator.

SENATOR VASCONCELLOS: It doesn't make sense at all. You're meaning, as you're going to have 15,000 folks who are in wheelchair geriatric, you're going to keep them in the same prison place as everybody else? Is that what you just told me?

MR. PICKETT: I would tell you that, no, we're not going to do that, Senator. It's very problematic to do that.

SENATOR VASCONCELLOS: Okay.

MR. PICKETT: Which is basically why we have them spread throughout the system. So my only point was, that it's very difficult for us to try and put all of one group in one prison It's impossible. We can't do it.

SENATOR VASCONCELLOS: Because? You're declaring it doesn't make it so. Tell me why.

MR. PICKETT: Basically, we don't have enough room.

SENATOR VASCONCELLOS: Oh.

MR. PICKETT: So the system remains decentralized, if you will, throughout our 33 prisons.

SENATOR VASCONCELLOS: I guess either I'm slow, or you're not clear.

MR. PICKETT: Senator, I'm probably not explaining it well.

SENATOR VASCONCELLOS: I mean, you've got so many people and so many prisons, and why you couldn't move 20 from here to here and 20 from here to here, and have those who are geriatric and fragile and can't move in the same place, you still have 20 here and 20 here and I don't understand -- there is something missing in your logic or else in my understanding.

MR. PICKETT: I don't think anything is missing in your logic, Senator. I mean, it's basically how we've setup our system.

SENATOR VASCONCELLOS: It's how you set it up. It makes no sense, but that's the way you set it up.

MR. PICKETT: Right.

SENATOR VASCONCELLOS: Senator Romero.

SENATOR ROMERO: Let me ask a question, and this can go as well to Senator Presley, as well too. You're giving us these figures, or these, I guess, observations probably more so, because I haven't heard any hard statistics. The report that was done internally to the CDC in 1999 did make a number of recommendations. It did call for the creation of a taskforce and working groups in order to go through this. I mean, I'm sitting here looking at two pages at least, of recommendations. And I would hope at some point we can walk through these. And I would ask for one by one to walk through this.

The first question I would ask is, has this taskforce ever been convened since 1999? My understanding, it hasn't, and it's now 2003. But I hope I'm wrong.

MR. PICKETT: That's my understanding also, Senator. It has not.

SENATOR ROMERO: So the internal planning document back in 1999 called for the taskforce to be created and as of 2003, something as simple as that, hasn't been done? I mean, can I just get an answer as to what happened along the way? I mean, why was it never --

MR. PICKETT: Senator, I'm not sure if I can give you an answer to that.

SENATOR ROMERO: Can anybody?

MR. PICKETT: I don't think any of us were in health care at the time. And that's not a copout, so to speak. But my guess is --

SENATOR ROMERO: Let me as Secretary Presley. Can you just let me know why?

SENATOR PRESLEY: The nearest thing that I could come to in answering your question is, after this was put together we submitted what's called a GAR to the governor's office and we never got a green light on it.

SENATOR ROMERO: Was there a response? Was there any discussion?

SENATOR PRESLEY: No.

SENATOR VASCONCELLOS: So you blame the governor for this?

SENATOR PRESLEY: Pardon me.

SENATOR VASCONCELLOS: You blame the governor for this then?

SENATOR PRESLEY: No. I'm not blaming the governor.

SENATOR VASCONCELLOS: No, we should. We might as well. I mean, someone --

SENATOR PRESLEY: I think they were just loaded with big problems and this was --

SENATOR VASCONCELLOS: Well, we asked for a study. You people do a study and recommendations and a report and nothing happens, someone's responsible. And if you aren't, then I guess the governor is. And I guess _____ thinking we can trust you people to do something, which is a really tragic failure of _____

MR. PICKETT: Senator, if I could add one more -- I think shortly after that, the department and the plaintiffs in the most recent class action for medical services began in earnest the negotiations, if you will, for a settlement in the Platta lawsuit, which determines how we provide physical medicine that we currently have. And I think that the focus at that time became less on the aged, if you will, and on dispensing health care in general. And I'm not making excuses, I'm just saying that shortly after that at about that point in time, I think the focus primarily shifted towards medical in general, and in working out the agreement.

SENATOR ROMERO: You know, I appreciate that there are lots of balls bouncing, but this is a very complex issue. But nonetheless, delivering services is an important reality that you have to undertake. But at the same time, the issue of the aging of our prisoners continues to go forward, and I don't necessarily see it as an either or. They really are two different components of our prison population that we need to address.

Secretary Presley, if I could ask, I'd like to actually see a copy of that GAR. If you would provide it to the committees I would appreciate it.

So, I guess the rest of my questions are almost irrelevant at this point because given that the taskforce has never met --

SENATOR VASCONCELLOS: Your questions aren't irrelevant, the answers would be irrelevant.

SENATOR ROMERO: Right. Any of these questions that I think, and actually some of these are quite good. Basically I guess we really are starting at scratch today, that we have, even though it's been some years since this was recognized as a problem, and I do applaud the CDC for recognizing that a problem exists, the conclusion is, at this point we simply ignored what we realized some years ago and we're starting from scratch today.

SENATOR VASCONCELLOS: Okay. Do you have more that you wanted to tell us?

MR. PICKETT: Just one more. There was some discussion earlier by Senator Karnette in reference to parole placement, Millicent Gomes is at the table, who was in charge of the transitional unit which transition inmates with mental health and physical medicine needs from the institutions to paroles, and I'll turn it over to her to provide the senators with any information she can.

MS. MILLICENT GOMES: Good morning. My name is Millicent Gomes. I'm the health administrator for the Parole and Community Services Division, and I would like to share with the committee a brief statement on some of the program impacts, or some of the parole problems that we've experienced with just releasing inmates that have onto parole normally with medical problems. I know that some of the questions that Senator Karnette was asking was in regard to Medi-Cal and Medicare and those issues.

I've been personally involved in over 150 medical placements during the course of my employment in the last couple of years with parole, so I'm intimately familiar with some of the problems that are associated with finding facilities to take our folks.

Privately owned and operated skilled nursing facilities are not required to take parolees. Many of them fear the stigma associated with treating and housing ex-offenders, and their reputations in the community may suffer by taking ex-offenders.

In one particular recent case, we had a skilled nursing facility that was being picketed in the Los Angeles area for having accepted a sex offender into their facility.

Parole has had to continuously pickup the tab, if you will, for paroled medical placements with no budget for medical services in the interim time before Medi-Cal or SSI or other federal benefits can be secured at sometimes a very long delay. It is very difficult to preplan to get benefits in place when you can't guarantee a placement ahead of time because the skilled nursing facilities are unable to guarantee whether or not a bed will be available in that particular county to accept these individuals. Keep in mind, this is just in regards to people who require medical attention and skilled nursing facilities upon their release, but knowing that the impact that it does have and the program areas it does impact.

Imagine if you will, a case that we currently have looking to secure a skilled nursing facility is a quadriplegic yet can use one arm to hit people that get close enough to him. To bathe, or feed, or otherwise provide services to him, he is verbally abusive and loud due to traumatic brain injury, incontinent, has Hepatitis A, B, and C, and spits on people.

Over 400 skilled nursing facilities were contacted in this particular case throughout the state and needless to say, this case was not an attractive candidate for the skilled nursing facilities. Seeing as Medi-

Cal rates are $149 a day, which adds to about $54,000 a year, and this particular person was only 49 years-old and not eligible for Medicare, which would have paid $169 a day at a cost of about $61,000 a year.

This is just but one example that requires the special assistance in pre-parole planning. Now to combat these issues, we've been able to divert limited resources from our transitional case management program for the HIV population, to assist in the pre-parole planning for these individuals who are coming out on parole anyway. So we have four social workers throughout the state that assist the parole division in these difficult placements.

So, I just wanted to share with the committee some of those particular issues and what parole has been doing to sort of get ahead of the game in this particular case.

SENATOR VASCONCELLOS: Well one suggestion that has been floating around, I have a bill to either create some skilled nursing facilities within our system where we would take care of our own people at a far lessor cost and take care of those placement problems that you're experiencing.

MS. GOMES: Yes. Yes. And we do have severe placement problems.

SENATOR VASCONCELLOS: Thank you. The next up.

SENATOR KARNETTE: I have a comment.

SENATOR VASCONCELLOS: Senator Karnette.

SENATOR KARNETTE: Do any of the inmates, and I know this is a problem, you have to work with the unions on this, I understand that, but can any of the inmates take care of others? Do you use inmates to -- you must do that some -- that want to take care of patients as sort of a training, job training or something? I would think that there would be some.

MS. GOMES: You mean within the community?

SENATOR KARNETTE: Within the prison itself.

MS. GOMES: Oh.

MR. PICKETT: No, Senator.

SENATOR KARNETTE: Could that be done?

MR. PICKETT: I believe not, and I'd have to check to be specific. But licensing requires that it be licensed medical personnel, doctors, RNs, medical technical assistants. And we used to use inmates, but have gotten away from that in the last 10, 15 years. All of our facilities have gone to be licensed.

SENATOR KARNETTE: But is it possible? There is training of one kind or another in prisons. Not enough, but there is some. Is it possible to train inmates to be -- to have a license that they could use later on? Is that a possibility?

MR. PICKETT: That I am aware of, we don't have any programs that train inmates for anything in the health care field.

SENATOR KARNETTE: Is there some reason why we don't, or is it something nobody thought of, what?

MR. PICKETT: We used to have some programs, and I'm -- this is going back a ways -- for x-ray techs, but as far as a caregiver, that I am aware of, we have never done that.

MS. GOMES: Also, Senator, I believe that there are some issues in regards to confidentiality of information with other inmates having access to that information.

SENATOR VASCONCELLOS: Well there's certain levels of service that require for licensure, some professional training and probably credentialing, but there are some like feeding people who are ill that probably don't require that.

SENATOR KARNETTE: That's what I was thinking, yes.

SENATOR VASCONCELLOS: _____ imagination could be thought up if someone were thoughtful about it. It wouldn't require confidentiality.

MR. PICKETT: The only area I'm aware we do it is at the hospice at CMF. They're not specifically used as caregivers. I believe they do feed. But past that, I'd have to go to check and see what the requirements are and what precludes us from doing that. I can just tell you that, we don't have any programs where we're formally, as a vocational issue so to speak, where we are doing that.

SENATOR VASCONCELLOS: Okay. The next up.

MR. MIKE BRADY: My name is Mike Brady. I'm with the Youth Adult Correctional Agency in the Board of Prison Terms. I wanted to address a couple of issues here. And we've broken out some

numbers on the recidivism rate for the 55, 60, and 65 population in our population and California doesn't track with the national statistics.

In 1998, the age 55 plus we had a 20.3 percent recidivism rate on the 55 plus population. We had a 17.1 percent population of recidivism rate on the 60 plus population in the first year. And in the 65 population in 1998, it was 16.7 percent. In 1999 and 2000, it was about 20- to 21 percent for each of those age groups.

SENATOR KARNETTE: But were a lot of those technical, like they forgot where their office was?

MR. BRADY: The way they've defined this in the data that I have, Ms. Karnette, is, new crimes. So, it's not technical violations.

SENATOR KARNETTE: So it's not technical violations.

MR. BRADY: No, Ma'am. According to the definitions that were provided to me by our research office, the definition of a recidivist is a felon who commits another offense. And so applying that definition to these statistics. And then the two-year data for age 55, from '97 for 55 plus is 53 percent. It's over 50 percent for all the way up to 2000, which data is not available. For the age 60 plus it's about 45 percent. The age 65 plus is 39 percent. So, our recidivism rate is considerably higher than the national average, as you discussed with your expert.

SENATOR VASCONCELLOS: It's hard to believe those figures.

MR. BRADY: I understand that, Sir. I'm just giving you the data that I have. I'm not testing to the validity.

SENATOR ROMERO: Did you also bring into share with us the data for looking at recidivism as it pertains to technical violations?

MR. BRADY: I don't have that in front of me, Ma'am. I have to tell you that I'm a new person at YACCA, so I don't -- I did not have an opportunity to get that. I talked to Ms. Sutrow and I got this information last Thursday. So, I have not had -- but I will be happy to provide that at a later time.

I would also indicate that we've broken out for you the difference in the population of 55 and older from the seriously violent felons, for the non-seriously violent felons, and the actual population that they categorize for non-serious and violent felons are 2,026 with the caveat that understand that when we talk about seriously violent felons we're talking about 1192.7 and 667.5 Penal Code sex offenders and first-degree burglars, murders, second-degree murders. And we also have some data here that why they include manslaughter, assault, battery, other sex offenses, escape, arson, possession of a weapon, all those are in non-violent categories. So if you take those out, you have 1,834 inmates that are 55 and older in the non-violent category. And of the drug offenses that the LAO talked about, 40 percent of the drug offenses that they're talking about in the
55 and older are, possession for sale. So they're not just straight possession offenses, they are for sale offenses. And there's another about 3 percent that involves manufacturing. So you really have to get into the detail of the categories to understand the issues that are at least from my perspective, when we're talking about what to do with this population.

And I wanted to answer Senator Karnette's question about the female population. The female population does track with regard to felony offenses from age 20 to about 40 with that of the male population, that you had asked that question a little earlier.

SENATOR KARNETTE: So when we get into classifications, which we haven't, particularly, but we could classify, we could have a classification system that would show males versus females and such, could we?

MR. BRADY: I think we do have a classification system.

SENATOR KARNETTE: We do?

MR. BRADY: Yes, Ma'am. We've got a tracking system that shows the offense ages for admittees to the CDC by year and by age.

SENATOR KARNETTE: And recidivism is there too?

MR. BRADY: I believe it is, yes, Ma'am. Yes it is.

SENATOR KARNETTE: Okay. I'd like to see that if I could later on.

MR. BRADY: I'll provide that to you.

SENATOR PRESLEY: Mr. Chairman, the one thing that hasn't been discussed that maybe your committee might want to give some thought to is, you know, we have a primarily a determinant sentencing structure. There's a little bit of indeterminate murder and some of the others.

SENATOR VASCONCELLOS: Yes, I know that. I voted against that. I remember it.

SENATOR PRESLEY: In a lot of these paroles, for example, people wonder why these people are paroled. Well, they're mandatorily paroled because they're time is up. So that maybe something you want to look at. That would be a horrendous change, because it was a horrendous change when it was made. But, when we had the population in the late '70s of, I recall, I think this gentleman said 19,000, I recall about 28,000. When we went from indeterminate to determinant. And that just immediately, as you recall, the population just really went sky high.

SENATOR VASCONCELLOS: Yes. Okay. Who else is going to speak?

SECRETARY PRESLEY: Excuse me a second. I understand this gentleman here might want to add something to recidivism, as long as you're on that subject.

MR. ARTHUR CHUNG: Hi. Good morning, senators. I'm Art Chung. I think I've testified in front of your committee before in regards to recidivism rates. I do have some information in regards to, I think we gave you a copy of this earlier, but I can make copies of it for you. It's a recidivism table basically for calendar year 2000. It shows you the types of returns that the department had and it's broken down into administrative criminal returns, type one, type twos, and then we have administrative non-criminal returns, and we have some statistics on this information. This is based upon the Board of Prison Terms recidivism information and who they've revoked, and why they revoked them. Would you guys like a copy of this?

SENATOR ROMERO: Yes. If we could get copies for the members, let's go ahead and call that up.

SENATOR VASCONCELLOS: Somebody else want to speak? Are you here to speak?

DR. RENEE KANAN: Hi, Senators. My name is Renee Kanan and I'm a physician. I'm one of the assistant deputy directors with Health Care Services, and I'm relatively new to the department and to the state of California.

I'm really here to answer any questions that you may have about the health care program. But I did want to elaborate just a little bit on the system that we currently have in CDC.

Although we don't have a geriatric program per se, we do actually have a fairly comprehensive health care program that begins at reception. And based on that initial screening and evaluation, we determine that particular person's healthcare needs based on their health status and their functional status. And we do have fairly extensive preventive services and chronic care standards that have been developed that do focus on the geriatric population but again, meet the needs of different subsets of patients.

SENATOR VASCONCELLOS: Okay. Anything more to say?

MR. CHUNG: Yes, I do. I just wanted to point out that when Mike was talking about the recidivism rates, that the rates we're talking about basically the 21 percent for 1999, the 51 percent for two-year return rate, those are all based upon returns and revocations so that those included the people that had committed an offense and received a court commitment. It also included people who were revoked by the Board of Prison Terms, and also the individuals who are continued on parole who basically came back to prison after some hearing or whatever, or they want to _____ or a drug treatment program, and they were released back on parole. But those numbers and those percentages, they're not just court commitments, they're all the people who came back from parole across the portal into prison.

SENATOR ROMERO: Okay. That makes more sense. I appreciate that clarification.

SENATOR VASCONCELLOS: Mr. Neal, anything that you wanted to say in response? Senator Romero first.

SENATOR ROMERO: Let me just ask again too, the professor had emphasized that it's important to make an assessment of the physiological state of the inmate as opposed to simply the chronological and looking at basically lifestyle issues. We talked about reception. We talked about the assessment that's done. Can you give us an indication as to what is taken in so that we can assess the physiological condition and how is this monitored over time? And then as well too, I would just ask, has there been any study or any reflection as to the deterioration of that physiological status over a period of time. I'm not sure who on the panel would be best suited to answer that, but I'd like, looking at the physician --

DR. KANAN: I'm probably going to regret telling you that I was a physician. Yes, at reception in addition to obviously taking a history and finding out what that person's chronological age is, you also get a history of any chronic illnesses that they may have had. What preventive services they have? What medications they may have been on? What previous hospitalizations they've required? Their family history, for instance. You also do an examination that's really head to toe. You check their vision, their hearing, their thyroid. You listen to their heart, their lungs. And you do an assessment of their functional status. That includes whether they're able to perform activities of daily living, including mobility. And based on that initial history, physical and some initial laboratory studies, you determine a treatment plan, essentially. And again, it's not based on age, per se, but after you've collected that kind of data you determine what their health status is and what their functional status is, and determine a treatment plan which takes into consideration housing needs, adaptive devices, any kind of medications, and any other sorts of services and whether they need to be enrolled in the chronic care program.

The chronic care program that we have is actually eight different clinics, and it does include diabetes, hypertension, other cardiovascular conditions, asthma, emphysema, and other lung conditions, HIV, general medicine. It does include the vast majority of our patients with Hepatitis C, gynecologic clinic, TB clinic. I'm not sure I've covered all of them, but there are about eight of them.

SENATOR VASCONCELLOS: Professor Turley, you talked, as I recall in your testimony, you talked about the absence of data. Do you want to elaborate on that?

PROFESSOR TURLEY: There's a number of things that are shortcomings in terms of data. What I was just handed doesn't have an age breakdown. This is just your general -- There's a couple of things that are a problem in California that concerns us.

One is, the ability to track by age, to break out age with a little more detail The two things California is going to want to do it seems to me, in order to project your budget requests annually and project your demands on your system is going to be to put into place ways to track age and track costs a little better. My understanding is that when much of your medical costs are still contained within the CDC budget, but some of them _____(tape turned over) -- report that breaks down by age. The feds actually have that, and you actually report to the feds every couple of years some of that information. So all you would have to do is actually create what you give to the feds; expand it a little, and you'd have an internal reporting system based on age.

But the figures that we're given, some of these still don't quite make sense, even with the revocations. Like, 50 percent, 45 percent, 39 percent, if you include all revocations that sort of makes sense because it contains anyone who's returning basically for any purpose.

What I would point out is that the recidivism rate even on those high figures is significantly below the overall recidivism rate. That it is still tracking a fraction of what your general recidivism rate is. What's interesting to me is, that that low recidivism rate is without making qualitative judgment. That is, once you make qualitative judgments, you bring it down further. But, we would need more specific information to chart where you are in comparison to the national data than we have here.

Can I just note very quickly, two other things? In terms of benefits, that is a big concern because you've got this release issue. In Louisiana, for example, we found out that a lot of the prisoners that we could get released on things like compassionate release, could not get funding. And so that's something you have to work out with any type of legislative change because it won't give you the benefits that you need, and they will have a cliff problem once they leave. For someone who is HIV positive, for someone who has got -- in a sense that's really going to be a problem.

Many of these guys actually qualify for things like veterans benefits. They can qualify for social security, obviously. They can qualify, in some cases, for other types of benefits. But you need someone who's working specifically with the population to chart it. And more importantly, to get the system working so that when they get out, they'll get the check in short-term. Because what we have found, it takes three to four months, at least, for them to get that first check, and they don't have that cushion.

The other thing I was going to note in response in terms of facilities is that the good thing about geriatric units is that most of these geriatrics who are high-risk are not high-risk for escape. They may be high-risk for embezzlement because they went in at 56 and you can hardly say at 60, is a new man. So the prisoner is going to have to stay in, but it does make him a high-risk for escape, which means you can use a

higher percentage of minimum security facilities which dramatically reduce your costs because of guard costs. But more importantly, for a lot of these individuals you can do easy conversions at low cost. For example, a lot of states have looked at the former TB hospitals and other ready made structures that can be converted into minimum security systems particularly for low mobility inmates and you can create a system by which you keep the costs within the CDC with a special budget by converting those units. And they are generally lower cost then what you'll find otherwise.

And then finally, in terms of training of inmates that is done, in fact, in other states. And I know California is absolutely correct, I mean you've got issues of confidentiality and there's only so much you can do, but states like Louisiana and other states actually do train their inmates to deal -- allow the rudimentary issues. And generally, those don't violate privacy laws. If the inmate is certified as a nurse. The other good thing is, this is a burgeoning area and so it's also a form of job training. So, you both reduce costs to the system, but then these people actually pick up a useful skill that can be put into effect.

So, I just wanted to note those things for you.

SENATOR VASCONCELLOS: One more question for you. Your POPS program operates in how many states now?

PROFESSOR TURLEY: We have offices in North Carolina, Michigan, D.C., which serves the East Coast, and Louisiana.

SENATOR VASCONCELLOS: What's it take for a state to get involved with you?

PROFESSOR TURLEY: Well, actually California is in a great position because you've got a lot of law schools. And so, all that's required -- most law schools are interested in doing it. We will setup the POPS office. We'll give everything we've got; all of our computer data. Everything we've got; all of our forms. We'll go and we'll train them and then they're there. And the value of the law students is that they're not prisoner advocates. In fact, that's something we train them to make sure they understand. They're public advocates. They work as a liaison between the inmates and the correctional system and the state. Their job is to be right in their evaluations. So we train them in recidivist evaluations and they take it very, very seriously. And what they do basically, is they give you some extra resources the state doesn't have to carry. What the state has to do is give access, usually access to prison jackets can be done with an approval of the prisoner. Much of that can be waived, which the prisoners obviously give. And then, POPS can go into a facility, bring all of the older inmates together, speak to them, explain the system to them and start to conduct some interviews, and then bring what we find to the state, usually the parole board, as the low-risk, high cost prisoners first. And then, obviously it's up to the state on how good the data is and what else they need.

SENATOR VASCONCELLOS: So it simply takes the state to make a request of you?

PROFESSOR TURLEY: Yes. Basically, if you want a POPS office, the two things you have to do is that the executive and legislative components have to essentially say, yes, we want to participate. It's really of no risk to the state. I mean, it doesn't cost really anything except maybe some rudimentary costs. And then you just have to give access in the sense that you don't have POPS go through the usual attorney/client interview system. That the state, the prisoners are simply told that there is a POPS pilot program that they should arrange the meetings with the consent of the prisoners.

SENATOR VASCONCELLOS: Okay. I guess what's clear amongst all -- I understand the need to have a coherent all persons health care system. It was a disgrace before and the court suits led to some salutary negotiations. Above and beyond that, is this emerging startling development that's going to be -- we're getting more and more people in the prisons who are older and older and who cost us more to incarcerate and who are less and less of a risk to the public safety. It's a kind of ironic double twist. They're going to cost more to get less. At some point we have to figure out what we do about that, rather than go bankrupt.

So I've got a bill in the area. I've asked Senator Romero to look at co-authoring with me. It talks now about the state engaging in some skilled nursing facility operations to take care of your placement problems and reduce the costs. I think it's going to be expanded after this hearing to include some data, and I've asked Professor Turley to help us figure out what we need to get and to expect somewhat of a plan for what to do with this emerging challenge or crisis before it gets overwhelming. And I've asked the analyst to work with us on that in devising that language. And then I think we ought to have POPS people come into

California. If they've got a 100 percent success rate, it's worth looking at, you know. I mean, they've got not one person so far who has gone back. That's certainly a far cry from our rates.

So I think we're at the front end of something major that we ought to get ahead of before it gets so overwhelming on our part.

So thank you, Senator Presley. I'd like to invite you all to work with us in designing it so we can get a coherent, smart, safety oriented and efficient system.

SENATOR PRESELY: I just want to leave you with a couple of other thoughts. And one is, overcrowding. I hope that really sticks with you. You heard the figures from the professor here. We have them as well.

Given that situation today in 2003, and the population of California is increasing every year, what? 5-, 600,000 people every year?

SENATOR VASCONCELLOS: About that, yes.

SENATOR PRESLEY: And crime is increasing. So you can see where that's going to take us.

SENATOR VASCONCELLOS: It's going to take us to closing schools to build prisons, and I'm not going there. But I'll be gone in two years and maybe you can get that then. But I'll be gone. And I'm not building anymore prisons and closing anymore schools. I mean, did you see the piece in the Chronicle?

SENATOR PRESLEY: If you don't build anymore prisons, then you've got to do something else because they're going to be coming. You're going to have to do some kind of --

SENATOR VASCONCELLOS: I understand. Something else probably is in order. Maybe home tags, home surveillance, you know, assessing people who are drug users that ought to be in prison. Prop. 36 changed that for us. The people did that. We didn't have the courage to do it ourselves. But we ought to be smart about seeing what's coming and making sense.

SENATOR PRESLEY: There is a fertile field where we work in, no question about that. I want to leave -- another thought is, you heard a lot here about we don't have the data, and that's very true. We have not been able to get the resources for a good technology system in the Department of Corrections.

SENATOR VASCONCELLOS: Okay. We'll try to identify that.

SENATOR PRESLEY: We can't even tell you which people are in what prison. It's that bad unless you do a hand count.

SENATOR VASCONCELLOS: Okay. You've got some allies up here.

SENATOR PRESLEY: Instead of saving money, you're spending money. The other thing is, that as unfortunate as it is, over the years, as Corrections has tried to get money, particularly in the medical field, to do some of these things, they couldn't do it. Then the courts would come in with the lawsuits and order something that is a lot more expensive. So we're operating --

And I've got this book here. I gave Senator Romero one and I'll give you one, of all the mandates and the court decisions that impact Corrections right now. You can't move in this system without some -- there is some authority here of some kind. It's either statute, federal or state. It's court decree, federal or state. Mostly federal. Or, it's MOUs. All these impact our operations and our costs. It boxes us in.

SENATOR VASCONCELLOS: Did you see the piece in the *Chronicle* about three weeks ago on a Sunday, the woman who suggested we ought to convert all of our schools to prisons? So our kids could get, rather than $5,000 a year, get $30,000 a year and get health care, get food. I mean, it's a pretty neat idea.

SENATOR PRESLEY: It would be a good bill for you, Senator.

SENATOR VASCONCELLOS: Right. Okay. Thank you all. Just stay around because there are some witnesses who are coming up who have stories about Corrections I'd like you to hear, Bob. So, thank you very much.

Two things. Next we have witnesses coming up on a personal side, and Ms. Killian and Ms. Kavrik, and also anybody else who would like to testify from the public before we close. We're going to close at 1:00. If you would identify yourselves to the sergeant-at-arms in the booth here so we can get a rooster of who's coming up. So the two witnesses please, come on forward.

Okay. So, Ms. Killian. Please.

MS. GLORIA KILLIAN: Good afternoon. I am the aging, graying prisoner that everyone has been talking about today. I'm 56 years-old, and I spent 16 years and four months in prison for a crime that I didn't commit. Fortunately, I was vindicated and I was released about six months ago. I say this to assure

the committee that I have actual and personal experience in the matters of which I speak. As a matter of fact, I've prepared a brief submission for the committee members which the sergeant-at-arms has, with some anecdotal data.

All of the discussions that concern the release of elderly and ill prisoners focus on releasing prisoners convicted of non-violent crimes. However, this approach overlooks the group of inmates who cost the state the most money and are the least likely to re-offend. That group is female lifers and long-termers.

The recidivism rate for female lifers, regardless of the age at which they are released, is less than one percent. Even the group categorized as elderly, non-violent prisoners has a recidivism rate of two percent. Female lifers rarely re-offend.

On a closer examination of the cases also indicate that despite their convictions for crimes of violence, substantial extenuating circumstances are often involved. One-third of all female lifers are battered women who either killed or attempted to kill their abuser. Another third of the female lifer population did not actually commit the crime themselves. They were passive participants or accessories. But under California's felony murder rule, they are convicted and sentenced the same as the target offender. The final third of the female lifer population did commit a violent crime which is usually due to drug addiction or fear of an abuser who forced them to commit a crime, but they, like all other female lifers, are the most rehabilitative and the least likely to re-offend. And as you've noted, there is a burgeoning population of "third-strikers" who receive a term of 25 to life even though the target offense may have been merely a petty theft.

It is important to note that I'm not discussing or advocating an early release program, as many female lifers are well beyond their minimum parole dates. The statistics compiled by Professor indicate that the average inmates 55 years and older will suffer three chronic illnesses while incarcerated. But it's been my experience that the disease process with female lifers usually is well commenced by the age of 40.

Eighty percent of all female inmates have been abused either physically, sexually, or emotionally, during their lives. And when you combine that factor with the horrific stress of long-term incarceration, you have physical manifestation of chronic illness by a minimum of age 40. This means that the state is spending millions of dollars over and above the $26,000 it spends per inmate per year to incarcerate each person.

In addition, as you know, the medical care in California prisons is often poor, and treatable conditions are exacerbated by medical negligence and neglect. Female lifers are not the dangerous violent felons that you think they are, nor are they even the people who they used to be.

Females sentenced to life terms on the whole are quick learners and they do what they can to change themselves and to make amends for the crimes that brought them to prison. They attend psychological self-help groups; they do community service work; and they try desperately to atone for the crimes that brought them to prison. Many have been in prison for decades and their health is deteriorated to the point that they can barely fend for themselves.

An example, Helen Loyack is 80 years-old. She's five feet tall, and she weighs approximately 90 pounds. Three times a week she is placed in waist chains so that her hands are held by her side. Her feet are shackled. And she is driven 40 miles to the Riverside County Medical Center where she receives dialysis for chronic kidney failure. This is an all day trip. It is exhausting for any prisoner, but especially for an 80 year-old woman. She often has severe bruising on her hands and feet from the shackles and chains. And the stress of the trips themselves increase the severity of her kidney problems. It is the only way she can stay alive.

She was convicted of being a passive participant in a conspiracy with her son, but it's very possible she had no comprehension of the situation. There was no victim in this crime. No death occurred. A letter from Helen is submitted as Exhibit 1.

Marie Nestle is 76 years-old. She suffers from heart disease, severe asthma, which necessitates breathing treatments, frequent hospitalization, and she also has rheumatoid arthritis. She takes nine separate medications several times per day. She's been incarcerated for 24 years on a term of 7 to life. She has a perfect institutional record, and she's held in high regard by most of the staff, as well as inmates. She refuses to admit guilt to a crime that she didn't commit, and she has stated that she will die in prison before she admits guilt, when she is innocent. She will undoubtedly die in prison.

Carol Hargess is 63 years-old. She's had one lung surgically removed. The remaining lung is severely damaged. She can't walk more than a few yards without stopping to breathe. She's a battered woman who's served 24 years on a term of 7 to life for conspiracy to kill her abusive husband to protect her children.

Stella Bassinger is 72 years-old. She suffers from emphysema, COPD, heart disease, arthritis. She can't walk more than 50 feet without stopping to catch her breath. She has a pace maker which has been replaced once and which has been worked on again on a second occasion. She's been hospitalized on several occasions. She was told by the doctors at the hospital that her cardiac care alone has cost three quarters of a million dollars. She's served 17 years on a term of 15 to life.

Glenda Virgile is a 56 year-old woman who suffers from asthma, emphysema, diverticulitis, Hepatitis C. She has bone spurs in her spine and several spinal discs that are bulging and require surgery. Her knees are in very poor condition due to injury and several beatings. On many occasions I've seen her cry from the pain in her back and her legs, because they don't treat pain in prison, nor do they allow things like heating pads or egg crate mattresses or extra pillows that might help to alleviate pain. She's a battered woman who killed her abuser the night that he tried to kill her, and she has served 17 years on a 15 to life.

Nicky Lambert was 72 years-old when she died. Both of her legs had been amputated and she had served 26 years in prison. She was found suitable for parole, but her parole date was taken by Governor Davis on the grounds that she was a threat to society.

SENATOR VASCONCELLOS: With no legs. Yes. Sure.

MS. KILLIAN: Her legs had been amputated almost to her hips. Many of these women have family and friends that can bear the cost of their care. But even if they required care or assistance from the state or the county, it is far cheaper to provide medical care, assistant, and any necessary treatment outside of the correctional setting.

And I thank you for the opportunity to present these issues to you.

SENATOR VASCONCELLOS: Thanks for bringing them to our attention. Appreciate it. Yes, Ms. Kavrik.

MS. LAURA KAVRIK: My name is Laura Kavrik, and my father is now at the piece says he's at CMF. He's at the California Medical Center. That's where he is housed now. He was 70 when he was incarcerated. He's been in for four years. And prior to his sentence, he's never been in the system. He'd worked all his life. He was an active functioning man. He was on no medication. And he had insurance.

Through this whole process we've tried to talk to people to find out how my father's insurance bills will be paid, and we've never gotten an answer. So we still have, and are paying, his insurance costs.

He was sent to DVI and he was classified because of his surname and because of the location where he was, as a northerner. He was then housed with northern gang members. And we've tried many times with correspondence and with written, verbal and written, and we've been flatly told that that's how classification is done, by his surname. It has nothing to do with his age, his medical background or anything. We were also told that it's the department's practice to house young inmates with older inmates because it tones down the violence. They're hoping that this is the way of toning down the violence.

It took eight months before my father was able to get a declaration or a, what they call, a chronicle, where he was able to sleep on a bottom bunk and be placed on the bottom floor. Until that point, he was placed in different cells throughout the -- Dual Vocational Center. And they are not classified by age. He was classified purely by his surname and the location where he lived prior to being institutionalized.

And because he was classified as a northerner, he was at Dual Vocational Institution for two years. And during that time he was on lockdown more than he was not. The shortage time being a three-month period; his longest time being an eight-month period. At that point, his health and safety was compromised not only physically, but mentally. He was in his cell not able to move at any time. He wasn't able to go out and get any library books. He was housed with a young person that played rap music 24-hours a day. And that was up to eight months, where they were locked down.

Because of the lockdown institution and him being elderly, he was --now he has medical problems. He's declining. He has high blood pressure and high cholesterol. And being in a lockdown situation, there were times, two and three weeks at a time, where his medication was delayed.

Recently he was moved to California Medical Center in September, and he's now housed in dorm with 45 other men, he being the oldest. The next oldest being 66. All the others are young.

In that dorm, he says that it's dark. It's noisy. There are times that he can't hear to be called for dinner, for lunch. And the reason it's dark in there, they've got lights and the younger inmates don't like it so they knock the lights out. They're replaced and again they block the lights out, or hit them to the point where the lights no longer work. So they've stopped replacing them. And because he's in, there's no consideration of his age. He's there with the younger inmates.

Recently -- well right after he was sent to the medical center, he didn't have any problems medically other than having the high blood pressure and the high cholesterol. He now is suffering with back pain and having his legs get numb on him. He's been seen by a neurologist who has ordered an MRI and also ordered a back brace, as well as shoes for support and he wanted him also to be seen by a neurological surgeon because he told him with what's happening with his back and his numbness of his legs, now the next thing that's going to happen is, he's going to become incontinent of bowel and bladder.

The dignity of my father, this happening to my father is just, he talks about it and the tears start because he is -- he's in a place where there's young men and he, this elderly man now that may become incontinent with bowel and bladder if he doesn't get the medical needs that he needs.

We were told, or the doctor told my father that family could be present, so immediately we started writing letters. We started corresponding with administration there at the center and we've gone the whole gamut of talking from the very bottom person all the way up to the warden, the doctor, the medical director and we've been told different stories. So I don't know what is what. But at this point we've been told for security reasons, family cannot be present, which I understand.

But, and with that understanding I wrote a letter in detail asking questions, having questions for my father to ask with the surgery the risks and the benefits that will incur. If the surgery has to be done, if it's not happened, what will talk place, so that he could have that with him just in the event that family wouldn't be there to advocate for him. He is 74. He's in an environment where it's frightening. He's going into a medical procedure which is frightening so he's not going to remember all the things in my mind that he should to ask and advocate for himself.

A month ago he did go to the outside consultation. And again, I can testify that my father, who is 74, has difficulty ambulating. He can ambulate for short distances. He has to stop and get the circulation back in his legs with shackles, his hands, to his waist, down to his feet. And with the transportation, this trip to Napa, he has to take a letter that I specifically wrote for him to ask the questions what the risks and the benefits, he was told he couldn't take it. That he couldn't take anything with him.

So, he went. They transported him. It took two guards to transport him, shackled the entire trip. He got thrown a sack lunch and said, there's your lunch. At no point were his hands ever untied so that he could eat lunch, even for the examination he was not -- the chains were not unshackled. The doctor came in, took his shoes and socks off, which I guess they're transported with a thong type shoe. The socks and the thongs were taken off, the chains were not. He felt his ankles and felt his knees and asked for his medical records, and they didn't bring the medical records. He was transported to a medical appointment but none of the medical records were given to the correctional officer to take with him.

So, in essence there was nothing the doctor could do for him and the doctor told him, the surgeon said, you have a problem. There's nothing I can do for you. I need your records. I need the MRI, the x-ray. Those records -- these two correctional officers transport people on a daily basis to medical appointments. It just seems to me that because my father said, can I take this letter to ask medical questions, that should have triggered something to say, we need this gentleman's medical records.

Since then, the doctor had said, I'll get back to you in a week. That was a month ago. He's not heard anything. It took two months to get the supportive boots that he needed. The doctor at correctional medical center ordered a back brace. He still -- that's been three months. He has not received that.

I just, with things that have been said this morning, I can testify that with sick call, they are called out immediately. My father recently was sick and he didn't go to school, so they immediately sent someone down. He told them that he didn't feel well. They sent him to the doctor. The doctor said, yeah, sure. You have a flu type virus. He gave him medication. To this day he has not received that medication. This was probably two months ago.

With the current problems they don't -- he's written a doctor note to see the doctor to ask about the back brace, to ask when he'll go back to Napa. Those things don't happen.

You asked about where would families be released? That question. There's families and loved ones out there, and as I stated earlier in my testimony, we have insurance in place for my father. We've continued to pay for that. And he's got a home to come to.

I just want to end with the very frightening -- with what's going on with the elderly people. My father has a family to advocate for him. But it's difficult because you try and go one direction, and you get pointed to another direction and nothing ever gets completed.

Prior to going into -- being incarcerated, when my father was young he had surgery and he had a reaction to the anesthetic that he received, and it took ten people to hold him down. I have tried to state that to everyone that I know. I've written medical letters. I've told my father to tell everyone that if he should have a reaction to whatever he gets, that the anesthesiologist gives him -- my fears are, if he reacts and he starts acting violently, will he get beaten to death? Will he get shot? Will he get -- how will they prevent him from reacting to a medication?

With that, I think I want to end and I want to thank all of you for giving me the opportunity --

SENATOR VASCONCELLOS: Senator Presley, I'd like you and Mr. Pickett to be with this woman and figure out what's going on, where those medications are and make this thing coherent. This new health system sounds like it's a true story, a fraud. If the story is true, the system is a fraud. Do you want to respond to this now, Bob?

SENATOR PRESLEY: No, I think we'll get the information --

SENATOR VASCONCELLOS: Okay. All right. Thank you. Senator Romero.

SENATOR ROMERO: And if I may comment as well.

SENATOR VASCONCELLOS: I mean, there's a doctor here. Doctor, you've got a patient here I want you to talk before you go. Not here, but you know.

SENATOR ROMERO: It's my understanding as well too, in terms of looking at these transportation costs. That it's estimated that at times these costs to transport, in this case your father, can cost up to $1,000. And I think again too, that those are the questions we have to ask is, are we more safe when we hear about this kind of a story.

The other I'd like to as well too is, just this profile that has been put together with respect to aging women in prison. Again too, it's something that absolutely astounds me and I would once again say that under the auspices of the select committee and the correctional system, we are going to be holding a joint hearing with the Women's Caucus of the Legislature to specifically examine the conditions of women in our state prisons and we intend to focus, as well, on these cases.

MS. KAVRIK: Thank you so much, Senator. And if you would like any further information or data, I do have it.

SENATOR VASCONCELLOS: Okay. Thank you very much. Thanks, Bob. Now there are 11 more people signed up who want to testify. We have about 15 minutes left. Let me just say that at 1:00 we're supposed to terminate. I think we've got a pretty good fix on what the problem is, and so I want to let each of you come up and say -- I'll give you about a minute. But, you don't repeat what's already been said. I think we've got a pretty good grip on what's missing in the way of the system and any awareness or sensitivity. So come on up.

First, Cat Haynes, Allan Komarek, Karen Shain. Cat Haynes? Which one? Let's go. Let's move quickly please. Why don't you all come up and sit down and just start talking. Identify yourself and in a minute, just figure out what you most want to say that we haven't heard already.

MS. CAT HAYNES: Thank you. My name is Cat Haynes. And I'm here just to add a layman's perspective to looking at the aging population and those that have been incarcerated and are sick.

My husband is serving a 7 to life sentence, and I've been married to him for 28 years. He's been in prison almost 30 years, so I've practically grown up under the Department of Corrections.

When we began to serve time, rehabilitation was the norm at that time. So, you did your time; you bettered yourself; you came out into the community; and you contributed good behavior. Women had only

begun to work in the system as prison guards. Youth were just being reprimanded to the prison system at that time. I found it appalling then, I think it's appalling now.

And then came the 1980's, where it was crime and punishment. This was eight years into my husband's serving time and I said to him, if you do not get out of here you are going to be stuck in this system at the rate things are going.

I began to look at a picture of what was developing from my perspective as a woman visiting prison every weekend, which is still what I do today. And I guess the point that I'd like to make is that we were 21 and 22 when we came into this system. My husband will be 50 years old this year. One of the things that we need to look at is, who we are containing and why we are keeping people incarcerated who need to be out.

At this point, my husband was a passive participant. He's serving a 7 to life. There is no such thing as determinant sentencing. If it was determinant sentencing, he would not still be serving time without a date. He's disciplinary free. He has high blood pressure now. And one of the reasons why I'm here is, I'm looking at, you know, are we going to be looking at having to take advantage of new geriatrics resources in prison. Because at the rate that it's going, this is where he's going to be. And why? He needs to be among the population, he's done everything. He can't take anymore classes. He can't take school. He can't learn anymore trades. He's maxed out. He's at the pinnacle of prisonology. What is he still doing here? This is the population that we need to look at and we need to look at our governor and we need to look at the Board of Prison Terms.

We have people who are just bent on -- we don't need 34 and 33 prisons. When we came to prison there were only 11. And when you convince the public and the voters that they need prisons, then it's your political responsibility to make them stay filled. What are we going to look like with 10 and 15 empty prisons? We cannot. But you know what's going to happen? The profile and the image of the prisoners are going to change.

We have new prisoners now. They're in the corporate world. They wear suits. And we need to look at that and we need to look at the population. Prison is making us safe. Prison is making me safe. And we need to look at that population.

SENATOR ROMERO: Thank you, Ms. Haynes. Thank you, Ms. Haynes.

MS. HAYNES: Thank you.

SENATOR ROMERO: Mr. Komarek.

DR. ALLAN KOMAREK: Hello. My name is Dr. Komarek. I'm the executive director at Delano Regional Medical Center in Delano, California. We recently proposed to the Department of Corrections to build a free-standing long-term care unit for them, and are very interested in partnering with the Department of Corrections to provide long-term care. I think there's a place for private industry in helping with the solution that you have before you, especially long-term care for the elderly.

Delano has a history of being the first hospital in California to put in the sub-acute long-term care unit. We were the first hospital in California to do that. And we think that we can provide cost-efficient care for the state in a manner that will retain the dignity for the inmates and provide you with the solutions that you need for the future.

SENATOR ROMERO: Thank you. Karen Shain. I'm going to limit to one minute.

MS. KAREN SHAIN: My name is Karen Shain. I'm administrative director of Legal Services for Prisoners With Children. And we are one of those law firms that had one of your law suits. And, I'm just really here to beg you to look at this question in the broadest possible terms; to look at compassionate release; to look at what's happening with lifers; because we've now heard from several different representatives of the lifers. And, because we do visit women in the women's prisons, we've been in touch with many of the women that Gloria has talked about at CIW. Those women are also at the other women's prisons around the state.

And the problem with California prisons at this point is, that it reminds me more of the roach motel than anything else. These prisoners are all coming in and very few of them are getting out. And, it is a crisis. It's a crisis that affects the prisoners. It affects the families. It's affecting our entire communities. Thank you.

SENATOR ROMERO: Thank you. Cynthia Chandler.

MS. CYNTHIA CHANDLER: My name is Cynthia Chandler. I'm the co-director of an organization based out of Oakland, California called, Justice Now. I had wanted to -- actually, I should say over the past seven years I've had a primary focus in my legal practice of representing clients in compassionate release cases. And I've also made a practice of helping establish release plans for prisoners who are very seriously ill and also terminally ill.

It's shocking to me that with a budget sometimes of $150,000 that every year we are able to put together comprehensive plans for over 20 prisoners when this state, for some reason -- and including getting their benefits solidified, helping them get their ID's. Sometimes that money coming out of my own pocket. Somehow we were able to do that, but the state isn't.

I really wanted to offer a possible solution though, because I think we've heard a lot of problems. With Senator Romero's help and Lucy Armandaro's help, we were able to introduce a spot bill this legislative session to re-introduce a bill, Assembly Bill 675, from the 2001 legislative calendar, that would have expanded the compassionate release criteria to include people who are permanently physically incapacitated, and also expand the criteria to include people who are within one year of death. Obviously, there would be a risk assessment criteria as well. But it would also allow for certain procedural safeguards that could help streamline and facilitate prisoners in representing themselves and having advocates assist them.

We were unable to get an author for that bill, but it's something that we think is extremely important and potentially a very valuable solution. And it's something that we would encourage all of you to think of as something to approach in terms of budgetary issues as well.

SENATOR ROMERO: Thank you. Lanie Vamatter.

MS. LANIE VAMATTER: I represent Families of Prisoners, a prison advocacy organization, and Californians United for Justice, of which I'm an executive board member. I'm a former CDC officer. I saw from the inside how bad this situation is and it almost put me in a mental hospital, and I fought very hard for a year to regain my mental faculties and come back and fight back for those who can't fight back.

I'll start with the medical issues.

CMF. Oh yeah, they say they do these things. I happened to deal with dozens of people on a weekly basis who cannot get their medication. The cops want to play a game with it. I've got one young man with Hep C. His parents have had faxed over all of his medical records twice, and yet every time they send him a -- when he sends a docket to the doctor; he goes to the doctor; they don't have his medical records. He's dying. He's just one of the many.

My fiance, David, broke his leg. They took him in; they x-rayed him; they said, yeah, your leg is broken. Go back to your cell. He said, can I have some crutches. They said, we don't have any. I had to involve Dr. Vismara, who should have been here today, in the fight just to get him his crutches and to finally get his leg cast. Then they took it off too soon. He's still in pain with it. Then they kept him in an upper bunk.

Now, he is a term to life prisoner. He went in at 19 years-old on a murder conviction, on a drug related murder. Somebody ripped him off. He ran into them again. They got into a fight and somebody got killed. Unfortunately, that's life.

You're not safe. We're not safe. The whole country is not safe. You get shot sitting in your house. I felt safer working inside with a gun over me than I ever have anywhere else.

My David is not a threat to public safety. He's 43 years-old physically. He's older than I am, 58, emotionally, from just being in prison. At his age he would like just his program, go to work. This is what they would all like. But the new prisoners coming in have no respect. They don't understand respect. They're out to make a name for themselves and so they want to take on these older prisoners; cause a fight; they go back to the hole for it because they're not going to let this youngster murder them; and then the parole board, who rarely ever reads the file -- there are so many mistakes at every parole hearing that it is incredible -- it says, oh, you're not ready to go home even though there are psychiatric reports saying, this person is not dangerous. We don't ever need to see this person again. This is what I'm talking about. He's been in 26 years on a 7 to life.

SENATOR ROMERO: Thank you. C'Rene Dana.

MS. C'RENE DANA: Thank you. My husband and I contracted the POPS program in Washington at Georgetown University back in 1989 or 90. And it took about four years before we got a response back from them because they had so many applicants. At that time -- and a student attorney was assigned to my husband, Robert Dana -- you know Michael Evanetti was the student -- he went through the process of getting him qualified and interviewed and everything, and would have gone through the program except for the fact that AB 456, Assembly Bill, in 1999/2000 session, did not get approved. So we're anxious to get this program started again.

My husband has two herniated discs. He has mobility problems. He has corrective shoes. He is diabetic. He has high blood pressure.

I have a home. We own a home together. He can come home, and there's no reason for him not.

Some inmates are disabled by social security before they went in there. My husband was. All he has to do his present himself to a social security office when he gets out, and they will verify, that fact and his case will pick up with all the benefits that he's entitled to through that program, as well as Medicare.

And I guess that's about all I have to say, except that last September when there was a lockdown at CMF, that's where he is at, he laid in his cell for five days in excruciating pain on his bed, unable to get up, and nobody would come and help him. He had a -- I don't know if it's a herniated disc, or if it's the gallbladder that he just recently passed a stone in, in excruciating pain in that.

Thank you.

SENATOR ROMERO: Thank you. Judy Greenspan.

MS. JUDY GREENSPAN: Hi. My name is Judy Greenspan. I chair the HIV/Hepatitis C In Prison Committee of California Prison Focus. I'll make it very brief.

First of all, Senator, I just want to say, I want to thank you for having this hearing. It really is historic, and I hope that there are recommendations that come out of it and policy decisions that come out of it that change the face of prison today in California.

I think we've skirted around a couple of things today that I would urge you to consider for a future hearing. And that is the issue of parole. Because I think that there would be a tendency to -- and with all due respect to Professor Turley, who I have a lot of respect for over the years -- I don't think that California is parole happy. I don't think that that's the problem, and I think it's actually parole stingy, and it's a very haphazard parole problem.

When you still have thousands of prisoners in prison on 7 to life, you have to look at that system and say there's something wrong. They're not doing 15; they're not do 50 to life. Seven to life; they've been in for 30 years. Why? It's because the parole system has failed. It has shutdown. It's not letting people out. Those are the people getting old. Those are the people that are costing millions in medical care.

The other issue I just wanted to say, California Prison Focus, and I'm sure a lot of groups here do not want to see geriatric units in the prisons. We want to figure out a way to release the elderly prisoners back into the community as much as possible.

My great fear is that our prisons -- I mean, you go to any visiting room in a prison and I would urge you to do that. I've been to the California Medical Facility of Vacaville, or the California Institution for Women, and you already have an old age home. But you have, of course, an old age with bars and punishment and prisoners deteriorating due to lack of medical care. I don't want to create that system. I think we need to work together and figure out a way to release the prisoners back to the community. It's the only humane thing to do and it's certainly the only way to save taxpayers money.

And I would just urge you again, let's have some more hearings. Let us really go into depth in the parole. Let's find out what is behind the parole problem.

SENATOR ROMERO: And under the auspices of the Select Committee, we do have a hearing on parole coming up in a few months, so we'll keep you posted on that.

Patrick Delaney? Not here. Linda Roberts.

MS. LINDA ROBERTS: I'm representing Gray Panthers today, with Older Womens League. We put in a joint letter to the Legislature supporting the Legislative Analyst's proposals regarding early release. The money that was saved can be used to prevent cuts that will hurt elderly people. They're proposing to cut the senior ____ program, the foster grandparents program, Medi-Cal, durable medical needs. The same

venerable folks and families will be hit from many different cuts that are being proposed and we could save money by going along with the Legislative Analyst's suggestions in this realm.

Someone asked earlier about the differences between male and female prisoners. In your packet and the Stephanie Pfeifer Meadow News Service thing, there is a quote: "Female prisoners are at greater health risks," and I assume they mean then male prisoners -- for instance, cervical and breast cancer screenings, nutrition containing calcium and fresh vegetables. I attended a hearing on compassionate release for a woman dying of cervical cancer. If her cancer had been caught earlier, would she have been dying?

Ann Fagan Ginger of the Mickel John Institute has stated that the way we house female prisoners in this country violates the international law.

And I was very disturbed by what I hear the CDC thinks it's doing as far as medical care. An excellent book on this by Terry Cuppers is, *Prison Madness*. He describes mentally ill prisoners. And of course that percentage gets worse as you get older. Seeing a different psychiatrist once a month and only once a month, no one with mental illness can be treated effectively that way. We know of an elderly veteran who was able to walk with assisted devices, adaptive devices, they were not provided to him and he is now in a wheelchair. We are deteriorating people and making them more expensive to care for.

And it is also my understanding that they don't test for AIDS when you go in, so I think you should ask very clearly about that because we're getting the opposite description from people who have loved ones in.

We also get complaints about people being referred to a prison guard to be evaluated for psychiatric care.

So, again, I want to state that we very strongly support the Legislative Analyst's proposals on this issue.

SENATOR ROMERO: Thank you. Jamie Meyer.

MS. JAMIE MEYER: Yes. Good morning. I'm just going to validate what everybody has said since we're beginning to run out of time. However, I would like to add just a couple of things.

I had called Mr. Turley's office way back in 1990 after he had first opened the POPS program. My father went into prison at age 67 for a first time offender. And through the process it took me four years, but I did get him out. He was one of the last ones that was released on the compassionate release in 1994, which I think it ended in 1996, basically, of no one else being released on a compassionate release. But I was told at the time the reason that the POPS program wasn't here in California was that it was political and whoever didn't want to have the POPS program because California was for punishment, period.

The other thing that I'd like to mention is that I do in totality agree with the request for parole, or to look into the older inmates who are serving the 7, 15, and the 25 indeterminate sentences, which would include the life prisoners and the indeterminate sentencing prisoners.

And one other thing, we had turned in a report to you, Senator Romero, as of yesterday, along with Senator McPherson and John Vaconcellos. It should be at your office. And in that report we had found on the internet, through the CDC web page, as far as the recidivism rate and the percentages, what we saw on the net and what we took and pulled off of their information was that inmate population by age, the lowest percentile of the total prison population, the male ages 45 to 49 was 8.0 percent; age 50 to 54 was 4.3 percent; 55 to 59 was 2.9 percent; and 60 over was 1.6 percent. It also listed the population. And as far as the highest percentile, they were showing 20 to 24 in age was 22.1 percent. So that can be found on the website of the CDC.

Thank you.

UNIDENTIFIED: Excuse me. Can I add one minor thing?

SENATOR ROMERO: We've really go to leave the room. Susan Gary is our last speaker.

MS. SUSAN GARY: I can speak from right here. And I just wanted to say, my husband is serving a 7 year to life. He's been in for 22 years. During this time _____ that I'm an RN, and I'm able to speak to the CDC in Sacramento. I usually have to go above up to Sacramento.

But I've watched him endure a triple bypass. He was told he should have had five. So the state's going to ____ five if he survives. He had a stroke in 2001. He knew it was coming. He couldn't get seen fast enough, so he had a stroke and didn't receive the blood clot -- he qualified for that, but because _____. The stroke protocol is in place. He was given incorrect medication. He was strapped into his

bed on his paralyzed side. He's paralyzed on his right side and has severe _____ . And when he appeared before the board in 2002, he was told he was a threat to public safety. And I've watched him deteriorate. He's _____. But the fact that I'm an RN, I do know how to work within the bureaucracy in the system, and I will commend the Department of Corrections for implementing two things, ombudsman. The gentleman have been very helpful.

And number two, Kathleen Wallace, _____ has helped me tremendously. _____ medical. And again, 22 years _____.

SENATOR ROMERO: Thank you very much. Any final comments, Senator McPherson?

SENATOR MCPHERSON: No.

SENATOR ROMERO: Okay. Again, this brings to a conclusion, this hearing. I want to thank everybody for your presentation, your testimony. We will go back and take a look at this very carefully and hopefully move forward on this issue. For all who came, Professor, as well, thank you very much. And this hearing is now concluded. Thank you.

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Exhibit C

To: **John Hagar, Special Master**

From: **Terry Hill, MD**

Date: **January 24, 2005**

Re: **Long-term Care at Pelican Bay State Prison**

On October 14, 2004, I visited the Pelican Bay State Prison Correctional Treatment Center (PBSP CTC), traveling in the company of Joe Goldenson, MD, and Ron Shansky, MD. The Health Care Services staff members graciously made themselves available to me for interviews and for assistance in seeing the inmates. I spent the day observing on the CTC unit and interviewing medical services staff about care of the medical long-term care (LTC) inmates-patients.

The 20-bed PBSP CTC has two parallel hallways with a nursing station and other staff rooms occupying the central area, the inmate rooms on the outside. One hallway is predominantly psychiatric, the other predominantly medical. Inmates are housed one per cell. Opening the doors to get access to an inmate and provide care requires the assistance and presence of correctional officers. Staff members often communicate with inmates without opening the heavy doors. One room in the central area is multipurpose. It contains a cage large enough for an inmate to sit in while watching television or video. One hallway ends in a small concrete patio outside, where inmates occasionally spend time, either walking on their own or being rolled out in geri-chairs.

The CTC staff identified six inmates as medical LTC patients, one of whom was slated to be discharged from the CTC shortly. I was able to speak briefly with four. I observed focused physical exams of three, all of whom had residual effects of strokes, two of whom were bedbound.

I had brief interviews, 10-30 minutes each, with the health care manager/chief medical officer, the acting director of nursing, and direct care staff who were providing care to the medical LTC inmates, including a registered nurse, two internists, and psychiatrist. I interacted as well with another nurse and a psychiatric technician, both of whom were veteran staff on the CTC, and with the certified nursing assistant (CNA), who was in her second day on the job. I attended a meeting of the Long-Term Care Quality Improvement Team, which included most of the physicians and nurses mentioned above and several other staff members. I looked through several of the inmates' charts, one in a systematic fashion, the others only cursorily. I was given a copy of the Utilization Management Level of Care Assessment Tool (revision 8/30/03). Over the next two months I asked for, received, and reviewed various documents, including:

- The PBSP Health Care Services Administrative Manual
- The PBSP Health Care Services Continuous Quality Improvement Program
- The PBSP CTC Policy and Procedure Manual
- Medical records of the six inmates considered medical LTC, including care plans

Initial List of Concerns and Introduction to Findings

The staff freely identified issues related to meeting the care needs of the medical LTC inmates at PBSP. During my interviews and the team meeting, several problems were mentioned again and again, with universal consensus that they impaired the quality of care:

1. Inability to get appropriate equipment for medical LTC inmates in a timely fashion
2. Poorly organized, incomplete, and unavailable medical records
3. Barriers to transferring medical LTC inmates to other CDC sites, both because of the security level and point system and the lack of adequate beds for medical LTC inmates

Other problems were spontaneously identified by at least two staff members, and often more:

4. Lack of written policies and guidelines specific to common conditions of the medical LTC inmates
5. Inadequate teamwork among the direct care providers
6. Inadequate LTC experience among staff members
7. Disruptions in staff continuity
8. Difficulties in planning for and providing end-of-life care, particularly in respecting inmate and family preferences for interventions at end of life

There were differences in opinion as to whether there are adequate numbers of nursing staff in the CTC. While some people felt that staffing is adequate so long as there is a certified nursing assistant (CNA) from the registry present during each day shift, others felt that a CNA is needed during the evening shift as well, and there was some dispute as to whether the daytime staffing is adequate even with the CNA.

The registered nurse and physician on duty on the day of my visit both had substantial outside experience in LTC. The nurse, a former director of staff development in a nursing facility, had been at PBSP for 22 months. The physician, a former nursing facility medical director, had been at PBSP for 6 months. They both appeared to be informed, caring, and diligent. The psychiatrist had LTC experience as well and demonstrated a deep commitment to improving care. The talent and experience of the nursing and medical personnel were impressive. I do not know whether having staff with LTC experience was fortuitous or planned. Turnover appeared to be most problematic at the CNA level. The certified nursing assistant (CNA) was from the registry, had only a modicum of experience, and was working her second day at PBSP.

In spite of the staff's talent and commitment, my visit and my reviews of policies and medical records revealed deficits in several areas of care, particularly in the prevention of contractures, pressure ulcers, and pain. In the discussion that follows, I will use these deficits to illustrate a broader issue. PBSP lacks an adequate system of routine screening, assessment, and management for common LTC problems. The PBSP care plans, which should reflect this assessment and management process, are perfunctory, not individualized, and they do not capture the best work of the PBSP

clinicians. The CTC interdisciplinary team lacks input from several key disciplines and is functioning below its potential. The current documentation and quality improvement systems are inadequate to support good outcomes for medical LTC inmates. From my discussions with Drs. Goldenson, Shansky, and Kanan, it is clear that the lack of a reliable and efficient LTC system is characteristic of the CDC as a whole, not PBSP in particular.

Review of Policies and Procedures

For the ambulatory care clinic population, the PBSP Health Care Services Administrative Manual addresses chronic care conditions in admirable detail, including diabetes, asthma, cardiac disease, convulsive disorder, hypertension and chronic pulmonary disease. The CTC Policy and Procedures Manual, on the other hand, does not adequately address the needs of the medical LTC inmates.

There is no policy, for instance, addressing urinary incontinence assessment. There are separate policies for bladder irrigation (Nursing section 7), bladder training (section 8), and catheterization of the urinary tract (section 15), and urine specimen collection (section 89). These policies provide no guidance to nurses in assessing acute or chronic incontinence, and the policies are themselves seriously dated. The bladder training policy is an amalgam of interventions bearing little resemblance to federal guidelines first issued in 1992 or to any other guidelines in current use. It calls for clamping of the catheter “to stimulate bladder tone,” a procedure that is no longer recommended.

The policies related to pressure ulcers are similarly scattered (Nursing sections 22, 61, 81, and 92) and dated. They instruct nurses to “promote circulation to dependent areas with gentle massage.” Research in the 1970s and 1980s discredited this practice, and federal guidelines issued in 1992 explicitly counseled against it.

There are no policies addressing fall risk assessment and prevention apart from a brief and dated policy on side rails. The side rail P&P calls for use of side rails “anytime the patient is left unattended in bed.” This practice has been discredited as dangerous, and there are long-standing national initiatives to decrease side rail use.

There is only one policy addressing maintenance of function or prevention of contractures. It describes how one should do range-of-motion exercises, but it offers no guidance for assessing or documenting contractures. Oddly, it calls for wearing gloves and gown during range-of-motion exercises, a practice that is inappropriate in the absence of specific infection control justification.

There are no policies on palliative care or comfort care for dying inmates. The policy entitled “No Code, Do Not Resuscitate” is too brief and contradictory to be helpful. It acknowledges an inmate’s right to decline cardiopulmonary resuscitation but implies that an inmate doing so must have a terminal diagnosis, and it requires the physician to rewrite the “no code” order every 72 hours. It makes no mention of the right to refuse a ventilator or artificial nutrition. It makes no mention of advance care planning or statutory advance directives.

Review of Medical Records

A summary of four charts will reveal the hazards of not having reliable processes of care to address common LTC problems such as pain, pressure ulcers, contractures, and incontinence.

Inmate AA is a 68 year-old man with left-sided paralysis from a stroke, among other conditions. I am concerned that he is not on any stroke prevention medications, but here I will not focus on medication issues. The stroke resulted in a thalamic pain syndrome, a source of chronic pain that is particularly difficult to manage. Since his admission to the PBSP CTC on January 28, 2003, multiple clinicians have documented that pain lessens his ability and willingness to cooperate with physical therapy, with use of splints, and with skin care. On March 5, 2003, a pain specialist seeing him via telemedicine connection deemed telemedicine inappropriate for his evaluation and recommended in-person evaluation by a pain management physician. He eventually received an in-person evaluation on January 9, 2004, which concluded that his pain was "real, severe, unrelenting, and only minimally benefited from his current regimen."

For inmates with chronic pain, the Pain Assessment policy calls for nurses to record pain scores at least three times daily and to set a care plan goal using the patient's own desired comfort level on a 1-10 scale. There has been no meaningful implementation of that policy for inmate AA. His vital signs are documented almost every day in the 32 days from October 9 to November 12, 2004, but the pain score is documented only 9 times, each time with a score of 0 on a scale of 0-10. There is no comprehensive pain assessment form in the medical record, and the nursing notes describing his pain are uniformly perfunctory.

Care plans in LTC should be patient-specific and based on interdisciplinary assessment, with individualized interventions, realistic and measurable goals, monitoring, evaluation, and revision as needed. Title 22 §79627 (b)(1)(B) requires "Development of an individual, written patient care plan which specifies the care to be given, the objectives to be accomplished, and the professional discipline responsible for each element of care. Objectives shall be measurable and time-limited. Each inmate-patient's care shall be based on this plan."

Inmate AA's care plan has been documented on standard PBSP forms (7216, which had minor revisions 9/03). These 3-page forms appropriately have columns for the problem, the planned interventions, and the outcomes or goals, but the columns are largely filled with brief check-off items that are adequate for only the simplest of problems. Only 5 of the 13 problem areas on inmate AA's current care plan have any entries at all. The entire list of interventions is as follows: checks for hygiene assist and tub, air bed, "get pt up in Hoyer lift," "turn [every 2 hrs] while awake," diet "regular with supplemental peanut butter, "Vicodin/repositioning," and checks for information provided at appropriate level of cognitive function and behavior check every hour. The care plan does not do justice to the care that the clinicians are indeed providing for inmate AA, but it is also reflects the fact that their assessments and interventions have not been well thought out.

On February 3, 2003, one of inmate AA's physicians ordered physical therapy and left wrist bracing. The physical therapy evaluation that occurred a month later was fruitless because inmate AA screamed in pain with light touch. Physicians attempted to

get him a brace multiple times but failed. There is a reference in the chart to daily range of motion exercises, but there is no documentation of his actual range of motion and no way for anyone to discern whether he has lost range. Deficits in getting therapy services for AA have combined synergistically with failures to address his pain.

The care plan for inmate AA has "comfort care" written across the top, but it's not at all clear what that means. A box for full code blue is also checked on the care plan. The physician notes on September 12, 2004, document that he would not want attempts at cardiopulmonary resuscitation or life support, but there are no orders to that effect.

Inmate BB is a 52-year-old man with paralysis of his left side and right leg following a stroke in January 2002 who was admitted to the PBSP CTC on December 12, 2002. His order (Request for Services form) for physical therapy was on January 9, 2003; he was seen by physical therapy on February 27, 2003. His order for a foot brace was on March 3, 2003; he got the brace June 25, 2003. His order for speech therapy was February 18; he was seen by speech therapy April 8, 2003. Delays in the provision of rehabilitation services, evident as well in other charts I reviewed, are associated with unnecessary complications. Although contractures cannot all be prevented, neither are they inevitable. Failure to attempt prevention is not acceptable.

Inmate BB has had chronic skin breakdowns on his sacrum and buttocks. Physicians wrote multiple orders for an air mattress or air bed in 2003 and 2004. The air bed arrived in October 2004. The Decubitus Ulcer Care policy calls for completion of a Skin Profile Form at least weekly and for a written care plan for each decubitus. The medical record contains no forms documenting the appearance of the ulcers, and the documentation from both physicians and nurses is scant, with several good drawings by physicians. As with inmate AA, the chart reveals confusion about the staging of ulcers, with both physicians and nurses mistakenly using "stage I" to describe ulcers with skin breakdown. The care plan interventions consist only of a check-off for egg crate mattress, superceded by "air bed." As with inmate AA, the chart reveals little attention to pain management. Only one pain score, a zero, was recorded on the graphics sheets from November 14 to November 18, 2004, during which time he received 14 doses of Vicodin and 3 doses of Tylenol. There are no comprehensive pain assessments in the medical record. There is no assessment for incontinence in the medical record and no care plan for incontinence, although he wears a condom catheter.

His chronic skin breakdown is caused in part by habitual scratching with his right hand, which he then uses to rub his eye, contributing to chronic conjunctivitis. I observed this behavior and certainly agree that it poses a difficult challenge. Yet these behavioral problems are typical in LTC settings, and their management requires good interdisciplinary teamwork and iterative care plans, methodically implemented. Inmate BB's care plan makes no mention of the behavioral problem. It is limited to the check-off for potential skin breakdown, mentioned above, and "conjunctivitis," with a reference to antibiotic eye drops.

Inmate CC is a 61 year-old man whose complex history includes obstructive uropathy, severe mental illness, dementia, falls and fractures of right arm, and a left shoulder injury that resulted in left hand contractures. He was admitted to PBSP CTC on June 6, 2002, under care of the mental health service, then transferred to the medical service on October 1, 2002. The documentation of interdisciplinary teamwork was notably better while he was on the mental health service than after his transfer to the

medical service. Attempts in 2002 to get him a brace and occupational therapy for his left hand were not successful. Because he often complained about his left hand, physicians ordered baclofen, a muscle relaxant. Although the baclofen had a low probability of reducing his pain or contractures, no plan was made to evaluate its effectiveness, and it was continued at least into November 2004. There is one mention by a physician of offering him a washcloth to prevent the nails of his contracted left fingers from digging into his palm, "but he refused." On the day I saw him, his longish nails had indeed pressed deep into his palm, although not yet with skin breakdown. A review of all the care plans since his 2002 admission reveals only a single entry describing an intervention for his left hand, encouraging him to work his left hand with his right. While this intervention is reasonable to try, it does not suffice. There is no mention in the care plans of other interventions such as a brace or washcloth, and it is unclear whether he was asked more than once about the latter. As with inmates AA and BB, there is no routine documentation of his range of motion.

Yet another inmate, DD, experienced significant delays in getting physical therapy and a splint. None of these inmates received occupational therapy services at PBSP. None of them had any kind of splint or protective device in place on the day of my visit. None of the November 2004 care plans reviewed set goals for pain management. None of them addressed side rail use as required by PBSP policies.

There was no documentation of input from pharmacists in any of the charts I reviewed. Pharmacists in nursing facilities perform drug regimen reviews for all patients every month, a practice that has yielded large, well-documented benefits in quality and cost. On the other hand, there was excellent documentation of input from the registered dietitian. For inmates on the medical service, there were occasional excellent psychology notes written for disability "chrono" forms and the like, but there was no evidence of psychology or psychiatry input into the care planning process.

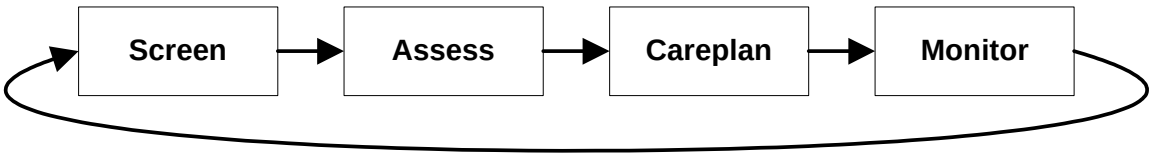
The clinical staff vigorously complained about the disorganization of medical records and the risk of poor care that results. They were speaking primarily about sections of the record getting stacked in the medical records department or elsewhere and being unavailable to the clinician. The charts lacked a functional problem list and a method for tracking health care maintenance, both of which are critical in meeting the needs of people with multiple chronic illnesses. Finally, I noted that the physicians must hand-write a patient's orders anew each month and that the nurses hand-write medication names, doses, and times in the medication administration record (MAR). The PBSP pharmacy software can generate a list of medications but not onto the order forms or MAR.

Discussion

In spite of the professional skills and motivation of the PBSP healthcare staff, current practices within the CTC are inadequate to manage the needs of medical LTC patients. Common LTC problems such as contractures, pressure sores, incontinence, falls, and pain are not being assessed and managed appropriately. I have documented that the CTC team lacks the necessary interdisciplinary input to prevent costly complications and prevent unnecessary disability in medical LTC patients. Additionally, LTC patients often present complex behavioral challenges that require interdisciplinary assessment followed by trials of care plan interventions carried out consistently by

multiple staff members over time. The problem noted above of habitual fecal contamination of an eye calls for a more complex intervention than occasional verbal pleas from staff, and the written care plan needs to reflect more than a checkbox labeled "conjunctivitis."

The need for interdisciplinary teamwork and planning jumps dramatically up several levels, from (1) episodic care of time-limited problems to (2) chronic care of problems such as hypertension and diabetes to (3) medical LTC problems to (4) medical LTC problems complicated by psychiatric or behavioral manifestations. Recognition of these levels has led to regulatory approaches in LTC setting which mandate interdisciplinary care planning. Skilled nursing facilities, adult day health settings, home health, and PACE programs (Program for All-Inclusive Care of the Elderly) are all required to document repeated efforts to screen for and manage common LTC problems, as illustrated here:



In licensed nursing facilities, for instance, nurses and other team members routinely complete the Minimum Data Set (MDS), which serves as an exhaustive screen for common problems. Completion of the MDS triggers appropriate resident assessment protocols (RAPs) that facilitate further assessment and care plan development. Although the standard MDS, RAPs, and care planning process (globally known as the Resident Assessment Instrument or RAI) does not guarantee appropriate care, it reduces the chances that problems such as contractures will be overlooked. The assessments that are triggered are often captured on standardized forms, thus facilitating the tracking of problems over time. Such tracking can prompt changes in treatment of pressure ulcers, for instance, when healing fails to progress.

The use of standardized screening and assessment instruments also makes possible the generation of aggregate quality data, which enable teams to compare themselves to others and which alert management to vulnerabilities in care which might require additional training, staff, or resources. The lack of such data at PBSP means that problems in managing pressure ulcers or contractures can persist unnoticed for long periods of time.

I was pleased that during the meeting of the Long-Term Care Quality Improvement Team (LTC QIT) on October 13, the communication was refreshingly frank and open. Staff members appeared to feel free to voice concerns. Administrative staff members were non-defensive, thoughtful, and concerned about any deficits in their ability to provide LTC services. The committee's agenda, however, does not appear to include reviews of clinical quality, and indeed, there does not appear to be a mechanism for systematically gathering clinical data for review.

Although I have pointed to staff knowledge deficits, e.g., with regard to pressure ulcers, the primary barriers to reliable care of medical LTC inmates appear to be in the organization of the clinicians' work and their resources, not in their clinical skills. The PBSP Continuous Quality Improvement Manual correctly states that the effectiveness of

the CQI program depends on cultural change within the organization, including increased respect for staff participation in CQI activities. I would extend this observation by stating that the clinicians need to see interdisciplinary teamwork and quality improvement as among their core functions, reflected in their job descriptions and performance reviews. The PBSP CTC has a strong physician presence. The physician progress notes are often repetitive, however. Some of the time that physicians spend doing frequent bedside rounds would be better spent participating in care planning and ensuring that the nursing staff and other disciplines can consistently carry out plans that are well-informed and coherent. The CTC clinicians that I met appeared to be fully supportive of interdisciplinary collaboration.

Relations between the CTC team and administration did not appear to be unduly strained. On the other hand, the ability of the PBSP Health Care Services leadership to secure resources was evidently limited. I described above a lag of 18 months or more in getting an appropriate bed for an inmate. In addition to being exasperated, most of the staff seemed genuinely confused as to the reason for the delay. Glaring denials of appropriate services, as in this case, can be deeply disheartening to healthcare professionals, discouraging their attempts to improve care, setting a culture of low expectations, and increasing the likelihood that good staff will leave.

I also heard several people allude to deep divisions and lack of communication between the healthcare staff and the correctional officers. I did not verify the accuracy of their statements, but this impression on the part of the clinical staff deserves attention. In some states, custodial officers working in the infirmary are handpicked or self-selected for that assignment, and they receive special training. At PBSP, clinicians described the correctional officers as accommodating in the sense of being willing to open cell doors and stand by, but not understanding of the inmates' medical conditions, not helpful beyond their stand-by duties, and sometimes obstructionist in arranging for appropriate care or placement.

The staff and administration also raised several problems with regard to moving inmates from the PBSP CTC when medically appropriate. PBSP is a level IV prison. Although there is a procedure for downgrading an inmate from a level IV security risk to a lower level, it depends on a rigid point system which does not take into account the actual risk posed by an inmate who might be completely disabled, for instance. There were divisions among the staff as to whether aggression from physically and cognitively impaired inmates should be managed behaviorally by the interdisciplinary team or through a formal judicial process which could increase the points in the security system.

Recommendations

The PBSP CTC was not developed for medical LTC inmates. Meeting the needs of these inmates, either at PBSP or in similar CDC settings, will require new program development, which must include adequate personnel and equipment, improved interdisciplinary teamwork, comprehensive care process redesign, training, provision of data-driven quality improvement, and leadership.

1. Personnel

The CTC team caring for medical LTC inmates should have timely and meaningful input from the following disciplines:

- Physical therapy, occupational therapy, and speech therapy. Routine evaluations should be available within a week of an order. Screening and evaluations should be available more urgently as needed for new admissions. Physical therapy and occupational therapy should assist the interdisciplinary team with screening on a quarterly basis. All three disciplines should be available as needed to instruct other team members and to assist with care planning, e.g., for falls, functional maintenance, and dysphagia.
- Pharmacy. Consultant pharmacists should provide written drug regimen reviews on all medical LTC inmates at least every two months, if not monthly, in order to ensure that inmates get needed medications, avoid unnecessary medications, avoid adverse drug reactions, and control pharmacy costs.
- Psychology. In addition to seeing inmates as needed for depression or mental illness, psychologists should provide evaluations of all medical LTC inmates with behavior problems, participate in interdisciplinary care planning, and assist team members with consistent implementation of care plans with revision. Medical LTC inmates with dementia should have evaluations by geropsychologists as needed.

PBSP should make every effort to secure and retain adequate CNAs. I was concerned that the CNA present on the day of my visit was from the registry and quite new to this assignment. Having CNAs who know the medical LTC inmates and contribute to the interdisciplinary team has enormous payoffs in quality and cost-effectiveness. In order for PBSP or any CTC to succeed in this regard, the CDC will have to create a job category for CNAs.

2. Interdisciplinary teamwork

The administration should provide interdisciplinary team training for the CTC team caring for medical LTC inmates, with skill-building as needed in meeting effectiveness and conflict resolution. Job descriptions and performance evaluations should include a focus on interdisciplinary participation. Physicians should be evaluated in how well they promote leadership among the other disciplines, particularly nursing, and effective team functioning. Physicians should provide an annual reassessment, which includes a review of all active problems and relevant past problems, including medication regimen, restraint use, decision-making capacity, and advance care planning.

3. Integration of expertise in common long-term care conditions

The prevention and management of pressure ulcers, incontinence, falls, functional loss, contractures, and pain, and the provision of advance care planning and palliative care present significant challenges in all long-term care settings. Off-the-shelf policies and guidelines are helpful but insufficient in themselves for achieving practice change. Some conditions, such as pressure ulcers, are inherently complex.

Others are challenging in part because of widespread but mistaken beliefs among healthcare professionals, such as the assumption that restraint use prevents injurious falls. The experience and creativity of experts are invaluable in getting teams to adopt new practices.

Access to experts can be obtained in multiple ways. One more formal way would be to hire geriatric nurse practitioners to serve as consultants within the CDC; a less formal way would be to develop relationships with vendors, such as pressure-relieving mattress/bed vendors, who can provide on-going education and consultations.

The cost of this expertise and its integration into practice should be seen in context. Management of a single stage III pressure ulcer has been estimated to cost $10,000. The cost of a stage IV ulcer or a single avoidable hospital admission, e.g., for hip fracture, far exceeds $10,000. The provision of advance care planning and appropriate palliative care can yield major savings in hospital admissions at the end of life.

Difficult behaviors of cognitively impaired inmates should be included in the list of common LTC problems requiring expertise, interdisciplinary teamwork, and disciplined implementation of care plans. Incidents involving medical LTC inmates should be reviewed by clinical staff before consideration of formal judicial processes.

4. Revision of policies and forms for LTC conditions

The integration of new staff, new levels of interdisciplinary teamwork and care planning, and new clinical practices will require an overhaul of current PBSP policies and forms. This revision should occur in the context of practice change, education, and quality improvement, with ongoing consultation from experts. Rewriting policies will not in itself lead to practice change. I have already noted that multiple current PBSP policies with reasonable care planning provisions, for instance, are not being followed. Policies and forms will need to be revised, tested on a small scale, and revised again. Standardized assessments and measures, consistent with research and national standards, should be used whenever possible.

5. A routine, systematic method for screening, assessing, care-planning, and monitoring common LTC conditions

Good care practices must be operationalized into a straightforward routine. In addition to condition-specific policies, there must be an efficient overall system for screening medical LTC inmates for common conditions and proceeding with assessments and care planning if needed. Care of these inmates cannot be reliably done even by the best of clinicians without workable checklists and prompts.

Care plans should reflect a comprehensive and coordinated assessment by the interdisciplinary team. The care plans should identify inmate needs and should include clearly defined problem statements, measurable individualized and realistic goals, specific interventions for meeting identified goals, identification of team members responsible for implementing the interventions, and expected dates for achievement of goals. Minor updates in care plans should be made “on the fly.” More comprehensive reviews should occur at least quarterly and annually, more

often for inmates with significant changes in condition or whose course is expected to change, e.g., during stroke recovery or during terminal decline.

6. Quality improvement for medical LTC

Quality data generated by the screening and assessment routines should be reviewed regularly by the IDT and administrative personnel.

Equally important, and crucial to successful integration of new expertise, policies, and staff, the CTC should learn to engage in meaningful quality improvement efforts. In particular, I would urge the quality improvement team to sponsor small-scale, rapid-cycle initiatives led by on-site clinical champions with assistance from outside experts as needed, trying out new processes with 1-2 staff members and no more than a few inmates for 1-2 weeks, followed by re-evaluation and repeated cycles until completion of the initiative.

7. Equipment and supplies

Medically necessary equipment and supplies must be available in timely fashion to promote healing and prevent complications. Provision of good products at reasonable cost requires expertise, discipline, and flexibility. For example, the market is flooded with dozens of pressure-relieving mattresses and beds and hundreds of wound care products. Current PBSP policy appears to include only three wound dressings: traditional gauze and two brand name products, OpSite and Duoderm. Such limitations are not conducive to good clinical or financial management. The expertise and purchasing authority needed in the skin care area are more likely to be found at the CDC level than at the local level.

8. Documentation and information system changes to support clinical care and quality improvement

Without waiting for implementation of electronic health records, the CTC should find a means to eliminate the need for physicians to hand-write orders each month and for nurses to hand-write the MAR. Errors are inevitable with such a system.

Consideration should also be given to creating a problem list form and a health care maintenance form, even if handwritten.

Finally, consideration should also be given to adopting a standardized instrument for screening and assessing medical LTC inmates. As noted in the discussion section above, in licensed nursing facilities the computerized MDS/RAI system provides a structure for this screening, assessing, and care planning, and it provides for generation of clinical data which can aggregated and tracked over time. At any point, questions raised about the aggregate data can be traced back to individual patients. Similar instruments are available in other settings such as adult day health, home health, and PACE. Portions of the MDS and RAPs system could be streamlined for efficient application in correctional settings in order to support sound care processes.

9. Collaboration between clinical staff and correctional staff

PBSP should seek ways to increase collaboration between the CTC clinical staff and the custodial officers assigned to the CTC. Education of non-clinical staff, about dementia, for instance, has yielded multiple benefits in LTC settings. Hand-picked or self-selected officers would be more likely to collaborate effectively with the interdisciplinary team in managing difficult LTC inmates and in advocating for the team's needs.

10. Organizational leadership

New program development to meet the needs of medical LTC inmates will require sustained, coordinated leadership at local and statewide levels. CDC leaders must have—and communicate—sufficient commitment to overcome the inevitable barriers and delays. Even getting adequate equipment can be a challenge within a public bureaucracy, and the difficulties of getting funding and approval for personnel positions, then filling those positions, are substantial. Yet a coherent system of care for these inmates will repay these efforts with significant efficiencies and far better clinical outcomes. CDC leaders will need to establish accountability for the steps of program development. With the implementation of standardized clinical measures, there will be a basis for evaluating clinical outcomes and resource use, providing a framework for accountability at every level.

Coda

I have pointed out that the reliable provision of good LTC can save money by avoiding unnecessary hospitalizations and other expenses. Be that as it may, one might question whether the resources necessary to develop and sustain an adequate PBSP medical LTC program are justified by the half-dozen LTC inmates there. Increasing the number of medical LTC patients would be limited by the need to keep some of the 20 CTC beds for mental health needs. Consolidation of CDC's medical LTC patients into a smaller number of settings would facilitate the development of cost-effective programs capable of meeting minimum standards.

Use of standardized assessment instruments and processes would facilitate the clustering of LTC inmates into specialized facilities and into specialized units within those facilities. Clinicians in medical and mental health LTC systems have developed specialized expertise in assessing an individual's needs and risks (for self and others). Although difficult and made with caution, such assessments routinely steer complex individuals into nursing facilities, neurobehavioral units, mental health facilities, specialized board-and-care homes, and other facilities. These clinical assessments would more effectively achieve this clustering than the security risk and point system that has kept some LTC patients at PBSP.

I have been impressed by the openness and commitment of the PBSP and CDC nurses and physicians I have met. I hope that these observations and recommendations will support their efforts to meet the needs of this growing LTC population.

Exhibit D

Lumetra
Brighter insights. Better healthcare.

Aging Inmates: Challenges for Healthcare and Custody

A Report for the California Department of Corrections and Rehabilitation

May 2006

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Table of Contents

1. Introduction 1

Older Inmates: The Impact of an Aging Inmate Population on the Correctional System 2

Demographic and Economic Imperatives for Change 3

Table 1. Numbers of Older Inmates 3

Figure 1. Projected Growth of Inmate Population Ages 55-59 and 60+ 3

Figure 2. Projected Growth of Aging Inmate Population by 5-Year Cohorts 4

Table 2. Off-site Hospital Costs July 2003 to December 2005 5

The Free World Context of System Redesign 5

2. Elder Care Services at California Medical Facility 8

3. The Long-Term Care and Elder Survey 11

Inmate Groups 12

Table 3. Inmate Characteristics 13

Table 4. Inmate Diagnoses 14

Introduction to Inmate Characteristics and Diagnoses 14

Activities of Daily Living and Mobility Impairments 16

Figure 3. Impairment in Activities of Daily Living 16

Figure 4. Characteristics of Sampled GP Inmates by Age Groups 17

Hearing/Vision Impairment 17

Falls 18

Urinary Incontinence 18

Cognitive Impairment 19

Female 55+ Inmates 19

Table 5. Characteristics of Male 55+ Inmates Compared With Female 55+ Inmates 20

Table 6. Diagnoses of Male 55+ Inmates Compared With Female 55+ Inmates 21

Risk Identification 22

Figure 5. Correctional Officer Assessment of Risk Reflects Impairments 23

Figure 6. *Armstrong* ADA Lists Are Incomplete Per Officer Data 24

Top Bunk Assignments 24

Medical Beds: OHU, CTC, GACH, SNF 24

Table 7. Numbers of Medical Beds, LTC Inmates per CDCR, and Inmates Surveyed 25

Table 8. Diagnoses in Medical Beds 26

Under-Recognition of Diagnoses in Medical Beds 26

Use of Datasets for Problem Identification: The Example of Pressure Sores 26

Lack of Geriatric Expertise 27

Levels of Care 28

Figure 7. Increasing Impairments in OHU, CTC, Hospital, and Hospice 28

Figure 8. Percentages With and Without ADL Impairment in Medical Beds 29

Figure 9. ADL Impairments in Free World Levels of Care 30

Overlap of Geriatric and Mental Health Conditions 31

Overlap of Chronic Care and Palliative Care 32
4. Integrated Care Management 34
Figure 10. Overlap of Chronic Conditions, Cognitive Impairment, and At Least 1 ADL 36
Figure 11. Overlap of Chronic Conditions, Cognitive Impairment, and 3-5 ADLs 37
5. Recommendations for CDCR Elder Care 39
Environmental Modifications 39
Care Coordination 39
Specialized Units and General Population Support 40
Programming for Aging Inmates 42
6. Recommendations for Organizational Change 43
Perceived Conflicts Between Custody and Healthcare 46
Quality Improvement and High Reliability 47
7. Placement Alternatives 49
8. Summary of Findings and Recommendations 50
Summary of Findings 50
Recommendations 51
Integrated Care Management Using a Continuum of Settings and Services 52
Interdisciplinary Teams and Expertise 52
Environmental and Program Modifications 53
Organizational Change 54
9. Appendix A: Sampling and Analytic Strategy 55
General Analytic Strategy 55
Clustering of Prisons 55
Gender and Facility Stratification 55
Table 9. CDCR Population *vs*. Sample Population by Gender and Facility 56
Age Stratification 56
Table 10. CDCR Population *vs*. Sample Population by Age Group 56
Table 11. Percent of Medical Charts Available for Review 57
10. Appendix B: Survey Instrument 58
11. Appendix C: Functional Impairments and Support 62
Basic and Instrumental Activities of Daily Living 62
Figure 12. Examples of Functional Assessment Domains 63
Informal and Formal Support in the Free World and Prison 63
Figure 13. Combinations of Informal and Formal Support 63
12. Appendix D: Relationship-Centered Care and Restorative Justice 65
Figure 14. Relationship-Centered Organizational Model 67
13. Appendix D: Lumetra Team Members 69
14. Appendix E: Acknowledgements 70
15. References 71

Introduction

In 1999 the California Department of Corrections, concerned about the escalating needs and costs of its aging prison population, produced an internal report, *Older Inmates: The Impact of an Aging Inmate Population on the Correctional System*.[1] The report explored utilization and costs; training needs for custody, parole, and healthcare staff; recruitment of professionals skilled in geriatrics; needs of female inmates; pre-release planning and community collaborations; and "visionary alternatives" to customary—and exorbitantly expensive—practices. The report called for changes (see box page 2) that are consistent with recommendations made repeatedly since the 1980s. They remain worthy of implementation.

Throughout the 1990s, other states, *e.g.*, Ohio,[2] Pennsylvania,[3] and Florida,[4] were testing innovations in healthcare, programming, housing, and release planning. There, as in California, the aging crisis in corrections has been primarily a consequence of changes in sentencing and parole policies. More people are going into prison for longer terms, and fewer people are getting out. Changes in drug laws and "deinstitutionalization" of the mentally ill have also contributed to the explosive growth of the older inmate population.[5]

In 2003 the California legislature began to give serious attention to California's aging inmate crisis,[6] as did the federal court in 2004. In late 2004 Dr. Renee Kanan, Acting Director of the Division of Correctional Health Care Services, asked one of us for help in planning and implementing programs to meet the needs of aging inmates. In May 2005 our team from Lumetra began a project to describe California's aging inmates, their needs, current gaps in meeting those needs, and recommendations for the future. Meanwhile, the California Medical Facility (CMF) Warden and Health Care Manager, Teresa Schwartz and Dr. Nadim Khoury, had begun a pilot project to develop a comprehensive elder care program at CMF, to be assisted as well by the Lumetra team.

This report will describe the Lumetra experience with the CMF pilot project and our survey findings on inmate needs, met and unmet. We will point out how other states are exploring alternatives to costly incarceration of aging inmates. We will recommend aggressive exploration of new housing models and programs for aging and disabled inmates. We will give extended attention to the financial and clinical lessons learned from the free world with regard to managed care, case management, and long-term care integration. Redesign of services to meet chronic care needs, rather than relying on a "sick call" model, is now a fiscal and quality imperative for the Division of Correctional Health Care Services. We will offer suggestions for achieving organizational change through custody and healthcare collaboration.

From changes recommended in:

Older Inmates: The Impact of an Aging Inmate Population on the Correctional System

California Department of Corrections, 1999

Physical plant: Grab bars in cells, showers and toilet areas; elevated toilet seats; stools or benches in showers and bathtubs; hand rails on walkways; bottom steps painted a darker and/or reflective color for better contrast; elevators or other lifts for second story access; compensation for decreased ability to control body temperature and increased risk for hypothermia, especially for mentally ill older offenders; greater access to toilet facilities; large lettered signage; accommodations in the general population for inmates who are oxygen dependent but who do not need medical housing; environmental modifications and/or totally separate housing for inmates with [Alzheimer's] and other dementias.

Programming: Activities to keep the inmate mentally and physically active as a means to delay onset of costly medical care; programming which takes into account the limited capabilities (lifting, standing for long periods, diminished eye sight and coordination, etc.) of some older inmates; programming geared specifically for the elderly.

Custody Staff: Training for correctional officers in dealing with an aging population, especially in dealing with inmates with [Alzheimer's] and other dementias; awareness of the impact of hearing loss, brittle bones, poor eyesight, slower response time and reflexes, instability in walking and standing, need for more frequent access to toilets; need for more Correctional Counselors with lighter caseloads, and/or Discharge Planners to assist in meeting the needs of the older offenders.

Operations: Development of policies which take into account the difficulty in controlling body temperature and need for more blankets or heavier clothing in winter months as well as lighter or heavier clothing in warmer months; the need for toothbrushes with larger, easier to grip handles, for shoes with non-slip soles, shirts with Velcro instead of buttons, and shoes with Velcro instead of laces. Awareness of, and compensation for, difficulty in maintaining personal hygiene and need for assistance with Activities of Daily Living (ADL). The need for assistance in making funeral arrangements, writing "Living Wills" and "Do Not Resuscitate" (DNR) orders. Development of alternative housing arrangements (clustered, disbursed, or a combination; hospice, skilled nursing, convalescent, sheltered living) and transportation policies, especially the need for frequent "rest" stops; standardized procedures for transporting older parolees with medical problems; accommodation in the general population for oxygen dependent inmates who do not require medical housing.

Food Services: ...Awareness of the different nutritional, vitamin and minerals needs of the elderly; awareness that the elderly may be unstable in gait, weak, and lack the coordination to stand in food lines with able bodied inmates, may be unable to carry full food trays to tables and may require a longer time to eat and/or feeding assistance....

Parole: Potential need to parole into a nursing home or board and care facility; need to enroll in Medi-Cal program for access to health care; linkages to Adult Day Care and Adult Day Health Care Centers; unlikelihood of employability and the resultant need for living expenses; awareness of existing or planned funeral arrangements and living wills; the need to train Parole Agents on the Older Americans Act and the availability of community-based services for older parolees.

Demographic and Economic Imperatives for Change

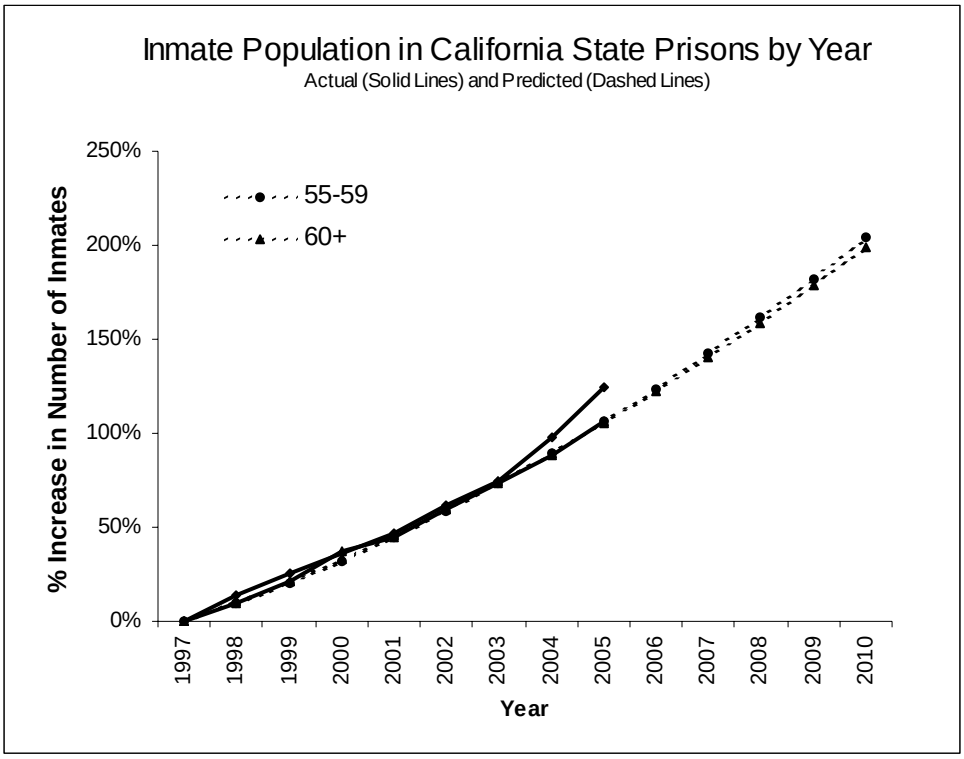
The numbers of California prison inmates age 55-59 and age 60 and over more than doubled in eight-year period from 1997 to 2005 (see Table 1).[7]

Table 1. Numbers of Older Inmates

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total	155,276	159,563	160,687	160,655	157,096	159,654	155,722	163,364	168,055
55 - 59	2,143	2,428	2,692	2,909	3,140	3,462	3,735	4,232	4,811
60 and over	1,781	1,951	2,177	2,445	2,581	2,855	3,097	3,373	3,699
60 - 64		1,073	1,220	1,393	1,447	1,603			
65 -69		514	573	613	647	697			
70 and over		364	384	441	487	555			

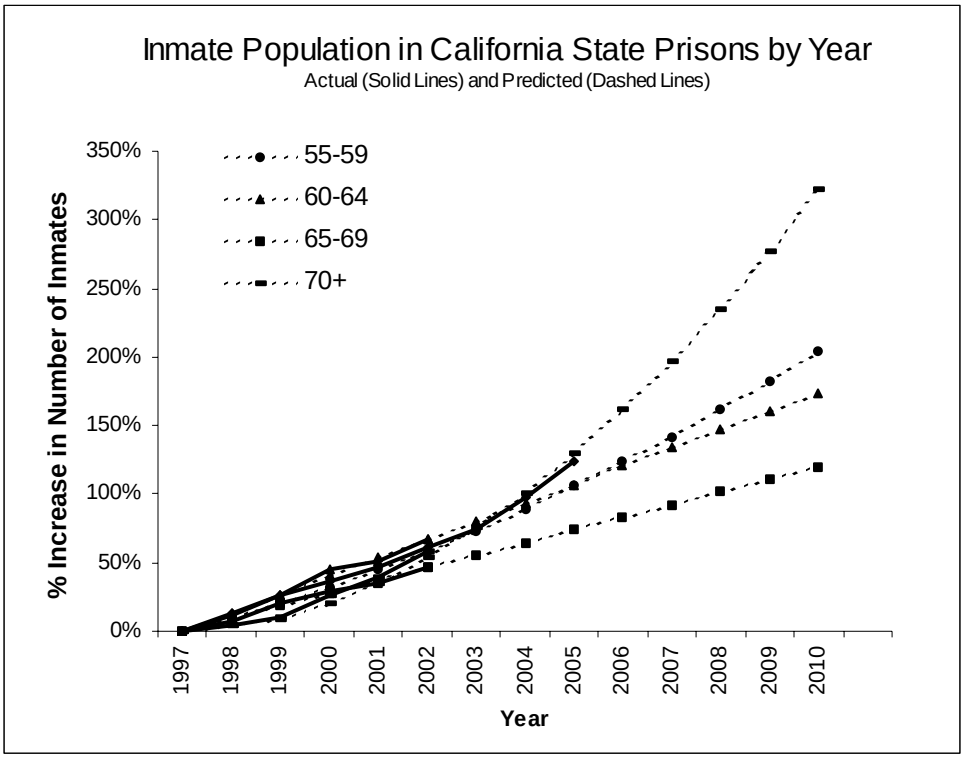
Based on 1997-2005 data, these numbers will double again by 2010 (see Figure 1).

Figure 1. Projected Growth of Inmate Population Ages 55-59 and 60+



The CDCR was unable to generate the sizes of the 60-64, 65-69, and 70+ cohorts for 2003-2005, but based on the 1998-2002 data, the number of inmates age 70+ will more than triple by 2010 (see Figure 2).

Figure 2. Projected Growth of Aging Inmate Population by 5-Year Cohorts



Prior research efforts to make precise predictions about the aging inmate population growth and associated cost increases have had very limited success,[8,9] in part because state prison systems do not track utilization and cost data as enthusiastically as Medicare or private insurance companies. California is no exception.

Overall, we know that California prison healthcare costs have been rising more than 10% per year,[10] compared with 7% annual increases for California's Medi-Cal program[11] and 6-8% annual increases for Medicare.[12] State correctional systems can easily track pharmacy costs and "outside," off-site healthcare costs, *e.g.*, admissions to community hospitals, but find it much harder to track their internal clinic care and hospital costs. One study found that costs were lower in states that used infirmaries as a substitute for prison system hospitals.[13] There are reports that utilization and costs increase with age, but these reports primarily use off-site cost data.[14] Most states estimate that healthcare for an older inmate costs three times that of a younger inmate.[15,16] There are no good data on the cost of the custody component of healthcare, *e.g.*, correctional officers guarding inmates in prison clinics, during transport, or in outside hospitals. There are no published analyses on the costs of prison healthcare litigation, in spite of its enormous financial impact.

The only cost information we could obtain comparing younger and older California inmates was for off-site hospital costs (inmates sent to non-CDCR community hospitals).[17] The group age 55 and older is about 5% of the population but accounts for 22.4% of the off-site hospital admission costs (see Table 2). California off-site hospital cost per admission are 35% higher for inmates 55+ than for younger inmates. The cost per admission for the subset of inmates age 70+ is 61% higher than for inmates age <55. We were not able to obtain data by age for any other inmate healthcare costs or healthcare-associated custody costs. In the Medicare population age 65+, hospital costs account for 31% of healthcare expenditures.[18]

Table 2. Off-site Hospital Costs July 2003 to December 2005

Age	% of Population	Total Hospital Costs[a]	% of Total Costs	Cost/Admission
<55	95%	$266,425,758	77.6%	19,834
55+	5%	$ 76,851,731	22.4%	26,747

The Free World Context of System Redesign

In 2004 the Corrections Independent Review Panel, led by former Governor Deukmejian, described "a correctional system in need of fundamental change."[19] California has not challenged a federal court receivership imposed because of healthcare quality shortcomings.[20] In this report we will describe serious healthcare inadequacies. It is important to place our cost and quality concerns in the context of the critique and redesign of American healthcare in general. For both corrections and the free world, what we need is honest clarity—not finger pointing—in order to find our way forward.

In 2001 the Institute of Medicine (IOM) began its seminal report, *Crossing the Quality Chasm*, "The American health care delivery system is in need of fundamental change."[21] Healthcare even for people of means is fragmentary, inconsistent, and unsafe. Americans get care consistent with guideline standards about half the time.[22] For poor and/or minority populations, access is limited, quality uneven, and outcomes inferior. *Crossing the Quality Chasm* and prior IOM reports[23] marked a turn to system transparency and honest critique.

Crossing the Quality Chasm also outlined a conceptual framework for system redesign. The Centers for Medicare and Medicaid Services (CMS), the Agency for Healthcare Research and Quality (AHRQ), the National Quality Forum (NQF), and the leading private healthcare organizations and professional associations have since adopted this framework. The IOM described six aims: healthcare should be safe, effective, patient-centered, timely, efficient, and equitable. The IOM also endorsed six strategies for change:

- Redesign of care processes based on best practices
- Use of information technologies to improve access to clinical information and support clinical decision making
- Knowledge and skills management
- Development of effective teams
- Coordination of care across patient conditions, services, and settings over time
- Incorporation of performance and outcome measurements for improvement and accountability

The IOM found evidence that these strategies could transform delivery systems. In the 1990s, for example, the Veterans Health Administration used integrated, system-level strategies to move from a culture of low expectations to performance far exceeding the national average.[24,25] Isolated interventions, such as educating or replacing groups of physicians or nurses, or even implementing a chronic care program, would not have yielded the same progress.

Studies of the Medicare population are driving the need for change. A 2005 Commonwealth Fund quality report[26] introduces its negative findings as follows:

[a] Community hospital cases (discharges) were only counted if a cost for the stay was reported. Costs were reported for over 99% of FY 2003-2004 and FY2004-2005 and 84% of FY 2005-2006 cases.

> *In one pilot study, the quality of care delivered to vulnerable elderly—those at high risk of declines in health—met expert standards only a little more than half the time. The greatest gaps occurred in the care of geriatric conditions, such as screening and management of falls and urinary incontinence. Among elderly adults in 2000, one-half had not received a colorectal cancer screening test as recommended. Similarly in 2000, only one-half of elderly women had ever talked to their doctor about osteoporosis.... Only one-quarter of elderly adults whom researchers determined had high blood pressure had it under control during 1999–2000. Likewise, only 18 percent of those that researchers determined had high cholesterol had it controlled. Less than one-third of depressed elderly patients in one study received potentially effective treatment during 1999–2001. Only 60 percent of Medicare managed care plan members hospitalized for mental illness in 2003 received recommended follow-up care within one month of leaving the hospital.... Among those who died of a chronic condition in 2000 and received care at the end of life, 15 percent to 50 percent of their family members expressed concerns about some aspects of the care delivered at the end of life.*

Happily, the Commonwealth Fund report goes on to highlight exemplary interventions to improve care. Quality improvement initiatives based on system redesign are beginning to bear fruit.[27]

Rising costs join quality concerns in driving system improvements. Spending by the federal, state, and private sectors continues to outpace inflation. The healthcare share of the gross domestic product will grow from 16% in 2004 to an estimated 20% in 2015.[28] Population management strategies remain our best bet to improve quality and control costs.[29] Identification of "high utilizers," people who consume or may soon consume more resources, is critical to both improving quality and reducing costs. In the Medicare population, for instance, 25% of patients generate 85% of expenditures.[30]

Population management includes two approaches to cost and quality, sometimes referred to a medical *vs*. social models. Developed along separate tracks throughout the 1990s, the two approaches have begun to overlap, particularly in comprehensive systems that are fiscally responsible for both healthcare delivery and community-based services.

- Chronic disease management has often used a single-disease focus, e.g., diabetes, cardiac conditions, or asthma, in ambulatory care settings. The CDCR Plata chronic care program illustrates this option and represents a vast improvement over sick call for chronic conditions. Free world population management has begun to recognize that chronically ill patients tend to have multiple illnesses, however, and that single-disease, formulaic approaches may have limited impact.
- Community-based long-term care integration targets a more complex population with an array of services ranging from case management and personal care services to domiciliary care or nursing home care. Long-term care integration prioritizes keeping people at the lowest level of care that can meet their needs. Potential benefits include increased patient satisfaction, quality, and cost savings.

Both approaches depend on some combination of patient self-management and informal support. In correctional settings, the range of options for self-management is limited, and there is no family to offer informal support. Other inmates, correctional officers, and/or healthcare staff must fill in to meet the needs of impaired inmates (see further discussion in Appendix C). Correctional officers have a unique perspective that served as the basis for much of the information we collected in this survey.

Underlying both approaches is case management or care coordination. This report will argue strongly for a comprehensive and cost-effective care coordination system. We will also discuss the other IOM strategies for change, including redesign of care processes based on best practices, knowledge and skills management, and development of effective teams. Essential, but not a focus here, will be use of information technologies and development of performance measurements. Finally, we will discuss the importance of collaborative leadership of custody and healthcare in developing a common vocabulary and approach to organizational transformation.

Five years after the 2001 IOM report, American healthcare is not yet getting passing grades. But there has been progress, and there is broad consensus on the organizational strategies for change. Correctional healthcare had best heed the lessons learned, rather than repeat the costly mistakes of 20th century American healthcare delivery.

Elder Care Services at California Medical Facility

As the CDCR's only prison with a healthcare-specific mission, California Medical Facility (CMF) has extensive medical and psychiatric services, including acute care, intermediate care, hospice, and a broad range of outpatient clinics. "Our mission is to provide evaluation and treatment of the medically ill or mentally disordered inmate in a safe, secure, well-maintained, therapeutic, and self-enhancing environment, while maintaining security and the control of individuals who have been determined to be a danger to self or the people of California… through an integrated, multidisciplinary approach."[31] Even so, before 2005 CMF had claimed no geriatric expertise and managed no units focused on aging inmates.

In early 2005 CMF began its Elder Care Program in earnest. Warden Teresa Schwartz made site visits to two of the country's model programs, Hocking Correctional Facility in Ohio and Laurel Highlands in Pennsylvania. She and the Health Care Manager, Dr. Nadim Khoury, commissioned an Elder Care Committee with broad representation from custody and healthcare departments, including plant operations, business services, procurement, education, pastoral care, peer education, fire, and inmate assignment. They envisioned "a continuum of care dependent upon the individual patient physical and mental needs at any given time. This continuum would consist of: assistance and medical management within the general population; special housing in an assisted living environment; inpatient long-term care and hospice care."[32]

The committee acknowledged concerns about victimization of elderly inmates. They also acknowledged the need for functional assessment at reception to identify physical, mental, or emotional disabilities and behaviors:

> *There are a number of conditions that require special accommodation, including mobility impairment, sensori-neural impairment, chronic illness, mental illness, and terminal illness. Many conditions also occur as are part of the normal aging process; this may include sleep disturbances, incontinence, mental confusion, and gastrointestinal disorders. Several of these conditions require cell modifications that may include wider doors for wheelchair access, grab bars around toilets and in the shower, a sink and toilet of the appropriate height, a shower chair, etc. In nearly all instances, special programs are required to meet the needs of this diverse patient population. Of critical importance is the requirement that all of these patients be tracked and their chronic conditions clinically monitored by specially trained healthcare staff.*[33]

The Elder Care Committee discussed issues such as distance to dining hall and availability of meals on elder housing unit; inmate support groups; exercise, horticulture, and recreation programs; and modified work programs, including availability of work assignments on the unit and a retirement program. They recognized that program development would require designation of new housing and recreational space, architectural modifications, policies and procedures, clinical screening and assessment tools, equipment and supplies, and appropriate staffing and training. They envisioned expansion of the Inmate Helper Program, pioneered by the Hospice Care Service, so that personal care attendants would be available on the congregate elder housing unit.

The CMF peer counselors made a significant contribution by creating an Inmate Preferences Survey, administered to about 100 older inmates, about housing, yard, recreation, programming, and meals. Findings included the following:

> *Most people wanted the autonomy of a single cell as well as the security of a unit dedicated to those who live there. Dorms were not that popular due to privacy concerns. A few people*

> *expressed interest in double celling for companionship, as well as being able to provide help for each other while dealing with the physical realities of getting older in prison. Being segregated from the mainline was viewed as punitive if mandatory.... Although segregated vs integrated were split evenly, most people wanted the option to choose. The main reason being, that is where they can see old friends and maintain relationships.... Having the option to retire was popular. However, mandatory retirement was viewed as punitive. Some of the main reasons to keep working were to be able to earn money and stay active and productive.... For the most part, being able to work in the unit, at jobs for the unit, e.g., porter, laundry, food service, unit clerk, etc, would be preferred. People expressed a real desire to be useful to those around them.*[34]

In September 2005 CMF opened a new 21-bed long-term care unit, converting unused acute hospital beds to Correctional Treatment Center (CTC) status. The rapid conversion depended on heroically-paced preparation by CMF staff and cooperation from the CA Department of Health Services Licensing and Certification Division. Unit modifications included development of a well-appointed activity room. The first patients were inmates from Pelican Bay State Prison (PBSP). PBSP had been a focus of federal court concerns, yet its isolation made it a poor candidate for long-term care program development.

CMF contracted with a nurse practitioner to lead policy development and serve as the unit's lead primary care provider. CMF's excellent social work and physical therapy staff contributed time to the unit. Nurse staffing, which had been largely registry, began to improve after salary increases in December 2005. Securing geropsychology services has been more difficult. Clinical pharmacy input on individual inmates has been unavailable because of a 75% vacancy rate in pharmacy. No recreation therapist is available. The CDCR as yet has no classification for certified nursing assistants (CNAs), but CMF has contracted for registry CNA services.

The Lumetra team, primarily Gail Cobe, MSN, RN, and Terry Hill, MD, provided periodic education and training on a variety of topics, including regulatory requirements and nursing documentation; dementia and psychosis in elderly; pain assessment and documentation; interdisciplinary team training; falls and restraint reduction; staff safety during transfers; and restorative care. Nursing leadership and staff members were very enthusiastic about the training, which at times also targeted physicians, phlebotomists, and correctional officers.

Support from custody was critical. Custody provided ideas, resources, policy, and support for the new program, and the warden occasionally came to the unit to make widely-noted interventions with individual inmates. Such actions speak volumes.

All individuals and departments have not been equally supportive or able to contribute. As suggested above, pharmacy does not have the resources to provide drug regimen reviews, which are essential in reducing the risk of harm in older patients. Implementation of the Vista computerized order entry module began last fall but stalled due to lack of resources, so physicians and nurses are still handwriting medications and dosages each month, a process guaranteed to create medication errors. In other departments, supervision and accountability difficulties have at times frustrated the new unit's ability to create reliable care processes.

The unit has begun to acquire the equipment necessary for care of this population. It now has its first "low-low" bed, which folds nearly to the floor to reduce the risk of injury in fall-prone patients. Getting Hoyer lifts to work in the tiny cells has been a challenge. Getting even modest equipment and supplies, *e.g.*, raised toilet seats, gait belts, and a camera to photograph pressure sores, can involve either budgetary or security barriers.

Here, as elsewhere,[35] new program development encounters barriers. The IOM's 2004 report on nursing and patient safety noted, "New practices often initially undermine existing routines and competencies and require ongoing learning adjustment, redesign of the change, and supportive efforts to capture the intended benefits of the innovation. Ongoing monitoring, feedback, and redesign are needed to create and sustain effective change."[36] Two examples will illustrate the typical vicissitudes:

- At CMF the specialists in clinic write orders in outpatient charts for inmates in the long-term care unit, but the outpatient charts are neither integrated with nor sent back with the inpatient charts. The inpatient team thus lacks easy access to clinic notes and orders.
- Long-term care teams need behavioral health competencies, but mental health teams operate separately from medical teams in the CDCR. The new long-term care unit does not have a dedicated psychiatrist or behavioral health professional, *e.g.*, a geriatrics-trained neuropsychologist or advanced practice psychiatric nurse.

Pain management is complicated at CMF and throughout the CDCR by the high prevalence of substance abuse, the lack of specialized expertise, inmate-physician distrust, and the inmate complaint procedure. Physicians who set appropriate limits can trigger complaints and come under scrutiny. The lack of continuity and team-based care allows inmates to "doctor-hop" in search of pain medication. On the other hand, as we will discuss later, physicians often fail to recognize and address chronic pain, which plagues up to half of free-world community-dwelling elders. Chronic pain is even more common in nursing home residents and is under-treated in 45-80%.[37]

Progress on the long-term care CTC unit has been nothing short of miraculous. Unfortunately there are no metrics in place to demonstrate improvements in quality or relative cost savings. Program implementation for assisted living and for congregate housing is also underway on other units. But new program development is difficult in any setting, particularly in a resource-challenged prison with traditional interdepartmental divisions. Because CMF does not have in-house experience operating nursing facilities and assisted living units, it will continue to need expertise and guidance. Implementing new clinical tools and processes involves a process of analysis and adaptation and a set of technical and political skills that even superb clinicians may lack. CMF still needs appropriate screening and assessment tools and procedures, for instance, which could be piloted there and disseminated statewide. The instrument used in the Lumetra survey could serve as the basis for such screening, but implementation will involve multiple stakeholders. Without good screening and assessment tools, decisions about transfers of impaired inmates between prisons will continue to be haphazard.

Further progress at CMF will depend upon continued support not only from its own custody and healthcare leadership, but also from the leadership of the CDCR and other state agencies.

The Long-Term Care and Elder Survey

To assist with program planning for aging inmates across the entire CDCR, we needed sound information on the inmates' diagnoses, function, and needs. The CDCR healthcare leadership also asked us to assess its current practices and capacities, with particular attention to gaps in quality and to level-of-care issues.

In order to characterize the CDCR aging inmate population, the Lumetra team gathered information on approximately 10% of the 55-and-older inmates at each of 11 prisons,[a] regardless of their level of care. (See Appendix A for details of the sampling strategy, age/gender stratification, and weighting.) At each of the 11 prisons, the Lumetra team also collected data on inmates who were in the facility's General Acute Care Hospital (GACH), Correctional Treatment Center (CTC), Outpatient Housing Unit (OHU), or Skilled Nursing Facility (SNF) and who might be considered long-term care (LTC) for medical reasons. We refer to these inmates as being in "medical beds," in distinction to mental health crisis beds (MHCBs).[b] We refer to all other inmates in our survey as being in the general population (GP), which includes Enhanced Outpatient Program (EOP) units and special care yards.

Our goals in developing the survey instrument were to get the information needed and to pilot-test questions that might be incorporated into routine CDCR screening procedures. Where possible, we used standardized questions so that our data would be comparable with datasets used in both community-based and institutional long-term care.[c] Those datasets vary in scope but include at least five questions about activities of daily living (bathing, eating, dressing, toileting and transferring, *e.g.*, in/out of bed or chair), as well as questions about mobility. The questions vary in wording, in part based on whether information comes from the person/patient or from a proxy (family member or professional caregiver, etc.). We chose to get proxy information from nurses and correctional officers, and we drew questions from the Minimum Data Set (MDS), used universally in nursing homes, whenever possible (see Appendices B and C).

We initially thought we could get information from physicians and nurses familiar with the GP inmates, but we overestimated both the stability of physicians and nurses in the clinics and their familiarity with the older inmates. A lieutenant at CMF pointed out that we could get most of the functional status, needs and safety information needed on GP inmates from correctional officers, who tend to have stable assignments. This strategy worked.

Our visits occurred in August through October 2005. A memo from John Dovey, Director of the Division of Adult Institutions, and Dr. Renee Kanan, Acting Director of the Division of Correctional Health Care Services, facilitated our access. Usually a healthcare staff member and two correctional officers assisted us. Typically three of us would visit: Dr. Terry Hill, Dr. Brie Williams and Ms. Karla Lindquist. Dr. Williams and Ms. Lindquist would visit the yards, each accompanied by a custody chaperone, and gather information from correctional officers about each inmate on the sample list.

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[a] AVE, CCWF, CIM, CMC, CMF, COR, MCSP, RJD, SATF, SQ, and SVSP. For full names see Appendix A.

[b] All 10 men's prisons have a GACH, CTC, or OHU. The women's prison (CCWF) has a SNF. We included the hospice unit at CMF. We did not gather information on inmates who were in these settings for simple short-term medical reasons, e.g., a jaw fracture, nor on the minority of inmates in GACHs who indeed seemed to merit acute-level care, nor on the inmates who were there only for mental health crisis. We did include inmates who were in MHCBs if they had dementia or another medical diagnosis consistent with medical long-term care. Decisions to include or exclude were made rough-cut and quickly by one of the Lumetra physicians and a CDCR nurse.

[c] For example, National Health Interview Survey, Medicare Current Beneficiary Survey, National Long Term Care Survey, National Nursing Home Survey, described at www.agingstats.gov/chartbook2000/datasources.html.

Dr. Hill would visit the GACH, CTC, or OHU and gather information from nursing staff and inpatient charts. In all but the largest prisons we completed these tasks within three hours, then reconvened in the afternoons to review the outpatient charts of our sample, focusing primarily on diagnoses. The medical records staffs were quite helpful. When occasionally the charts were not ready beforehand, they were ready by the afternoon. At all 11 prisons, 444 of the outpatient charts (69%, range 35-85%) were available (see Appendix A for details).

The survey instrument performed well overall. Our success in gathering information from correctional officers is particularly promising. We took our sample list from yard to yard and asked correctional officers whether they could answer questions about the sampled inmates on their housing unit. If the correctional officers said they knew an inmate "very well" or "a little," then we completed a 2-3 minute questionnaire. If the regularly-assigned officer was not available or not familiar with the inmate, we skipped that inmate. The correctional officers gave confident answers regarding inmates' ADLs and mobility for a majority of the inmates. They were less comfortable commenting on apparent cognitive status. We did not ask them about diagnoses, since they are not part of the healthcare team and are not privy to the medical charts. Officers often referred to *Armstrong* ADA lists to confirm answers to questions about mobility aids or hearing and vision impairment.

When our chaperones were well-known and respected custody staff, as was usually the case, we had satisfying, often enthusiastic, interactions with correctional officers. The officers often volunteered information about inmates they were worried about, *e.g.*, "The guy on your list is doing fine, but you really ought to know about so-and-so." They told us stories of sending inmates to yard clinics for problems and getting them back with no assurance that the problems had been addressed. We realized that custody-identified inmates comprised an "at-risk" group, so we quickly began collecting information on these inmates as shown in our tables and analyses below.

Inmate Groups

Table 3 gives the functional characteristics of five groups of inmates, including 431 from our random sample, an additional 172 in medical beds, and 57 custody-identified. Table 4 gives the diagnoses of the first four groups.

1. **Sampled 55+ inmates**: sample of inmates age 55 or older. From our random sample of inmates, we got data for analysis on 431 inmates. The percentages, if accurate, reflect the characteristics of the total 55+ population in all 33 CDCR prisons (with the exception of the age and gender figures).
2. **Sampled GP inmates**: portion of sampled inmates age 55 or older in general population. The random sample contains 407 55+ inmates who were residing in the general population at the time of the survey.
3. **Sampled medical bed inmates**: portion of sampled inmates age 55 or older in medical beds. The random sample contains 24 55+ inmates who were residing in medical beds at the time of the survey.
4. **Medical bed inmates**: inmates of all ages in medical beds (GACH, CTC, OHU, SNF, hospice, excluding mental health inmates). We collected data on all 196 inmates who were in medical beds at the 11 prisons at the time of the survey. Percentages give a picture of the medical beds in all 33 CDCR prisons. Of these 196, 24 were in our random sample.
5. **Custody-identified GP inmates**: inmates in GP, not in the sample, about whom correctional officers volunteered concerns. Correctional officers identified 57 inmates, not in our sample, who had medical or safety issues of concern to the officers. We did not have time during our visits to gather and review charts of these inmates and therefore did not get diagnoses for them.

Table 3. Inmate Characteristics

Characteristic		**% of Sampled Inmates** (N=431)	% of Sampled GP Inmates (N=407)	% of Sampled Medical Bed Inmates (N=24)	% of Medical Bed Inmates (N=196)	% of Custody-Identified GP Inmates (N=57)
Average age		61.5	61.4	64.7	49.8	60.9
Age Group	<55	(Med. Bed Only)	(Med. Bed Only)	(Med. Bed Only)	65	(Med. Bed Only)
	55-59	23	24	13	12	27
	60-64	21	21	21	7	13
	65-69	27	27	29	6	23
	70+	28	27	38	10	37
Gender	Male	91	91	88	90	96
	Female	9	9	13	10	4
Upper Bunk		**13**	14	(GP Only)	(GP Only)	0
Staff Familiarity	A Little	**43**	45	5	10	38
	Very Well	**57**	55	95	90	62
Mobility Aid	Cane	**9**	9	0	2	32
	Walker	**2**	2	3	8	0
	Wheelchair	**11**	9	54	41	23
	Standby Assistance	**1**	0.3	6	3	2
History of Falls		**6**	5	16	15	22
Bed/Chair Transfer	Supervision/Limited Assistance	**3**	2	30	13	13
	Extensive Assistance/Total Dependence	**2**	1	22	19	9
Dressing	Supervision/Limited Assistance	**1**	1	9	14	7
	Extensive Assistance/Total Dependence	**4**	2	44	20	6
Eating	Supervision/Limited Assistance	**2**	0.3	34	10	6
	Extensive Assistance/Total Dependence	**1**	1	11	10	4
Using Toilet	Supervision/Limited Assistance	**1**	1	10	10	4
	Extensive Assistance/Total Dependence	**3**	2	44	20	8
Bathing	Supervision/Limited Assistance	**3**	2	19	17	9
	Extensive Assistance/Total Dependence	**4**	2	44	24	9
Number of ADL Requiring	0	**92**	95	33	57	68
At Least Supervision	1-2	**4**	3	14	12	21
(of 5 listed above)	3-5	**4**	2	53	30	11
Incontinent		**6**	3	52	20	23
	Bladder	**4**	3	32	18	19
	Bowel	**4**	2	52	19	19
Cognitive Impairment**		**21**	19	55	24	50
Vision Impairment		**8**	8	9	4	18
Hearing Impairment		**8**	9	5	6	17
	Has Hearing Aid	**4**	4	0	2	13
Higher Care Location in 1 Year		(GP Only)	16	(GP Only)	(GP Only)	82
Unsafe in Location		(GP Only)	3	(GP Only)	(GP Only)	45
Death not surprising in 1 Year		(Med. Bed Only)	(Med. Bed Only)	58	42	(Med. Bed Only)

* Bolded percentages should reflect the statewide 55+ population (see text)

** Dementia diagnosis, any memory/decision-making problem, or developmental disability

Table 4. Inmate Diagnoses

Diagnosis	% of Sampled Inmates (N=472)	% of Sampled GP Inmates (N=448)	% of Sampled Medical Bed Inmates (N=24)	% of Medical Bed Inmates (N=196)
Diabetes Mellitus	16	16	12	15
Thyroid Disorder	4	4	6	2
Coronary Artery Disease	18	18	7	9
Congestive Heart Failure	3	3	9	3
Hypertension	48	49	22	22
Peripheral Vascular Disease	2	2	3	2
HIV	1	1	5	8
Tuberculosis	0.3	0.3	0	0
Viral Hepatitis	17	18	3	7
Arthritis	26	27	5	5
Cerebrovascular Accident	4	3	21	11
Hemiplegia	1	0.2	14	6
Paraplegia	0.5	0	13	10
Quadriplegia	0	0	0	5
Dementia (including Alzheimers)	4	3	29	8
Parkinson's Disease	3	2	15	4
Seizure Disorder	5	5	2	7
Head Trauma	2	1	15	3
Depression	6	5	13	5
Schizophrenia	3	3	11	4
Substance Abuse	4	4	5	5
COPD/Asthma	14	14	21	10
Anemia	3	2	21	10
Renal Failure	2	2	0	10
Dialysis	1	1	0	7
End Stage Liver Disease	0.3	0	8	8
Benign Prostatic Hyperplasia	8	8	0	1
Cancer	7	7	22	12
Hyperlipidemia	24	25	1	1
Gastroesophageal Reflux	13	13	0	3
Allergic Rhinitis	8	9	0	0
Chronic Pain (Including Low Back)	22	23	1	2
Glaucoma	3	3	5	1
Vision Loss	1	1	0	1
Hearing Loss	4	4	0	0

Introduction to Inmate Characteristics and Diagnoses

For almost all inmates in medical beds, we were able to gather and combine information from both nursing staff and inpatient charts. Where possible we did likewise for GP inmates, getting

information from both correctional officers and outpatient charts. At times we could not locate an officer familiar with the inmate, and at times we could not locate charts. Our chart reviews yielded diagnoses on 448 GP inmates from our sample (see Appendix A). Our data on characteristics such as falls, continence, cognitive impairment, hearing/vision impairment derived from a combination of staff and chart information. At times we relied on *Armstrong* ADA information available on the yards or chart forms. We derived upper bunk information from the CDCR list of cell numbers, which code bunks as U or L.

The sampled inmates, groups 1-3, were all age 55+ by definition, whereas the medical bed inmates were a younger group, 65% of whom were under 55 years old and only 10% 70+. Within the 55+ sample, the medical beds portion was older (average 64.7) than the GP portion (average 61.4). Correctional officers knew over half of the GP groups very well. (If they didn't know an inmate at all, then we did not include that inmate in the survey.) Nurses knew the medical beds inmates very well at least 90% of the time.

As expected, the sampled medical bed inmates were dramatically more impaired than the sampled GP inmates. The number of GP *vs*. medical bed inmates that needed help with bathing was 4% vs. 63%; that were incontinent, 3% vs. 52%; and that had cognitive impairment, 19% vs. 55%. Even so, the number of impaired GP inmates is significant. We can expect approximately 10,000 inmates age 55+ statewide by year's end, 95% of whom will be in GP. Our results suggest that 400 will need help bathing, 300 will be incontinent, and 1900 will have cognitive impairment. As we will discuss below, some of these numbers are underestimates.

The correctional officers felt that 3% of the sampled GP inmates were physically or medically unsafe in their current location and that 16% would need to be at higher level of care within a year. In contrast, they felt that 45% of the custody-identified GP inmates were physically or medically unsafe in their current location and that 82% would need to be at higher level of care within a year.

The nurses said they would not be surprised if 58% of the sampled medical bed inmates (age 55+) and 42% of the medical bed inmates (all ages) were to die within a year.

Certain diagnoses, *e.g.*, diabetes, were similar in prevalence across groups. Others were higher in the medical bed groups, *e.g.*, cerebrovascular accident (stroke), hemiplegia, paraplegia, and Parkinson's. It is important to remember that we did not speak with inmates or do independent medical evaluations; we were therefore dependent upon diagnoses noted in the charts. A small minority of prisons maintain problem lists in the charts, so we combed through progress notes and forms for diagnoses.

We have reason to believe that chart documentation of diagnoses was often incomplete. Physicians pay attention to some diagnoses more in outpatient than in inpatient settings. Also, the CDCR *Plata* chronic care program emphasizes certain diagnoses in the outpatient setting. CDCR clinic physicians now routinely screen for hyperlipidemia (high cholesterol), for instance, so that 25% of the sampled GP inmates carry that diagnosis *vs*. 1% of the sampled medical bed inmates. A more even distribution would be closer to the underlying reality. Other diagnoses, *e.g.*, depression and dementia, are under-diagnosed by physicians in the free world, in CDCR clinics, and in CDCR inpatient settings, as we will discuss further. Finally, we found multiple charts of older inmates, some 70+, who had not come to clinic to see a physician in several years, so the physicians had no opportunity to document their diagnoses.

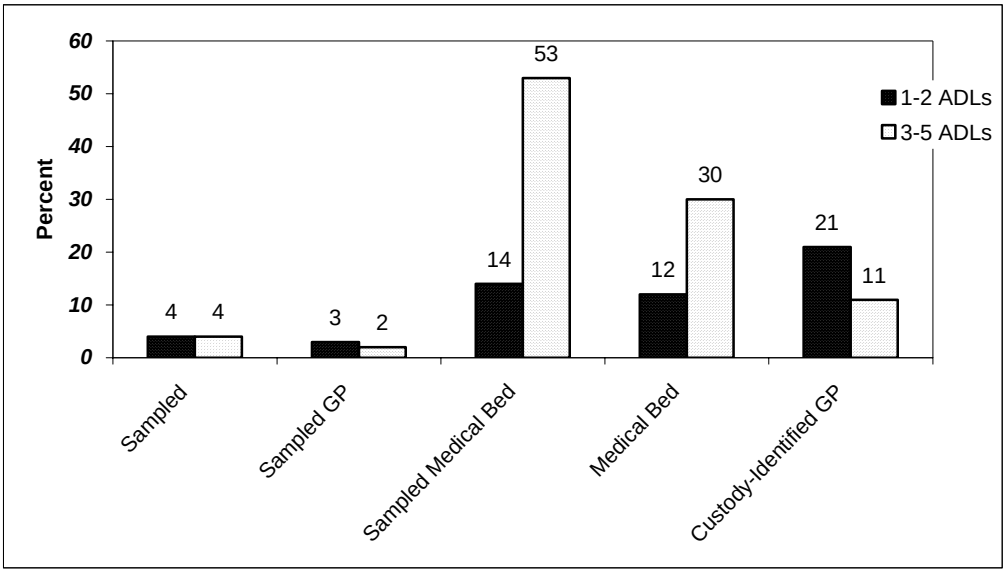
Activities of Daily Living and Mobility Impairments

Correctional officers said 5% of sampled GP inmates had impairments in at least one of five ADLs (bathing, eating, dressing, toileting and transferring), ranging from needing supervision to being totally dependent. ADL impairments increased with age, from 3% for 55-64 to 15% for 70+. Some 3% of sampled GP inmates overall required extensive assistance with, or were totally dependent in, an ADL. This percentage increased to 10% among 70+ inmates.

Overall, 4% of 55+ inmates in GP and medical beds had 1-2 ADL impairments and 4% had 3-5. These numbers are similar to the free world 65+ population, in which 3.9% of men have 1-2 ADL impairments and 2.4% have 3-4. Free world women have higher numbers, with 7.1% having 1-2 ADL impairments and 4.1% having 3-4.[38]

ADL impairments were highest in our sampled 55+ medical bed inmates. Of the custody-identified GP risk group, 32% had at least one ADL impairment (see Figure 3).

Figure 3. Impairment in Activities of Daily Living



We defined mobility impairment as using aids such as canes, walkers, or wheelchairs or needing standby assistance during ambulation. Some 19% of Californians 65+ have mobility limitations.[39] Correctional officers said 19% of sampled 55+ GP inmates overall and 37% of 70+ inmates used a mobility aid (see Figure 4). Canes were used by 7% of inmates 55-69 and by 20% of those 70+. Similarly, wheelchairs were used by 8% of inmates 55-69 and by 12% of those 70+. Of those using a wheelchair, 38% needed someone else to push it.

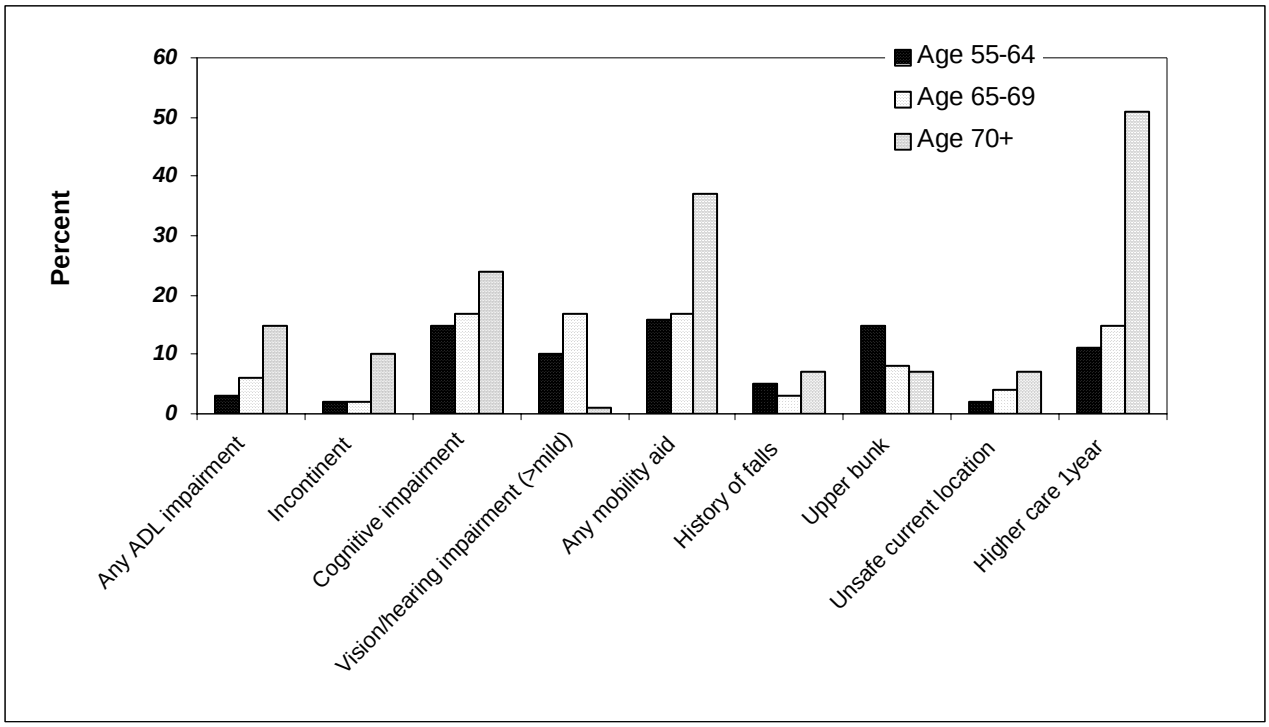
Some inmates who would be independent in the free world may face special problems with ambulation while in prison. At Salinas Valley, a 74-year-old man who works in the kitchen is independent in his activities of daily living. However, he needs supervision or limited assistance from his escort when walking while handcuffed. Walking without free hands is more difficult for older adults, putting them at increased risk for falls.

Older inmates sometimes request mobility aids for reasons other than mobility assistance. One inmate, nick-named “Frank Sinatra” by yard medical staff, demanded a cane despite staff’s assessment that he did not require one. When he lost his cane and the staff did not replace it, he

became belligerent and borrowed one from another inmate. The staff then videotaped him dancing with his cane. Other inmates are said to "fake" needing a wheelchair so they can stay in their current housing assignment.

However, many inmates do require mobility assistance. Only 2% of GP inmates use walkers, whereas 9% use canes and 9% wheelchairs. We identified some inmates using canes who needed walkers for additional balance support. Of inmates with a wheelchair, 35% also have an ADL impairment. For example, one wheelchair-bound 78-year-old man in GP with renal failure and arthritis requires extensive help with dressing and supervision with all transfers.

Figure 4. Characteristics of Sampled GP Inmates by Age Groups



Hearing/Vision Impairment

Of the sampled GP inmates, correctional officers and chart review showed 9% with hearing impairment overall, increasing to 28% in the 70+ inmates. In addition, 8% had vision impairment overall, increasing to 13% in the 70+ inmates. These numbers may be low from lack of recognition. In the free world, 37.2% of people age 65+ report hearing problems and 17.5% report vision problems.[40]

Hearing loss in prison is a set-up for inappropriate rule violation charges[41] as well as a safety risk. One correctional officer told us that a 63-year-old man was socially disruptive and that he "pretends not to hear orders because he is elderly." However, there was no indication in his medical chart that his hearing has ever been tested or that his hearing problem (real or imaginary) had ever been brought to the attention of a health care provider. Another correctional officer said of a 70-year-old man with hearing aids, "He can barely hear at all and it makes him unsafe." The correctional officer felt he was unsafe in his current housing location because of his hearing loss.

Indeed, any sensory impairment puts older persons at greater risk for falls. For example, a 79-year-old man in GP at CMC has moderate vision impairment, severe hearing impairment, and frequent falls. He is usually in a wheelchair and requires extensive assistance with bathing and transferring.

Falls

Falls increase in frequency with advanced age and are associated with serious injury, loss of function, increased health care usage, nursing home placement, and mortality.[42] The cost of a free-world hip fracture repair in 2001 was $8,900 for the initial hospitalization but totaled $81,300 when follow-up care was considered.[43]

Correctional officers identified 5% of the GP sample as having had a fall in the past, and they often gave falls as a reason for saying that older inmates were not safe in their current living situation. One 67-year-old man uses a walker and has frequent falls, usually when he is transferring from his walker to his bed. In addition, he rarely bathes because he is unsteady on his feet and there is usually no one available to help him. He needs more attention, according to the officer, than he can get in GP.

In the free world, 44% of falls occur in the presence of environmental factors such as poor lighting, loose rugs, and lack of handrails.[44] In the prison setting, environmental risk factors also include strenuous work assignments, younger inmates moving quickly past, and top bunk assignments.[45] At times falls are the primary cause of "yard failures," inmates who go into a higher level of care with minimal medical or nursing needs. A 70-year-old man with Parkinson's disease uses a walker and is independent in all ADLs but takes anti-clotting medication. After a fall, medical staff felt he was unsafe in GP and placed him in the CTC. There his physician told us that the inmate doesn't really need a CTC bed, but rather something in between GP and CTC: "He can't move fast enough. He is not safe on the yard. He needs an assisted living facility."

Urinary Incontinence

Correctional officers said that 3% of the 55+ GP sample overall had bladder or bowel incontinence, 2% of those 55-69 and 10% of those 70+ (see Figure 4). As we will show below, 9% of female GP inmates had incontinence. The numbers are probably much higher. In the free-world, non-institutionalized, 65+ population, 16% of men and 33% of women have incontinence.[46] A 1992 study found 13.9% of inmates 50-59 with incontinence and 37.8% of inmates 60+ for an overall rate of 21.6%.[47]

Correctional officers noted use of incontinence pads in only two inmates, one of whom was in the custody-identified group. Many officers did not even know that incontinence pads existed, but indicated that inmates would be more comfortable if they had access to them. A yard clinic nurse said incontinence supplies are hard to get. She described a 78-year-old man with long-standing incontinence, hearing loss, and multiple medical problems and said, "His care could be much improved by getting more medical supplies for a wider range of conditions. For example, diapers. Why can't we hand them out instead of ordering them? Patients are charged for them. This man had to do without them for two weeks recently."

In our chart reviews we did not find evidence of nursing or medical investigation for the cause of incontinence. In our discussions with healthcare staff members, they routinely spoke of incontinence as a problem to be managed, not one which has reversible causes.

Cognitive Impairment

Cognitive impairment, also known as memory impairment, is characteristic of dementia, developmental disability, and traumatic brain injury. The most common cause of dementia is Alzheimer's disease, which gradually destroys memory, reason, judgment, language, and eventually the ability to carry out even simple tasks. Other causes of dementia include strokes, Parkinson's disease, and HIV. About 15% of men and 11% of women in the free-world, non-institutionalized, 65+ population have moderate-to-severe memory impairment.[48]

In our GP survey, identification of cognitive impairment was difficult. Correctional officers said 19% of the GP sample overall had cognitive impairment (any memory or decision-making problems, dementia, or a developmental disability), ranging from 15% of those 55-69 and 24% of those 70+ (see Figure 4). However, when we reviewed the small group of GP-sampled inmates who had evidence of dementia in their charts, we found that officers identified only three of the seven as having memory problems, suggesting that correctional officers may often be unaware of these problems.

Officers often said that they were uncomfortable making an assessment of memory problems. One of the reasons often noted was that they couldn't tell if inmates were using their age to "fake" memory impairment. A correctional officer described a 66-year-old man with short-term memory problems who often says, "I forget all the time, I am an old man." But the officer said, "I can't tell how much of the condition is trying to play games and how much of the condition is his actual age or that he has real functional problems." The officer also said the inmate often appears anxious or nervous. In any case, the officer felt certain that he will need a higher level of care within the next year.

We found inmates with good functional ability and minimal co-morbid conditions failing in GP because of their cognitive impairment. One wheelchair-bound, 82-year-old man with hearing loss requires a correctional officer to hold his identification card because otherwise he would lose it. He has become verbally abusive and aggressive towards other inmates. He has stopped wearing his hearing aid recently, probably because he forgets to put it in, according to the officer. An 81-year-old inmate is completely independent in his ADLs but he packs his bags to go home every morning, thinking he has been paroled. His correctional officer helps him unpack every afternoon. While his correctional officer feels that he is safe now, with different inmates around him he would be an easy target for physical intimidation or abuse.

Other inmates in GP have with cognitive impairment and severe functional impairments. An 82-year-old man with heart disease and vision and hearing impairment is wheel-chair bound following a stroke, needs supervision with transferring from his wheelchair, and requires extensive help with all other ADLs, including toileting. He does not recall the names and faces of his officers or cellmates. His correctional officer describes him as fragile, frail and unsafe.

In our chart reviews we did not find evidence of dementia screening with the brief screening tests commonly used in the free world.

Female 55+ Inmates

We over-sampled from CCWF, one of California's two women's prisons, in order to facilitate male/female comparisons (see Table 5). There were only several small but statistically significant differences in functional status. Women were more likely to need standby assistance when walking and supervision or limited assistance in using the toilet and bathing. They were also more likely to be well-known to the correctional officers, however, who thus may have been more aware of these

Table 5. Characteristics of Male 55+ Inmates Compared With Female 55+ Inmates

Characteristic		% of Sampled Male Inmates (N=393)	% of Sampled Female Inmates (N=38)		% of Sampled Male GP Inmates (N=372)	% of Sampled Female GP Inmates (N=35)	
Age Group	55-59	24	21		24	23	
	60-64	21	26		21	26	
	65-69	27	29		27	26	
	70+	28	24		27	26	
Upper Bunk		14	6	†	14	6	†
Staff Familiarity	A Little	44	25	†	45	27	†
	Very Well	56	75		55	73	
Mobility Aid	Cane	8	11		9	12	
	Walker	2	0		2	0	
	Wheelchair	10	24	†	8	20	†
	Standby Assistance	0.3	7	†	0	7	†
History of Falls		6	6		5	6	
Bed/Chair Transfer	Supervision/Limited Assistance	3	3		2	3	
	Extensive Assistance/Total Dependence	2	0		1	0	
Dressing	Supervision/Limited Assistance	1	0		1	0	
	Extensive Assistance/Total Dependence	4	0		2	0	
Eating	Supervision/Limited Assistance	2	0		0.3	0	
	Extensive Assistance/Total Dependence	1	0		1	0	
Using Toilet	Supervision/Limited Assistance	1	3	†	1	0	
	Extensive Assistance/Total Dependence	4	0		2	0	
Bathing	Supervision/Limited Assistance	2	8	†	2	4	
	Extensive Assistance/Total Dependence	5	0		2	0	
Number of ADL Requiring At Least Supervision (of 5 listed above)	0	92	89		95	93	
	1-2	3	11		3	7	
	3-5	4	0		2	0	
Incontinent		5	11	†	3	9	†
	Bladder	3	8	†	3	9	†
	Bowel	4	3		2	0	
Memory Impairment*		21	16		19	18	
Vision Impairment		8	8		8	8	
Hearing Impairment		9	6		9	6	
	Has Hearing Aid	4	5		4	6	
Higher Care Location in 1 Year		(GP Only)	(GP Only)		16	19	†
Unsafe in Location		(GP Only)	(GP Only)		3	1	

*Dementia diagnosis, any memory/decision-making problems, or a developmental disability
†Statistically significant difference between male and female inmates ($p<0.05$)

Table 6. Diagnoses of Male 55+ Inmates Compared With Female 55+ Inmates

Diagnosis	% of Sampled Male Inmates (N=439)	% of Sampled Female Inmates (N=33)		% of Sampled Male GP Inmates (N=418)	% of Sampled Female GP Inmates (N=30)	
Diabetes Mellitus	16	26	†	16	26	†
Thyroid Disorder	4	10	†	4	10	†
Coronary Artery Disease	18	19		18	17	
Congestive Heart Failure	3	6	†	3	3	
Hypertension	48	67	†	49	70	†
Peripheral Vascular Disease	2	3		2	0	
HIV	2	0		1	0	
Tuberculosis	0.3	0		0.3	0	
Viral Hepatitis	17	16		18	17	
Arthritis	26	40	†	26	43	†
Cerebrovascular Accident	3	11	†	3	12	†
Hemiplegia	1	0		0.3	0	
Paraplegia	0.5	0		0	0	
Quadriplegia	0	0		0	0	
Dementia (Including Alzheimers)	4	0		3	0	
Parkinson's Disease	3	0		2	0	
Seizure Disorder	5	3		5	3	
Head Trauma	2	0		1	0	
Depression	5	13	†	5	10	†
Schizophrenia	3	0		3	0	
Subsance Abuse	4	0		4	0	
COPD/Asthma	13	37	†	13	34	†
Anemia	3	11	†	2	5	†
Renal Failure	2	0		2	0	
Dialysis	1	0		1	0	
End Stage Liver Disease	0.3	0		0	0	
Benign Prostatic Hyperplasia	8	0	--	9	0	--
Cancer	7	3	†	7	3	†
Hyperlipidemia	23	48	†	24	50	†
Gastroesophageal Reflux	13	13		13	14	
Allergic Rhinitis	9	0		9	0	
Chronic Pain (Including Low Back)	22	21		23	21	
Glaucoma	3	3		3	3	
Vision Loss	1	0		1	0	
Hearing Loss	4	2	†	4	2	†

†Statistically significant difference between male and female inmates ($p<0.05$)

relatively modest needs. The female inmates were far more likely to be incontinent, far more likely to use a wheelchair, and far less likely to be in an upper bunk than the male inmates.

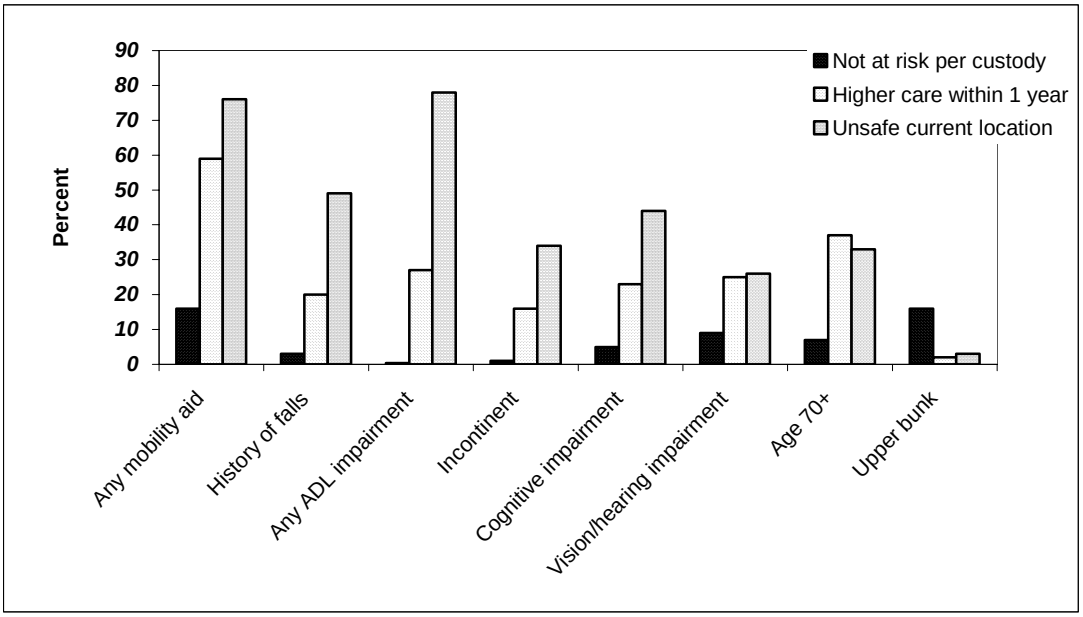
Chart reviews showed that the 55+ women were more likely to have chronic illnesses than men, including diabetes, thyroid disorder, congestive heart failure, hypertension, arthritis, cerebrovascular accident, depression, COPD/asthma, anemia, and hyperlipidemia (see Table 6). They were less likely to have cancer or hearing loss. There are well-established gender differences in the free world chronic illness, including a greater prevalence of thyroid disorder, depression, anemia, and incontinence among women. Some of the differences we found, *e.g.*, a higher rate of hyperlipidemia, may be due to better screening and documentation at CCWF than at the whole of the 10 men's prisons we visited. Higher medical care utilization among female inmates could contribute. Some of the differences may be due to CCWF's greater share of chronic illness that the other women's prisons.

The basic challenges of function and safety are similar for older male and female inmates. They are similar in some behavioral ways as well. Both older men and women commit fewer rule violations than younger inmates.[49] They have been described as different, however, "in pre-prison socialization and life experiences and in-prison values and behavior."[50] Older married male inmates, for example, make better adjustments to prison life than unmarried males. Female married inmates do not appear to have the same ability to transform their marriages into social capital. On the other hand, older female inmates have higher levels of social support from other sources.[51] They may be more inclined to give each other peer support, which can have a positive impact on both function and appropriate healthcare utilization.[52] Women also differ from men in their criminal patterns, history of drug use, and history of abuse.[53]

Risk Identification

Most correctional officers seemed comfortable answering the questions, Do you feel the inmate is physically or medically unsafe in his/her current location? and Do you feel the inmate will need to move to a higher-care location within the next year? The questions yielded two "at-risk" groups. When we compared these groups to the rest of the inmates not at risk, according to the officers, we found striking differences. The group needing a higher level of care within a year was dramatically more impaired than the group not at risk, and the currently unsafe group was yet more impaired. The officers' global judgments reflected measurable differences in mobility, falls, ADL impairment, continence, cognitive impairment, sensory impairment, and age (see Figure 5).

Figure 5. Correctional Officer Assessment of Risk Reflects Impairments

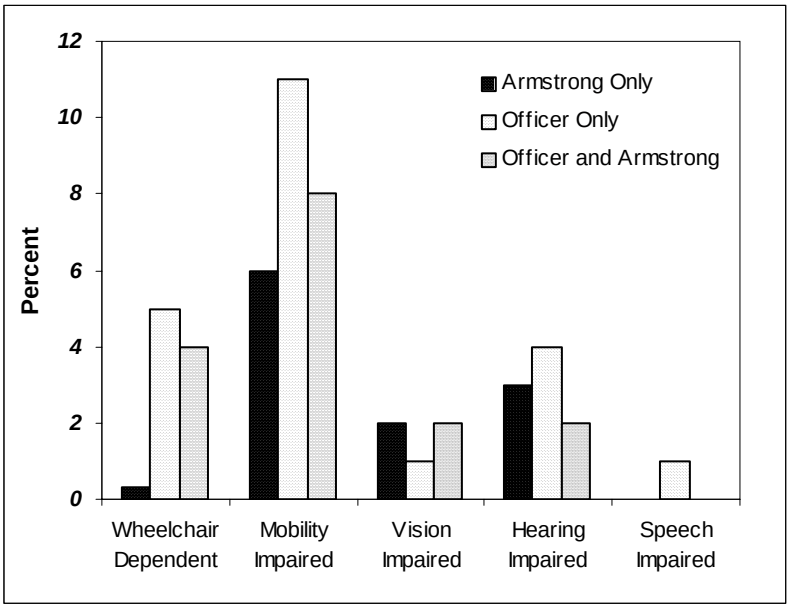


Any mobility aid: Reported by correctional officer, on chart, or assigned *Armstrong* code.
Vision/hearing impairment: Reported by correctional officer, on chart, or assigned *Armstrong* code.
Cognitive impairment: Dementia diagnosis, any memory/decision-making problems, or a developmental disability.

Although correctional officers were comfortable answering questions regarding inmates they knew, they did not know and could not give information on many others. We found that the officers on duty at the time of our visit were not familiar with 38% of sample GP inmates overall, nor with 33% of the inmates aged 70+. Even when officers are familiar with inmates, they are not part of the healthcare team and do not have chart access, so there will always be gaps in their knowledge. Officers sometimes said that inmates did not have a history of falls even when recent falls were documented in the charts.

Correctional officers often said it was useful to have a list of inmates with *Armstrong* ADA designations available on the cellblock. When we matched inmates for whom we had data with a list of inmates on the *Armstrong* ADA list, however, we found the *Armstrong* list incomplete. The officers identified significant numbers of inmates with wheelchair dependence and with mobility, vision, hearing, and speech impairment who were not on the *Armstrong* list (see Figure 6).

Figure 6. *Armstrong* ADA Lists Are Incomplete Per Officer Data



Top Bunk Assignments

Top bunk assignment is an example of the special problems posed by the physical environment of geriatric prisoners. Overall, 14% of the sampled GP inmates had top bunk assignments, ranging from 15% of those 55-69 and 7% of those 70+. Men were more likely to be in an upper bunk than women (see Table 5). One 57-year-old inmate with Parkinson's disease had a history of frequent falls, one of which resulted in multiple rib fractures and subsequent pleural effusion (fluid around the lung). Despite documented requests, he had not yet gotten a lower bunk. Another inmate wrote on a request, "I dreamt I was jumping and woke up on the floor. My Bunkie says I hit my hip and rib on the bench on the way down." An x-ray revealed three rib fractures. He was still assigned to an upper bunk at the time of our visit.

One 74-year-old man was mostly independent except in needing supervision while walking. The correctional officer felt the inmate was unsafe in his current location, mostly due to his age and unsteadiness, but he was still assigned to a top bunk. Moves to higher levels of care could sometimes be delayed by modest environmental modifications, such as lower bunk assignment.

Medical Beds: OHU, CTC, GACH, SNF

As noted above, we collected data on men who were in an Outpatient Housing Unit (OHU), Correctional Treatment Center (CTC), or General Acute Care Hospital (GACH), and women who were in the CCWF Skilled Nursing Facility (SNF) and who might be considered long-term care (LTC) for medical reasons. The Lumetra "medical beds" process yielded data on 196 inmates, including 8 inmates in the CMF Hospice. Of these 196, 24 were also in our random sample of 55+ inmates (see Table 3).

The CDCR Healthcare Placement Unit maintains a list of "LTC cases," which we obtained in August 2005. The criteria for that list are more stringent than typically used in the free world: an inmate "whose medical and/or mental health condition severely affects activities of daily living and the inmate's condition is not expected to improve in the next six months."[54] The Placement Unit gets information about the inmate only when the nursing staff complete and submit the CDCR "Level of

Care Assessment Tool." Nursing staff complete the form inconsistently, however, even on inmates who are unquestionably long-term care, so the Placement Unit data remain incomplete. Of the 196 inmates we surveyed in medical beds, only 93 were included on the Placement Unit's August 2005 LTC Report (see Table 7).

Table 7. Numbers of Medical Beds, LTC Inmates per CDCR, and Inmates Surveyed

	Medical Beds	LTC Inmates	Inmates Surveyed		Medical Beds	LTC Inmates	Inmates Surveyed
GACH				**OHU**			
CIM	62	12	25	ASP	28	4	15
CMC	37	6	16	CAL	18	7	
CMF	7	16	17	CCC	19		
COR	52	9	38	CCI	15	2	
				CIW	17		
CTC				CMC	34		
CEN	15	5		COR	20		
CMF	50			CRC-M	10		
HDSP	25	15		CRC-W	2		
ISP	15			CTF	18	3	
LAC	5	3		SVSP	11		
MCSP	2	2	5	DVI	25	2	
NKSP	8	3		MCSP	6		
PBSP	15	4		SAC	18		
PVSP	12	3		SCC	13		
RJD	16	1	9	SQ	30	2	11
SAC	2	10		VSPW	20		
SATF	24	14	18				
SOL	4	2		**SNF**			
SVSP	17	11	14	CCWF	12	NA	20
WSP	12	5					
				HOSPICE (CMF)			8

The **"Medical beds"** column refers to GACH, CTC, OHU, and SNF beds that are not dedicated as mental health crisis beds (MHCBs). The numbers shown were derived from the Health Care Placement Unit information obtained in February 2006 (total allotted beds minus MHCBs). Until September 2005, CMF was using 32 GACH beds, after which it converted most of its used and unused GACH beds to CTC. **"Long-term care (LTC) inmates"** were those formally classified as LTC by the CDCR Healthcare Placement Unit in August 2005 (see text). **"Inmates surveyed"** refers to inmates included in the Lumetra survey July-October 2005. We did not gather information on inmates who were in medical beds for simple short-term medical reasons, *e.g.*, a jaw fracture, nor on the minority of inmates in GACHs who indeed seemed to merit acute-level care, nor on the inmates who were there only for mental health crisis. We did include inmates who were in MHCBs if they had dementia or another medical diagnosis consistent with medical long-term care. Decisions to include or exclude were made rough-cut and quickly by one of the Lumetra physicians and a CDCR nurse. The Lumetra physician completed the survey based on a brief interview usually with a nurse familiar with the inmate and a chart review, without direct examination of the inmate.

Inmates in the CDCR medical beds often have serious illnesses common in other long-term care facilities (see Table 8). Hospice appears to serve a unique population with HIV and cancer, without end-stage liver disease or cognitive impairment, but we have data on only 8 hospice inmates. Overall we found end-stage liver disease in 8% of inmates in medical beds. While higher than in most free world long-term care settings, these numbers are consistent with the high burden of viral hepatitis and alcoholic liver disease among inmates.

Table 8. Diagnoses in Medical Beds

	HIV	Dialysis	Cancer	End-Stage Liver Disease	Stroke	Cognitive Impairment
OHU	9%	0%	0%	13%	22%	19%
CTC	0%	11%	5%	2%	7%	14%
GACH	10%	12%	13%	10%	13%	26%
Hospice	25%	0%	63%	13%	0%	0%
SNF (women)	5%	20%	20%	0%	0%	5%

Under-Recognition of Diagnoses in Medical Beds

As mentioned earlier, chart documentation of diagnoses for inmates in medical beds was incomplete. In some cases this deficit mirrors practice in the free world. We found the following rates among the 196 inmates in medical beds (average age 49.8):

- Dementia, 8%.
  - We searched the charts for all dementia-like diagnoses, including organic brain syndrome and Alzheimer's, and found an 8% prevalence. When we asked nurses to tell us about problems with memory and decision-making, however, they identified 24% with impairment. At least some of the difference is likely to be from under-diagnosis. The same under-diagnosis phenomenon is likely in the group of sampled 55+ inmates as well. In our group of 24 sampled 55+ medical bed inmates (average age 64.7), 29% had dementia diagnoses but nurses identified 55% with cognitive impairment.
- Depression, 5%.
  - When we asked nurses if the medical bed inmates appeared sad or blue (a reliable screening question for depression), we got positive responses for 22%. In free world nursing homes, minor depression affects 30-50% of patients and major depression affects 6-24%.[55]
- Anxiety, 0%.
  - When we asked nurses if the medical bed inmates appeared anxious, we got 7% positive responses. The prevalence of anxiety in the free world 55+ population is 11.4%.[56]
- Substance abuse, 5%.
  - Other prison studies have shown up to a half of inmates have a history of heavy drinking,[57] but healthcare staff may legitimately consider this problem less relevant in the medical bed inmates.
- Chronic pain, 2%.
  - Nurses told us that 46% required pain medications. As mentioned earlier, physicians commonly under-diagnose and under-treat chronic pain.[58]
- Contractures, 1%.
  - We asked nurses about contractures rather than depending on physician diagnoses. The contracture rate in free-world nursing homes is over 25%. The prison medical bed inmates have less ADL impairment than free world nursing home patients, and therefore may have fewer contractures, but our own experience in other prison projects suggests that the 1% rate is a consequence of under-recognition.

Use of Datasets for Problem Identification: The Example of Pressure Sores

Identifying clinical problem areas in a delivery system is easier with systematically collected data, which are not currently available to CDCR healthcare professionals. For instance, according to CDCR written testimony at a 2004 Senate hearing, there were 18 paraplegics and 7 quadriplegics in California prisons.[59] Yet in visiting only 11 of California's 33 prisons, we found 18 paraplegics and 9

quadriplegics in medical beds. The number of paraplegics and quadriplegics throughout the state could be two or three times higher. As mentioned above, the Healthcare Placement Unit list of long-term care inmates is incomplete, and our review of completed Level of Care Assessment Tools showed that even when inmates are assessed, the data submitted are incomplete. The CDCR tool does not prompt nurses to give information on pressure sores, incontinence, or falls.

Of the 18 paraplegics we surveyed, 13 had pressure sores. Of the 9 quadriplegics, 3 had pressure sores. At a single prison, we found 6 inmates in medical beds who were either paraplegic or quadriplegic; 5 of those had pressure sores. When asked a general question about what they needed to improve care, the nursing staff there repeatedly said they needed someone with wound care expertise. Their last inservice on wound care was approximately three years ago, given by a nurse from a mattress company. They also said they are working without a functional Hoyer lift and without certified nursing assistants. This prison, like all others we visited, lacked adequate physical and occupational therapy staff, whose expertise in fitting and adjusting wheelchairs is critical to pressure sore prevention. Wheelchairs were often ill-fitting and lacking appropriate cushions.

The cost of healing a pressure sore can easily reach $40,000.[60,61] Paraplegics are at obvious risk and need prompt attention from rehabilitation specialists when they enter prison reception centers.

Lack of Geriatric Expertise

To our knowledge, the CDCR currently has no geriatricians and no physiatrists (rehabilitation physicians) on staff. Both geriatrics and rehabilitation use a team model of care, so the lack of physicians in these areas suggests a broader lack of geriatric and rehabilitation teams, which should include appropriately trained nurses, rehabilitation professionals (physical, occupational, and speech therapy), mental health professionals, and social workers. These team members, not necessarily physicians, carry out many of the screening and assessment procedures in geriatrics and rehabilitation.

We reviewed 452 charts of inmates in the general population but found none with detailed evaluations of cognitive impairment. Even when physicians had made a dementia diagnosis, the subsequent care often breached good geriatric practice. We found many cognitively impaired inmates on medications known to worsen cognitive function, even though the list of inappropriate drugs for the elderly has been well publicized for over a decade. Hydroxyzine is one of the drugs with powerful anticholinergic side effects that are harmful in elders, especially those with dementia. We found a 66-year-old man with heart disease, emphysema, and Alzheimer's who was getting 50 milligrams of hydroxyzine (Atarax) every morning and 150 milligrams every evening. Even in young, healthy adults, the recommended dose does not exceed 100 milligrams a day. We found many 55+ inmates on diphenhydramine (Benadryl), which can be similarly harmful in older people.

In community nursing homes, regulations require monthly drug regimen reviews by pharmacists. The CDCR has no pharmacists available to do drug regimen reviews in any of its 33 prisons.

Having good primary care physicians available is no guarantee of good geriatric care. At one prison, a new agreement with the University of California has made academically-affiliated physicians available for consultation. Asked to consult on an inmate who had fallen, the university physician documented a detailed history and physical examination that would have been excellent had it included any of the required elements of a post-fall assessment, including assessment for balance and gait, vision, footwear, orthostatic hypotension, and medications that increase fall risk. Fall assessments are the province of geriatric and rehabilitation specialists and teams, routinely carried out in nursing homes and routinely fumbled in primary care physician offices. New standards for fall

screening, now being coupled with pay-for-performance financial rewards for physicians, may soon lead to improved practice in the free world.[62]

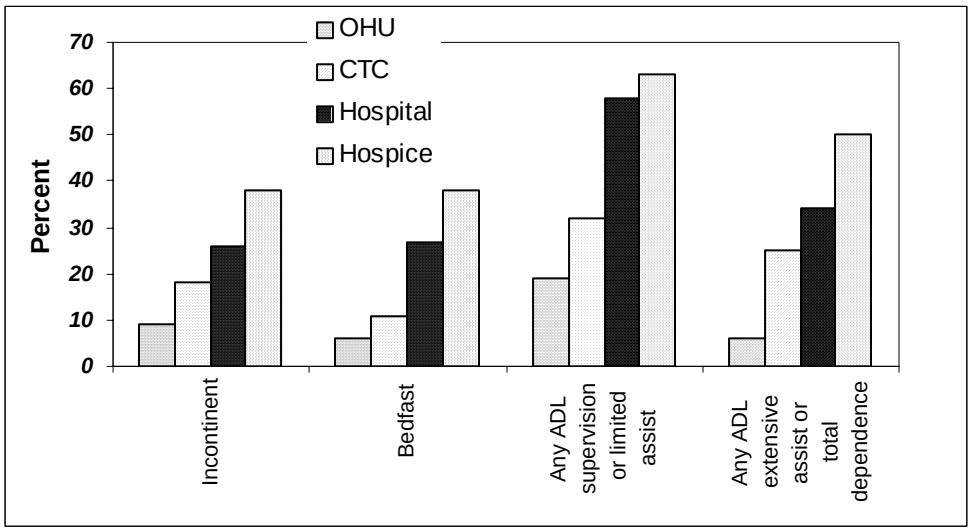
Nutritional and weight loss issues among CDCR medical beds also lack appropriate processes and expertise. In free-world nursing homes, regulations require monthly weights and dietitian input. Each nursing home's quality measures on weight loss—and on pressure sores, pain, depression, continence, and functional loss—are available on a federal government website for public use. Weight loss is erratically monitored within CDCR medical units, dietitian time is limited, and some prisons lack dietitians altogether. Availability of special diets varies from prison to prison.

Levels of Care

The CDCR's four General Acute Care Hospitals (GACHs), licensed as hospitals by the CA Department of Health Services (DHS), are small, minimally equipped and staffed facilities that can manage straightforward medical illnesses and some basic surgeries. CA Title 22 licensing regulations for Correctional Treatment Centers (CTCs), while adapted from nursing home regulations, allow much more flexibility, so that the CTCs can function as infirmaries for a variety of medical and mental health problems. Outpatient Housing Units are unlicensed infirmaries. CDCR policies require a physician history and physical within 24 hours of OHU admission as well as care plans for each inmate patient. Admission history and physical documentation was variable in quality and sometimes absent, particularly in specific CTC and OHU settings. Care plans were rudimentary in most of the prisons we visited.

As expected, the acuity of inmates in medical beds increases from OHUs to CTCs to GACHs to Hospice. Figure 7 shows such increases in percentages of inmates who are incontinent, who are confined to bed, who need either supervision or limited assistance with at least one ADL, and who need extensive assistance with or who are totally dependent in at least one ADL.

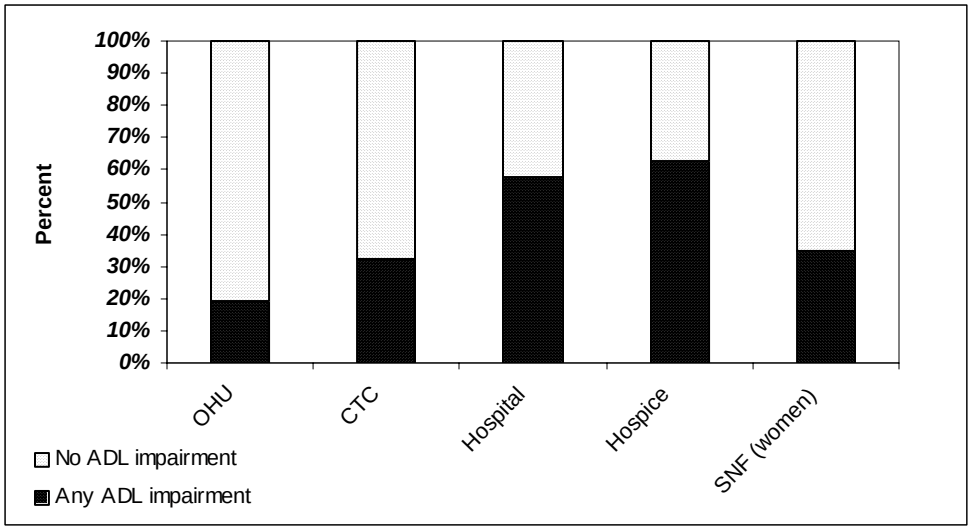
Figure 7. Increasing Impairments in OHU, CTC, Hospital, and Hospice



On the other hand, we have already noted that some inmates with minimal medical or nursing needs fail to stay in the general population and therefore transfer to higher levels of care. The percentage of inmates with no ADL impairments is 81% in OHUs, 68% in CTCs, 42% in hospitals, and 37% in hospice (see Figure 8). There are fewer placement options for female inmates, so it is not surprising

that the CCWF skilled nursing facility has an intermediate acuity. At the CCWF SNF, 65% of inmates have no ADL impairments.

Figure 8. Percentages With and Without ADL Impairment in Medical Beds



A 1996 study suggested that at least 15% of free world nursing home residents could be appropriately placed at lower levels of care (board-and-care homes or assisted living). "Mistakes are made in two ways: some persons are receiving care at too high a level and paying too high a price for it, while others are taking too many risks in lower levels of care."[63] We have already described inmates felt to be unsafe in general population for medical reasons. One correctional officer described a 64-year-old inmate with Parkinson's disease, hemiplegia (weakness on one side from a stroke), and incontinence who requires extensive assistance in ADLs and someone to push his wheelchair. The officer said, "He needs to be in a nursing home, not in a prison."

We also found numerous examples of inmates in medical beds who could be at lower levels of care. Among our 196 inmates were those in OHU, CTC, GACH, and SNF settings for the following reasons, according to staff:

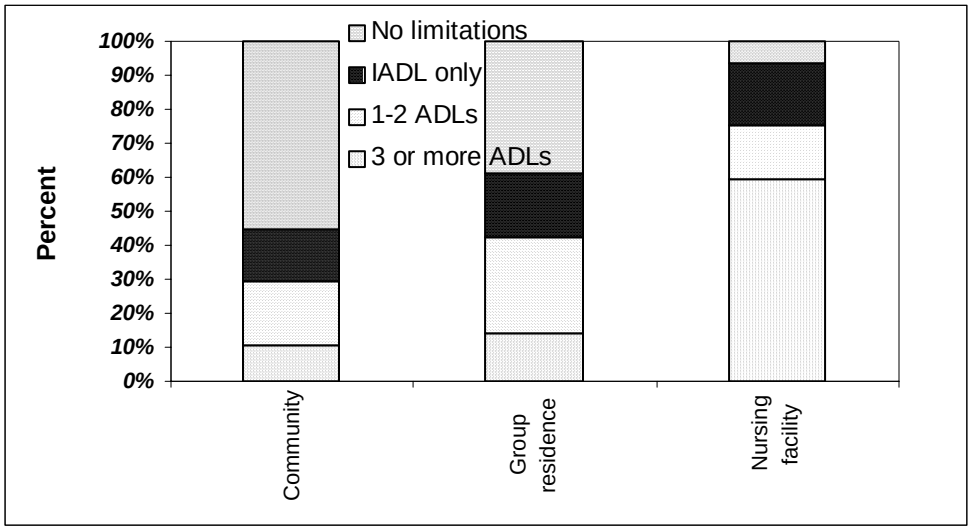
- Inability to store clean nephrostomy supplies on the yard.
- Prohibition against having portable oxygen on the yard.
- Prohibition against have a nasal CPAP machine on the yard.
- Prohibition against having indwelling dialysis (Quinton) catheters on the yard.
- Too much walking distance from yard to dining hall.
- Danger of demented inmates wandering on the yard.
- Need for assistance putting on socks and getting set up for bathing.
- Need for assistance cleaning after a bowel movement.

Ten of the 13 dialysis patients we found in medical beds had no ADL deficiencies and no cognitive impairment.

In the free world there has been a significant shift, largely consumer-driven, away from nursing homes to lower levels of care. The 2001 Medicare Current Beneficiary Survey recorded a drop in nursing home use and an increase in various group living arrangements, including assisted living and other congregate housing.[64] Figure 9 shows the portions of Medicare beneficiaries at three levels of care with no limitations, with limitations in instrumental ADLs only (shopping, cleaning, etc), with 1-2

ADL limitations, and with 3 or more ADL limitations. In the group living settings, 42% of residents had one or more ADL impairments, a percentage that falls between the 32% in CTCs and the 58% in GACH medical beds as seen in Figure 8.

Figure 9. ADL Impairments in Free World Levels of Care



It would be a mistake to think that CDCR healthcare professionals and custody staff are keeping inmates at higher levels of care without any rationale. Rather, they get no systematic support to keep inmates out of medical beds, and they have no assisted living options. We found multiple examples of healthcare staff trying to get necessary supplies for GP inmates and of custody staff trying to match impaired inmates with cellmates who would offer informal help.

Part of the problem is the misconception, evident in the CDCR's Level of Care Assessment Tool and in several other state systems, that scoring an inmate's clinical characteristics can point to an "appropriate" level of care. In the free world, every trial of quantitative algorithms predicting levels of care has failed to be of practical use.[65] Thanks largely to consumer-driven movements, the long-term care community has recognized that determining an appropriate level of care requires more than tabulating a patient's clinical conditions and functioning. The level of care should depend upon the interaction of the person's (1) clinical status, (2) the resources available, and (3) preferences. "The idea that a single 'appropriate' setting exists for each consumer based on disability level must give way to an understanding that more than one choice can work for many consumers."[66]

The resource dimension is easy to understand. Ex-presidents with Alzheimer's disease need not go into nursing facilities. With enough professional and family support, patients requiring nighttime respiratory ventilators can live at home. While flexibility is more limited in correctional settings, an inmate caregiver program, for example, can permit many impaired inmates to remain in the general population.

Preferences play a smaller role in correctional settings than in the free world, but they are not insignificant. CDCR staff described inmates who struggled against all odds to stay in the general population. Honoring an inmate's preference for the general population helps motivate his/her self-care and functional maintenance. Lack of motivation has fiscal implications; paraplegics who are not motivated to do self-care, for example, commonly get pressure sores.

Maintaining functional independence, to the greatest extent possible, is particularly important for inmates who will be paroled. Placement is more difficult for inmates who need more help. At any given time, 6-10 inmates are on the CDCR parole holdover list, being cared for at CDCR expense because of difficulty placing them in the community.

In correctional settings, determining an appropriate level of care requires simultaneous consideration of:

- The inmate's functional status and medical/nursing needs.
- The available resources (staffing, programming, equipment, environment) at each level of care.
- The inmate's preferences and risk tolerance.
- The facility's risk tolerance.
- Security/custody considerations.

With sustained attention, creativity, and modest resources, the CDCR could move many inmates out of medical beds to lower levels of care, albeit not all. A 1998 Vermont program to move nursing home residents back to the community was successful and saved money, but found that the successful resident group was less impaired overall than the unsuccessful group: the average nursing home resident who returned to the community was somewhat more capable of communication and decision-making, somewhat more continent, and needed extensive assistance with 2.5 ADLs rather than 3.[67] Inmates in CDCR medical beds are much less impaired than the Vermont group that was able to leave nursing homes.

Operationalizing this effort could build on local initiatives already in place, including formal inmate caregiver programs and special needs yards. One correctional officer suggested that aging inmates be assigned to special cellblocks but be allowed to choose younger cellmates who would be informally helpful. We spoke with healthcare staff in one CTC who said they sent an inmate, confused by hepatic encephalopathy, back to the yard in the care of a nurse who saw him every day to ensure that he took his medications, either in the yard clinic or at cell-front if he did not show. Improvised, heroic creativity on the part of healthcare professionals, however, is no substitute for a system of care.

Keeping inmates at lower levels of care saves money directly for that inmate, but the indirect savings may be even more important. Multiple CDCR Health Care Managers have described transferring stable inmates from medical beds into community hospitals, accompanied as usual by correctional officers, to create an open bed in the OHU, CTC, or GACH for another inmate in mental health crisis. The State Auditor documented similar comments.[68] Estimating the reduction in off-site hospital admissions and the cost savings is difficult, but one informed source estimated that 20% of off-site admissions could be averted.

Overlap of Geriatric and Mental Health Conditions

Because we were dependent on chart diagnoses, which for mental health data were particularly incomplete, we cannot reliably estimate how many 55+ inmates have both chronic medical conditions and chronic mental health conditions.

The prevalence of serious mental illness, including thought disorders such as schizophrenia, is 15% in state prisons among inmates of all ages.[69,70] The prevalence of personality disorders is much higher. Antisocial personality disorder is present in 47% of male and 21% of female inmates; a personality disorder of some type is present in 65% of male and 42% of female inmates.[71] Many of these inmates are now growing old and often have age-related dementia. One report of a maximum security hospital in another state found that 75% of elderly offenders were admitted in their 20s and

30s and detained into old age because of a single act of violence. The majority of this group was schizophrenic.[72] Some observers describe approximately 10% of older inmates as "old and ornery," or "toxic agers."[73] About half of Alzheimer's patients have mental health symptoms, which manifest as unacceptable behavior in prison settings. Disputes about whether an inmate should be in the care of medical *vs*. mental health teams occur daily in California prisons.

The CDCR Mental Health Services Delivery System (MHSDS) has in place many of the elements required for a chronic care population management system: screening of new arrivals, intake assessments, psych tech rounds, case management and a case management database (Correctional Clinical Case Management System or 3CMS), and an interdisciplinary team model. Although the MHSDS does not have the capacity to incorporate chronic care for inmates with medical conditions, it can offer invaluable lessons for a chronic care system. The CDCR must grapple with integrating the medical and mental health programs, especially for the large group of inmates with both medical and mental health conditions.

The MHSDS also has a procedure for mental health assessments in the disciplinary process, something sorely lacking for cognitively impaired inmates. We heard multiple reports of demented, bed-bound inmates being disciplined for infractions such as inappropriately grabbing a nurse. While such behavior should not be tolerated, its occurrence in community nursing homes triggers a behavioral care plan, not extended placement in isolation. Parole for cognitively-impaired inmates is often delayed because of rules infractions, resulting in extra costs to the CDCR. There is evidence that cognitive impairment is common at the time of criminal offense among older people. One study found that among child sex offenders over 60 referred to forensic services, 12.5-14.4% had organic brain disorders.[74] Court liaison referrals in inmates over the age of 60 have found rates of dementia ranging from 19-30%.[75]

The Pennsylvania report on aging inmates acknowledges the need for cognitive assessments in the disciplinary process:

> *Laurel Highlands quite often uses an informal grievance process. Many of the inmates do not even know where they are, let alone that they have done something wrong. An inmate will often lose television privileges for a while rather than being locked up for a misconduct. Laurel Highlands has had only a few very rare instances of serious misconducts and has never had an employee hurt by an inmate or physical force used against an inmate.*[76]

A comprehensive case management database could be useful for tracking not only inmates with medical and mental health conditions, but also those with disabilities (*Armstrong* ADA program) and traumatic brain injuries.

Overlap of Chronic Care and Palliative Care

California has been a national leader in prison palliative care, beginning with the founding of the CMF Hospice in the early 1990s.[77] CCWF has a hospice program for women. CMC has developed an innovative palliative care program in alliance with a local hospice, which facilitates a vigorous hospice volunteer training program. At the time of our visit to CMC, four terminal inmates were in the program. As one palliative care authority has noted, "The prospect of medically excellent and compassionate—even loving—care for dying inmates seems implausible, at best. Yet, these are precisely the goals of prison hospice programs and in demonstration projects around the country, this is exactly what is occurring."[78]

Dr. Joe Bick, Director of the CMF Hospice, has noted that end-of-life programs require close collaboration between custody and healthcare staff. They also require significant organizational

commitment and resources. Fortunately, "In many cases, the costs associated with a quality end-of-life program can be offset by avoiding unnecessary community hospitalizations."[79]

In spite of California's innovative tradition, the CDCR has undertaken no systemic initiatives toward the quality of care at the end of life. We found no attempts to review the quality of symptom management at end of life, for instance. We also found that clinical staff generally believed that inmates had to choose between hospice and life-sustaining treatment, although the free world programs now include more blended approaches.[80] End-of-life standards for correctional settings issued in 2000 state, "Palliative care is not denied to patients who elect to continue curative treatment."[81]

We found no prisons with advance care planning programs, which should routinely offer inmates the opportunity for end-of-life education about choices, well in advance of terminal illness. We found remarkable variation in the use of DNR orders, with some physicians discussing options and writing orders much as in the free world while others believed that DNR orders require court approval.

We found no ethics resources available for healthcare and custody staff or inmates and families. Advance care planning and end-of-life decision-making is more complex in correctional settings than in the free world because of inmates' distrust of staff, staff bias against inmates, barriers to involving proxy agents (with power of attorney for healthcare), and limited health literacy.[82,83]

A viable prison chronic care program should include advance care planning, if only because it would decrease the enormous strain on staff, inmates, families, and resources. There is preliminary evidence that combining palliative care with case management may optimize decision-making, quality, and efficiency.[84,85]

Integrated Care Management

Faced with the same financial pressures as California, other state correctional agencies have successfully implemented cost containment measures. Texas implemented prison managed care in 1994 and reported that in the first three years, healthcare costs per inmate-day fell from $5.98 to $5.11.[86] Utah reported $1,474,000 in savings in 2002 compared with 2001 after implementing a series of cost-containment techniques and organizational restructuring, all done while maintaining quality of care and *esprit de corps*.[87]

Free-world examples of successful managed care systems are close at hand. California Medi-Cal managed care has decreased preventable hospitalizations, improved access, and improved quality.[88] Similarly, California's organized physician groups have improved quality and decreased inpatient utilization, especially in the integrated group model.[89]

Most of the early savings from managed care came from more efficient use of hospital days, the "low-hanging fruit" of 1990s healthcare. Leading healthcare organizations, such as the Veterans Health Administration and Kaiser, have gone far beyond those early gains with organizational strategies to improve quality and reduce healthcare inflation. Kaiser has implemented a chronic care model that includes both care managers, who provide intensive direct patient care and education, and case managers, who provide care coordination for complex patients.[90]

As the medical system began to approach cost and quality from one side, the elder social services sector began to approach from the other. Community-based case management offers various levels of intensity, usually through social workers or nurses, focused on keeping patients functional and at home (or at the lowest possible level of care) while reducing unnecessary costs. Arizona's Medicaid case management system has proved to be cost-effective, although numerous others have had difficulty demonstrating cost savings.[91]

Programs that integrate community-based approaches with the medical delivery system have the best record of improving both quality and costs. The primary goal of PACE, the Program of All-Inclusive Care for the Elderly, is to keep frail, nursing home-eligible, Medicaid patients in the community and out of nursing homes with intensive, interdisciplinary team care. PACE has proven to be cost-effective.[92] One of the ways PACE saves money is through early intervention, which requires early recognition of problems. In a regular adult day health program, a participant may choose not to come in because of not feeling well. When a PACE participant complains of not feeling well and not wanting to come into the PACE adult day health program, the team responds by doing a prompt assessment, often preventing serious illness and costly hospitalization. A similar practice in the CDCR would have a nurse go to cell-front if a frail inmate failed to show in clinic, as in the example we gave above.

Through studies of PACE and other programs, we know that patients with unmet ADL needs generate higher healthcare utilization and costs, and morbidity, including falls and injuries, pressure sores, and contractures.[93] We also know that declines in functional status are associated with increased costs. Maintaining someone's independence in mobility and ADL function in highest category may save as much as $2000 per patient over 4 years.[94]

For care coordination to be cost-effective, whether in the medical, social, or integrated model, it must be targeted to those most likely to have preventable utilization. During a given year in the Medicare program, three overlapping groups each account for 28-29% of expenditures: those with a prior hospitalization, those with multiple chronic conditions, and those who were high-cost in previous

years.[95] The strongest associations with costs are having multiple ADL limitations and residing in a nursing home.

All care management programs must decide which patients to target. Integrated, interdisciplinary teams such as used in the PACE program are appropriate for frailer populations. Other programs generally use care managers and target a less frail population. Questions to answer in this model include the following:[96]

- What are the goals of care coordination?
- How does the program identify participants?
- How does the program involve physicians?
- How do care coordinators and physicians communicate?
- What is the role of specialists?
- What information is gathered with assessment tools?
- Are care coordinators nurses or social workers?
- What training do care coordinators get?
- What is the caseload size?
- What data and analyses are needed to monitor and evaluate care coordination over time?

Nearly all states, as part of their community-based and institutional Medicaid programs, consider ADL limitations among their eligibility criteria. Arizona's Medicaid case management program uses no single hard-and-fast eligibility but allows for flexibility and clinical judgment.[97]

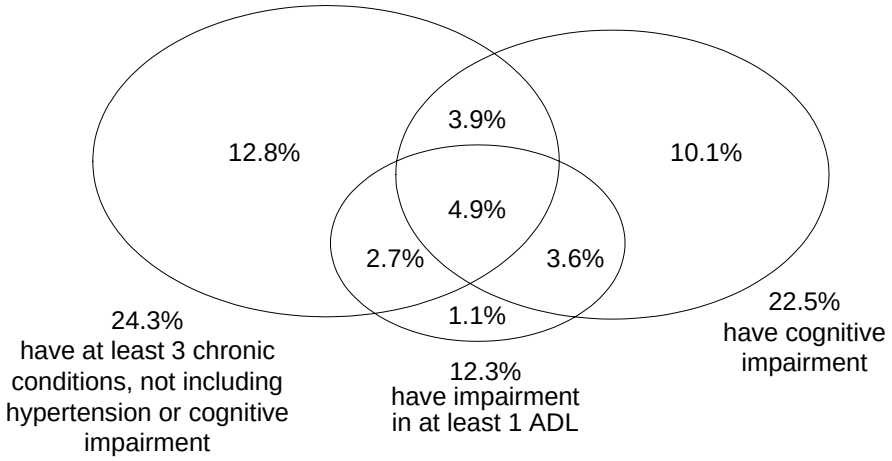
The 2003 Medicare Modernization Act, which brought us the Part D pharmacy benefit, included a care coordination benefit that was dropped from the final version. Criteria for participation included some combination of complex medical conditions, cognitive impairment, and ADL/IADL limitations. A recent analysis examined the ways in which criteria could be varied for optimal effectiveness.[98] Mirroring that analysis, we examined how the following categories overlapped for our sampled 55+ inmate population:

1. Those with at least 3 chronic conditions.[a]
2. Those with cognitive impairment.
3. Those with at least 1 ADL impairment. The study cited used >1 ADL or IADL impairment, but we did not get IADL impairment data from our survey.

For a 55+ population of 10,000, targeting the group meeting all three criteria would place 4.9% or 490 inmates in care management (see Figure 10). Targeting the group meeting any two criteria would place 15.1% or 1510 55+ inmates in care management. A portion of younger inmates need care management as well, but we have no population-based data that would allow us to estimate the size of that group.

[a] We used the following diagnoses from our survey tool plus several common write-in diagnoses: diabetes; any of the 7 heart/circulation diagnoses, excluding hypertension; any of the 3 musculoskeletal diagnoses; any of the 10 neurological diagnoses excluding dementia; any of the 4 psychiatric/mood diagnoses; COPD/asthma; any of the 6 "other" diagnoses excluding BPH; viral hepatitis, ESLD, and HIV. We excluded hypertension, as did Cigolle et al. Unlike Cigolle et al., we chose to include incontinence and falls, which modestly enlarged the group; these conditions point to frailty not otherwise captured in our dataset.

Figure 10. Overlap of Chronic Conditions, Cognitive Impairment, and At Least 1 ADL



This type of analysis encourages flexibility in targeting criteria, which can be adjusted as system capacity ramps up. Also, given that correctional officers in our survey made global judgments about inmates' safety that reflected issues such as mobility, ADL impairment, and cognitive impairment (see Figure 5), the CDCR targeting criteria could give significant weight to correctional officer recommendations. Encouraging officer referrals and officer-case manager communication would address a frustration we often heard: when officers get concerned and send inmates to medical clinic, the inmates often return with no evidence of having been helped.

Additional flexibility lies in options for the care management system to have two or three levels of intensity, which can be accessed short-term, long-term, or intermittently. A mildly demented inmate without ADL limitations may need only low-level, long-term monitoring for several years. An inmate who has a new event and new ADL limitations two months prior to parole will need intensive short-term care coordination. Currently in the CDCR, a social worker may be providing such intensive coordination for the latter inmate, albeit without formal support from a care coordination system. The former inmate, who may be seen as merely "old and quiet,"[99] is likely to be overlooked despite being high-risk.

Efficient use of differing levels of care management increases system capacity. Some inmates, *e.g.*, a healthy 60-year-old man, may need no direct work from a care manager but would benefit from being in the care management tracking system to ensure that he gets annual screening, checkups, and preventive care from the healthcare team. Using the figures derived above, 1020 55+ inmates may need moderate hands-on care management and 490, more intensive care management. Referrals from correctional officers would swell these numbers slightly, offset by the fact that some of these inmates are already in mental health case management. Inclusion of younger impaired inmates would swell the numbers more, but we lack the data to know how much.

To summarize, care management programs that have been successful in addressing cost and quality with the chronic care model have tended to target high-risk patients, use interdisciplinary teams, coordinate complex care plans, shift to lower cost levels of care, and redesign the delivery of care.[100] Superficially grafting a case management system onto a sick call model, or even the *Plata* chronic care model, is not likely to improve care or save costs. Care managers must be able to work effectively, efficiently, and collaboratively with the other healthcare and custody staff. Developing such a system will require new relationships and decision-making among social workers, physicians,

and correctional counselors. The CDCR can apply many of the models and lessons learned from its mental health work in developing a fully integrated care system.

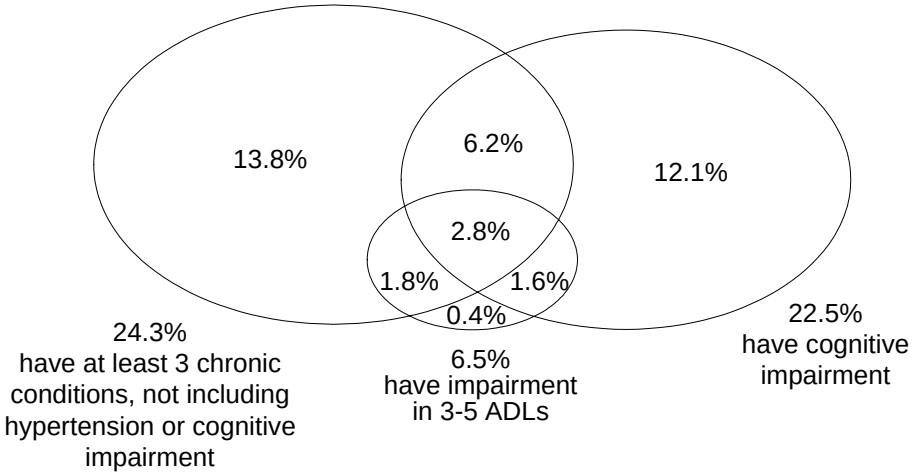
This conceptual framework of care coordination accommodates our earlier discussion about levels of care. Cost-effectiveness for care coordination lies largely in keeping inmates out of hospitals and at the lowest level of care. Keeping significantly more inmates in GP or special care yards and out of medical beds depends on getting past the present stage of isolated, improvised, heroic creativity to everyday collaboration among healthcare and custody staff with support from local and state leadership.

The analysis just used can also help clarify how many medical beds might be necessary for a given inmate population. Although earlier we stated that anyone could be kept out of a nursing home, given enough resources, in reality there is a financial/resource break-even point for the effort expended. The Vermont study found that significantly impaired individuals were less likely to benefit from attempts at discharge.

Given that current CDCR levels of care are set to lower acuities than free-world levels of care, we could start by saying that moderately impaired inmates are likely to require medical beds. The following diagram uses the same chronic conditions and cognitive criteria used above. The ADL circle shows inmates with any impairment, including need for supervision or limited assistance, in 3-5 ADLs. The size of this group is one-third that of the group with impairment in at least 1 ADL, shown earlier. It is much larger than the Vermont nursing home group, which required extensive assistance in at least 3 ADLs.

We know that a small number (2% or ~200) of the 55+ inmates are now managing to stay in GP despite impairments in 3-5 ADLs. For planning purposes, however, let's assume that a CTC bed would be necessary for an inmate with any impairment in 3-5 ADLs plus 3 chronic conditions and cognitive impairment. Some 2.8% meet that description, or 280 of 10,000 55+ inmates (see Figure 11). It would be safe to assume that given current practice in the CDCR, 280 55+ inmates will need a long-term care bed in a CDCR CTC or a community nursing home. This calculation is for the 55+ population only; 65% of medical beds are now filled with younger inmates, so the all-ages total may be 840. By the year 2010, this number may double.

Figure 11. Overlap of Chronic Conditions, Cognitive Impairment, and 3-5 ADLs



As the CDCR develops more assisted living-type options, these assumptions could change. One Ohio report recommended having 100 assisted living beds for every 1500-2000 inmates between 50-59

and 100 for every 890 inmates who are 60+. In California those guidelines would generate about 800 assisted living beds. A portion of these could be special needs units rather than full-fledged assisted living.

Recommendations for CDCR Elder Care

Environmental Modifications

Although our survey and consulting focused primarily on healthcare provision, we had ample opportunity to confirm the importance of safety and environmental factors and programming. As already noted, we found inmates who had fallen from top bunks or who were in medical beds because being in GP would require walking too far to the dining hall.

Recommendations from the 1999 California report and elsewhere have repeatedly focused on safety issues such as grab bars and handrails, walking surfaces, lighting, and signage; bottom tier and bottom bunk assignments; and temperature.[101,102,103] A study of older female inmates in Tennessee found that 88% needed a lower bunk, 71% were capable of going up/down stairs, 67% had difficulty standing in line up to 15 minutes, 61% required ground-level housing, 58% had difficulty walking long distances, 46% required a flat, even walking terrain.[104] A recent study of California female inmates confirmed the difficulty of "prison activities of daily living," including dropping to the floor for alarms, standing for head count, climbing on and off the top bunk, getting to the dining hall for meals, and hearing orders from staff.[105]

Even prisons with caring custody and healthcare staff may manifest "institutional thoughtlessness: not being allowed sufficient time to complete activities or get to and from specific locations… having to queue for long periods (sometimes for up to an hour) to obtain medications… having to climb stairs while carrying food trays… having to shower in slippery, tiled cubicles…. An infirm prisoner may refrain from exercise if he has no access to a toilet during the exercise, if he is not allowed to wear a warm coat, or if he is not given additional time to get to the exercise yard and back."[106] Exercise is thus not deliberately denied, but physical layout and inflexibility of routines make it difficult.

To address these issues, we recommend immediate development of an initiative at 6-8 male and female prisons of modifications to ensure access to meals, exercise, and recreation for geriatric or disabled inmates.

This effort should be championed by plant operations and custody officers and informed by healthcare staff, rather than led by healthcare staff. We recommend piloting the work at one or two prisons with relatively good practice, taking ample digital pictures of best practices, and getting input from geriatric and disabled inmates.

Care Coordination

Our earlier discussion focused on recent lessons learned about care coordination, but the idea of identifying older inmates at risk of mishap, ill health, and preventable costs is not new. Recommendations made by the National Institute of Corrections in 1992 include the following:

> *The initial assessment should include evaluation of the inmate's physical and mental health, and level of functioning in other areas such as lifestyle, work, family, community relationships, and criminal history. From this initial program and custody needs assessment, a plan can be developed to provide the security supervision needed and the programmatic emphasis, including work, needed to help ensure that an optimal level of functioning is maintained…. Since conditions and status can change so rapidly with older inmates, it is recommended that levels of functioning be assessed on an ongoing basis. This ongoing assessment can be accomplished through a relatively simple list of questions modified from geriatric assessment*

> *questionnaires and administered by a caseworker or classification specialist as a part of the classification review process. If problems are identified, the caseworker can then refer the older inmate to other staff as appropriate. Early detection and treatment are critical to help minimize costs and other problems.*[107]

It is reasonable to use age 55 as a trigger to begin admission and annual screening, although we agree with those who say that functional status is more important than age for determining program eligibility.[108] Intake and annual assessments will require new staff, tools, and processes, primarily in the form of nurses and social workers trained to use standardized instruments. Although the Lumetra survey questions performed well enough to serve a starting place for new instrument development, they are incomplete. Also, the Lumetra project did not engage directly with inmates. Recent recommendations suggest that correctional settings pilot use of the Short Form 36, since it has proven helpful in predicting free-world healthcare utilization.[109] The Short Form 36 is a comprehensive evaluation tool that assesses several domains including physical health, psychological well-being, and functional status.

Custody staff need to incorporate the screening and assessment findings into placement and work assignments. As described in the 1999 Florida report on aging inmates, "The inmate's functional capacity serves as the basis for institutional and work assignment."[110] These assessments could also be used to guide yard and cellmate assignments.

As pointed out earlier, the CDCR's current datasets provide inadequate support to both healthcare and custody staff. The Healthcare Placement Unit had not received assessments on 53% of the inmates we included in our medical beds. The *Armstrong* ADA dataset is incomplete. Inmates who are old and quiet often do not visit clinic for years, and correctional staff may not notice their vulnerability to mishap. With a care coordination system, population management can replace this haphazard approach to care. It can also overcome the artificial and often dysfunctional barriers between court-mandated programs, *e.g.*, *Plata*, *Coleman*, and *Armstrong*.

The care managers can offload work that now inappropriately goes to physicians. Clinic visits for simple equipment, supplies, and low bed assignments ("chronos") waste valuable time and undermine physician-patient trust. In free-world systems, nurses and other staff perform such tasks. We agree that the recommendation to assign lower bunks to all 55+ inmates is both the safest and most efficient approach.[111]

The care managers can facilitate community organization assistance, not only for pre-release planning but also for long-stay inmates. They can provide healthcare education to inmates, facilitate peer-led education and groups, and promote self-management.

We recommend that the CDCR develop a care coordination system that supports both medical and mental health case management for inmates with age- or function-related needs, that monitors interventions and outcomes, that facilitates cognitive assessments, particularly in the disciplinary process, and that keeps inmates at the highest possible functional levels and lowest levels of care.

What has been said about screening for infectious disease could also be said about the need to identify and intervene for risk in older inmates: "To implement appropriate screening, treatment, and prevention programs… is expensive, but not nearly as expensive as a failure to do so."[112]

Specialized Units and General Population Support

We applaud the aggressive development of geriatric options at CMF. We believe those preliminary efforts need additional support, that support for program development should go to other prisons as

well, and that successful models should be disseminated to all prisons with significant numbers of aging inmates. The CDCR should also develop:

- An adult day health center model
- Neurobehavioral units
- Assisted living and congregate care models
- Interdisciplinary teams with geriatric expertise

The adult day health center model, which figured so prominently in the 1999 California recommendations, is as yet unexplored in the CDCR. At least one prison this year should pilot-test an adult day health center with an in-center interdisciplinary clinic and shared healthcare-custody leadership. The CDCR should also lend systematic support for "home care" models that utilize inmate caregivers and/or the daily nurse visitation model in the example we discussed earlier.

Although we do not have population-based data on younger impaired inmates, our survey of medical beds suggests that the CDCR needs at least three neurobehavioral units for male inmates with the most difficult behaviors. One should focus on inmates with longstanding serious mental illness who now have cognitive impairment and ADL limitations complicated by hard-to-manage behaviors. Another should focus on inmates with traumatic brain injury and functional limitations. The third should focus on older inmates with dementia and hard-to-manage behaviors. Neurobehavioral programs include a strong neuropsychology presence within high-functioning interdisciplinary teams, care plans that truly guide the care of all disciplines, and preparation for parole or lower level of care within the CDCR.

In developing assisted living and congregate care models, the CDCR needs to attend to physical plant requirements and requirements for staff and staff training. Inmates with oxygen, catheters, ostomies, contractures, diabetes, enemas, suppositories/disimpaction routines, incontinence, injections, stage 1-2 pressure ulcers can all live in such units. Staff must be trained in safe medication administration, falls prevention, incontinence care, dementia care, communication techniques, skin care, and recognition of changes signaling acute illness, delirium, depression. Without guidance and training, there will be unnecessary and troubling confusion among correctional officers when their role seems to blur from custody to caretaker[113] (see Appendix C).

Inmates in these units must have access to an effective interdisciplinary team—including nursing, medicine, social work, behavioral health, and custody—to avoid unnecessary and costly healthcare utilization. The "team" may be located in the medical clinic, but it must be interdisciplinary, and it should meet together regularly to discuss inmates from this unit, with input from staff on the unit. In a paper chart system, the charts would ideally be kept on the unit. The most effective and efficient assisted living and dementia units in the free world have clinics on site. Construction of congregate elder housing now often occurs with housing on upper floors and an adult day health center on ground level. Sending inmates from an assisted living unit to medical clinic haphazardly, to be seen by any sick call provider, would squander the cost and quality advantages of the unit.

A 1996 performance review by the California Department of Finance noted that in community hospitals with locked custody units, male and female inmates are routinely housed in adjacent hospital rooms.[114] The review recommended that women have access to specialty and acute care programs in male prisons. Specialty programs, including neurobehavioral units and units for inmates with severe physical impairments, could safely serve male and female inmates.

We recommend vigorous development of specialized units and support programs that can keep inmates at lower levels of care.

Programming for Aging Inmates

The CMF peer counselor survey cited earlier focused on key issues of importance to inmates, including segregation *vs*. GP residence, relationships, work, exercise, hobbies, and activities.

For two decades, reports on aging inmates have discussed the pros and cons of segregated *vs*. GP housing.[115,116] We suggest that the pertinent question is how to implement individualized decision-making that engages the inmate as a responsible participant as much as possible. In addition to severing relationships, segregated housing has often meant loss of opportunities to work and engage in favored activities. There is some evidence that segregated housing inappropriately increases clinic utilization because inmates have nothing better to do.[117]

The policy at Ohio's Hocking Correctional Facility is that all inmates have jobs; inmates have the option of requesting job changes.[118] Mandatory, inappropriate job assignments for elders, on the other hand, can be painful, dangerous, and costly.[119] Some programs allow retirement, which the survey by CMF inmates found to be a popular option.

We have discussed the inmate caregiver role in the context of having younger inmates serve older inmates. Functionally able older inmates, however, may also be good candidates for inmate caregiver positions. Most but not all of the CDCR's local prison caregiver initiatives have focused on hospice and mental health. These programs, with their screening and training systems, can serve as models for expansion to elder care. Elders themselves should be allowed to fill those jobs. Given that many California prisons have a shortage of job opportunities, expansion of caregiver jobs is an obvious win-win.

We recommend that the CDCR offer multiple programming options to aging inmates and include them as candidates for an expanded inmate caregiver program.

Recommendations for Organizational Change

Changing a healthcare system enough to address quality and cost concerns for older patients, whose complex problems consume disproportionate resources, requires essentially whole-system transformation. The principles of geriatrics are consistent with the chronic care model and can serve to guide system redesign.[120] Significant change requires resources, leadership, and strategies that reach deeply into every domain within the organization. It also requires time. The Veterans Health Administration began devoting massive resources to reengineering care in 1995.[121] Kaiser established its Care Management Institute in 1997 and began its multi-pronged safety initiative in 1999.[122]

These efforts have clearly paid off in terms of quality and cost, but they did not do so overnight. The 2001 IOM report, as we noted in our introduction, summarizes the core change strategies as follows:

- Redesign of care processes based on best practices
- Use of information technologies to improve access to clinical information and support clinical decision making
- Knowledge and skills management
- Development of effective teams
- Coordination of care across patient conditions, services, and settings over time
- Incorporation of performance and outcome measurements for improvement and accountability

We have already discussed care coordination in some detail. We will not discuss health information technology (HIT). The CDCR healthcare leadership is well aware that rapid progress with HIT is critical for achieving its aims. Progress to date has been plagued by under-funding, leadership turnover, and bad decisions. Chronic care in organizations that employ HIT is easier and more efficient. A review of physician organizations that made progress in chronic care, however, showed that those with strong leadership and a quality-oriented physician culture could overcome the barriers posed by lack of HIT and financial capital.[123] In this section we will make several recommendations about care process change, knowledge management, teams, and quality improvement. We will point out opportunities for custody and healthcare to develop a common language for change based on evidence from highly-reliable organizations.

Perhaps we should start with what not to do. Updated recommendations that sit on a shelf like the 1999 recommendations will not help. Merely disseminating new standards of care, or sending people for training with no support back home, would be a waste of time and money. Sending in new staff with no support for program development would be a waste.

New geriatric expertise, staff education and training, policies and procedures, efficient and effective forms for documentation, and quality improvement will best occur in the context of on-the-ground program development, as is being done at CMF. The CDCR should continue to invest resources in new program development at the prisons with innovative custody and healthcare leadership.
From these multiple efforts will emerge ever more refined “change packages,” tried and proven processes, forms, and curricula, which other prisons can use. Initiatives are more likely to yield best practices at the highest-functioning prisons. In one California healthcare system, hospitals compete for the chance to participate in new programs. If resources and support accompany new program development, then innovative wardens and healthcare managers will be interested in submitting applications to participate.

The CDCR leadership can help these local efforts by providing:

- Appropriate healthcare and custody staff
- Education and training
- Support for interdisciplinary team development
- Appropriate equipment
- Environmental redesign
- Outside consultation as needed
- A communication infrastructure
- A quality improvement infrastructure

Most of these elements are self-explanatory, and we have discussed several, *e.g.*, the need for appropriate equipment and environmental modifications and the difficulty of securing adequate input from pharmacy, rehabilitation, and geropsychology.

A communication infrastructure is essential if the CDCR is to make progress as a learning organization. We saw staff at each prison struggling with problems and trying to develop procedures and forms without knowing of similar efforts in other prisons. Staff members need ways to share their experiences, resources, problems, and solutions. Champions for a given clinical topic need ways to connect with each other. Easy-to-use, inexpensive intranet sites are now available that could facilitate communication within professional disciplines and across disciplines, focused on a given topic such as, in this case, geriatrics and long-term care. Adequate access to computer terminals is a challenge, but progress will continue in this regard.

A clinical intranet communication system would facilitate dissemination of state-of-the-art educational materials. Considerable expertise will be required to choose from the volumes of mixed-quality materials now available and to develop new materials appropriate for correctional settings. We found examples in every prison of clinicians continuing long-invalidated practices, which will be eliminated only by credible alternatives championed by credible clinical leaders with the CDCR. Even at CMF, as exciting as their programs are, there is still far too much misinformation regarding falls, pressure sores, incontinence, pain, and geriatric mental health.

A full-time CDCR nurse educator with rich connections to free-world, interdisciplinary clinical leaders in long-term care and academic centers should have responsibility for managing communication and materials on the long-term care intranet. That person could be located in one of the prisons developing geriatric programs.

With this modest communication infrastructure, California's correctional healthcare professionals could also engage with national leaders and initiatives. Now would be a good time, in fact, for California to stimulate national initiatives for quality in correctional healthcare. The excitement of participating in national efforts—and leading them—will help sustain program development in local prisons and improve recruitment and retention of staff. Engaging California colleges and universities in research and training inside prisons will also help program development and recruitment.

The CDCR should also make ethics education and consultation available to healthcare and custody staff. In its 2002 report to Congress, the National Commission on Correctional Health Care recommended that Congress establish a national advisory panel on ethical decision-making among correctional and health authorities,[124] a recommendation not yet realized. The Texas Department of Criminal Justice makes ethics rounds and consultations available through the Institute for Medical Humanities.[125]

Telemedicine has been an under-utilized resource in geriatrics, rehabilitation, and palliative care. Academic centers now have geriatrics departments with telemedicine capacity. Beyond providing direct care, telemedicine consultations are themselves a training tool for the remote professionals who are with the inmate during the consultation.[126] Telemedicine can also be used for staff education on clinical topics and non-clinical topics such as interdisciplinary communication.[127]

Earlier we cited the $1,474,000 in savings reported by the Utah Department of Corrections for 2002. As part of this effort, Utah leaders fundamentally altered lines of authority and speeded decision-making within the department. They also created an organizational structure "that placed nursing at the cornerstone of all functions."[128] The lack of stable and strong executive nursing leadership is a glaring weakness in the CDCR. Little progress in geriatrics and long-term care will occur, and less will be sustained, if the CDCR does not develop and support courageous and credible nursing leadership.

The IOM found that "strong nursing leadership is needed in all healthcare organizations in order to (1) represent nursing staff and management to each other and foster their mutual trust, (2) facilitate the input of direct-care nursing staff into decision making on the design of work processes and work flow, and (3) provide clinical leadership in support of knowledge acquisition and uptake by nursing staff."[129]

Lessons from nurses and organizational change apply to other professionals as well: "Researchers found that nurses tended to practice "first-order" problem solving, that is, fixing the immediate problem without communicating that it occurred, investigating why it occurred, or seeking to change its cause.... Second-order problem solving, in contrast, occurs when a worker, in addition to fixing the problem so the task at hand can be completed, takes action to address the underlying cause.... At hospitals characterized by second-order problem solving, either nurse managers were a strong presence on the floor, or there was a designated person available to provide guidance and support to nurses."[130]

We referred above to the critical role of a quality-oriented physician culture. Development of that culture begins with the recognition that physicians as a whole have been poorly trained to work in interdisciplinary teams and to assist in improving systems of care. The Accreditation Council for Graduate Medical Education (ACGME) has now established six core competencies:[131]

1. Patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health
2. Medical knowledge about established and evolving biomedical, clinical, and cognate (*e.g.* epidemiological and social-behavioral) sciences and the application of this knowledge to patient care
3. Practice-based learning and improvement as manifested by the ability to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices
4. Interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates
5. Professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population
6. Systems-based practice as manifested by responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value

The CDCR should recognize physicians who excel in these domains and use these physicians to assist others in developing these competencies. Measures of the competencies should be part of routine physician performance evaluations. Strong medical leadership will be needed to forge teams capable of delivering effective and efficient chronic and long-term care. The CDCR can again draw lessons from its interdisciplinary mental health teams in developing mature teams on the medical side.

Reports from several successful geriatric initiatives emphasize the importance of recruiting and selecting appropriate individuals among healthcare and custody staff rather than relying on seniority and bidding for positions.[132,133,134] Not everyone has the aptitude to serve impaired older people. The CDCR and its unions should revisit current "post and bid" agreements.

It would be naïve to think that all individual clinicians now working in the CDCR (physician, nurse, mental health, social work, rehabilitation, and ancillary staff) can demonstrate or develop the professionalism and skill sets requisite for community-standards healthcare. We have seen remarkable examples of unprofessional behavior and attitudes of disregard toward inmates and other staff members. The nursing literature has documented the deleterious effect that unprofessional clinicians can have on the morale of other clinicians.[135] Successful recruitment and retention of competent staff will require developing a culture of professional responsibility.

Perceived Conflicts Between Custody and Healthcare

We heard many comments from both correctional officers and healthcare staff about conflicts between custody and healthcare. The medical literature is replete with perceived conflict, *e.g.*, "Security requirements almost always trump clinical needs."[136] In the context of aging inmates, especially those impaired or dying, the conflict seems heightened. "It is precisely at the end of life that the goals of medicine—diagnose, comfort, cure—and the mandate of corrections—to confine and punish—clash most directly."[137] Many would dispute the mandate of corrections, however. The American Psychiatric Association position statement affirms, "There is no inherent conflict between security and treatment."[138]

We commend the CDCR for investigating these perceived conflicts in its 2005 organizational culture assessment at Corcoran State Prison, carried out by the Criminal Justice Institute:[139]

> *"A significant divide remains between many of the security staff and health care staff because of the belief held by most security staff that inmates are not entitled to the level of health care (and other programs and services as well) that the courts and others say they should receive. This fundamental disconnect between "treatment" and "custody" plays out in all functional areas of the prison, and represents a conflicting value of the highest order."*
>
> *"Moreover, many custody and non-custody staff are resentful of what appears to them to be unlimited inmate access to health care, believing that inmates do not deserve it. Comments such as, 'if my family doesn't have this good of care, why should an inmate?' and 'if an inmate didn't have healthcare as a free person, he shouldn't get it here on the inside' were often heard from staff."*

Only by confronting such conflicts can we hope to work past them. The Criminal Justice Institute assessment concludes on some very positive notes: "Corcoran's staff definitely desire a more rewarding and supportive culture that emphasizes consensus building and structure along with flexibility and discretion, but with fewer prescribed dictates." And finally, "The time is clearly right for culture change at Corcoran."

Quality Improvement and High Reliability

The CDCR currently lacks the tradition, staff and information infrastructure, and knowledge base to do vigorous quality improvement at either local prisons or the state level. Peer review is tattered or non-existent. Overcoming these deficits is critical to the overall effort to address quality and cost concerns. Doing so will require an explicit commitment of resources and infusion of expertise. Local initiatives in geriatrics and long-term care offer a wonderful opportunity to teach basic quality processes such as sentinel event investigation and root cause analysis, as well as rapid-cycle, data-driven improvement cycles, iteratively improving procedures, forms, and working relationships.[140,141,142] These quality initiatives can help generate the performance and outcome measurements necessary to stimulate and sustain change.

The CDCR also needs staff with expertise in packaging programs for dissemination. Local clinicians and custody staff may enthusiastically develop great new practices, but they rarely have adequate time, desire, and skills to develop tools and policies that would enable easy adoption by other prisons.

Local and statewide healthcare quality improvement initiatives will succeed only in collaboration with custody leadership. Systems thinking is characterized by critique of boundaries and the effects of "outside" forces.[143] In corrections, healthcare is embedded in custody. Both are embedded in state government and in civic and professional communities. The Corcoran organizational culture assessment illustrated both the boundaries and interdependence of healthcare and custody. Healthcare and custody need common language to bridge the boundaries between them. Evidence-based practice, "the conscientious, explicit, and judicious integration of current best evidence,"[144] offers some of the requisite common language. Although healthcare claims credit for developing the concept of evidence-based practice, the IOM acknowledges that "the use of systematic research findings for evidence-based practice is also supported and applied in the fields of education, criminal justice, and social welfare."[145]

Even more promising as a source for common language is recent work using "high-reliability" principles in health system redesign. High-reliability organizations succeed at reducing risks associated with hazardous operations. The IOM has described high-reliability organizations in several of its reports[146,147] and leading quality organizations have been disseminating high-reliability principles and tools.[148,149] Most of these principles were derived from decades of work in the military, law enforcement, and emergency services. High-reliability organizations develop a strong safety culture, utilize personnel and equipment redundancy (back-up systems), promote inter- and intragroup communication, cross-train personnel, and focus attention on errors and near-misses without wrongfully blaming individuals for vulnerabilities in work process and design.[150]

To implement these principles, executive leadership must create the conditions for responsible decision-making and innovation among mid-managers and line staff. "Studies of high-reliability organizations show that effective decision-making is flexible decision-making, pushed to the lowest level commensurate with available knowledge. For example, any level of military personnel on an aircraft carrier can call a halt to a flight operation if he or she sees what looks like a dangerous situation."[151] Naval aircraft carriers reduced their number of aircraft catastrophes from 776 in 1954 to 26 in 2003 by developing these principles.[152]

The 2001 IOM report asserts, "It's more helpful to think like a farmer than an engineer or architect in designing a health care system."[153] What California's prison healthcare most needs is not a blueprint drawn in a central office. Rather, the leadership needs to develop a communications and management infrastructure that can facilitate innovation, evaluate variation, and select best

practices to disseminate. The IOM suggests crafting "simple rules," sometimes called minimum specifications, which staff can then use to redesign processes at the ground level.

> *Creative progress towards a difficult goal can emerge from a few, flexible, simple rules, or so called minimum specifications. However, current organisational thinking is built largely on the assumptions that plans for progress must provide the "best" way, completely specified in great detail, and consistently implemented in that same level of detail across the board. This thinking… fails to take advantage of the natural creativity embedded in the organisation, and fails to provide for the inevitable unpredictability of events.*[154]

The rules may be imperfect and provisional, so long as they "provide wide space for innovation and encourage shared action.[155] A simple rule for managing aging inmates, for example, could be to keep them at the lowest practicable level of care.

New simple rules may need to compete with the simple rules already entrenched in an organization's culture. In healthcare, the IOM formulated 10 traditional rules and recommended 10 new rules that organizations are using to transform healthcare delivery. For example, the old rule, "'Do no harm' is an individual responsibility," should be replaced with a new rule, "Safety is a system property."[156]

The Corcoran organizational culture assessment found a punitive, "extremely unforgiving" culture within custody, so one of the simple rules already in place there is to follow only written instructions.[157] If interdependent employee groups, such as healthcare and custody, use different sets of simple rules, as evident in the Corcoran report, the result is conflict, dysfunction, and frustration.

As outside healthcare consultants, we do not know the extent to which CDCR custody leaders are using and teaching organizational change strategies. We do know that high-reliability principles in particular offer custody and healthcare staff a shared safety-and-quality language and set of principles that have earned credibility in both law enforcement and healthcare.[a] We recommend that CDCR custody and healthcare leaders jointly begin a high-reliability initiative informed by outside experts and piloted first at a single prison with the goal of developing common language and teachable simple rules to promote custody-healthcare collaboration.

[a] For additional ideas about common language, see Appendix D.

Placement Alternatives

The 1999 California report[158] discussed various options for aging inmates both inside and outside the prison system:

- It strongly recommended development of assisted living units within prisons, as reiterated here.
- It suggested that the CDCR could operate off-site, "out-based" correctional nursing homes with minimal custody staff for inmates not posing serious risk to the community. The facilities would have fenced and landscaped buffer zones. Because of the inmates' minimal risk to the community, they would not require full formula custody coverage.
- It raised the options of sending inmates to contracted community nursing homes with supplemental custody staff, as was being done in New Jersey. The CDCR now uses this model for some of its community hospital care.
- It discussed the Project for Older Prisoners (POPS), which assesses nonviolent elderly inmates for early release. Started by Jonathan Turley in 1989, POPS has been a very successful partnership between law schools and departments of corrections. It has not yet been tried in California.
- It discussed increasing compassionate release referrals and contesting return of senile and psychiatric cases.

As we noted earlier, predicting cost savings from such options is difficult given the lack of good data on older inmates' healthcare and custody costs. Operating correctional nursing homes or contracting for nursing home care with reduced custody coverage would reduce custody costs. California legislation approved in 2003 (SB 549) authorized the CDCR to contract for skilled nursing facility services for inmates. But the surest way to reduce healthcare costs for an inmate population is to reduce the size of the population. For our current older inmates, the most cost-effective strategies are early release or compassionate release.

A paroled inmate can qualify for Medicaid benefits, paid out of shared federal and state funds, and for federal Medicare benefits, which cover the costs of nursing home, physician, and hospital care, should they be necessary. The CDCR must bear all those costs alone. Not all impaired inmates will need institutional long-term care. The 2005 Pennsylvania report noted, "Paroling an inmate with a serious illness or injury, geriatric condition or terminal illness to the care of family members or friends appears to be the only way to accomplish real cost savings. Unfortunately, not all inmates have family members or friends, and not all family members or friends are willing or able to assume this responsibility."[159]

The Virginia report recognized that only a minority of potentially appropriate inmates could be released. Even so, if 15% of those meeting "geriatric release" criteria could be released (60+ with 10 years served or 65+ with 5 years served unless convicted of homicide), the savings would come to $2,173,810 annually.[160]

While further analysis is beyond the scope of this report, we encourage the CDCR to engage other California stakeholders in a discussion of alternatives to the most costly forms of care for aging and impaired inmates.

Summary of Findings and Recommendations

Summary of Findings

The aging inmate crisis has been an unexpected and expensive consequence of our crime-control policies, one that California has noticed but not begun to resolve. The population of aging male and female inmates is large, growing, and costly, with significant burdens of chronic disease and impairments in cognition, mobility, and function.

Inadequate care for older inmates is consistent with other shortcomings within CDCR healthcare. For free-world hospitals and nursing homes, survey processes provide a floor beneath which quality must not fall, and incentives are emerging that reward superior care. There are no such floors or incentives for the quality of healthcare in California prisons, much to the consternation of its many competent and committed professionals. The results have entailed unnecessary suffering and expenditures.

Pilot work on elder care programs at CMF in 2005 was swift and visionary. Elsewhere we found examples of excellent care and excellent programs. Overall, however, the CDCR has not yet made significant progress in grappling with its burgeoning older inmate population. There has been no serious attempt to carry out the physical plant and program modifications recommended in the department's 1999 internal report on aging inmates.

Healthcare staff members work in a data-poor environment. The CDCR central office lacks the capacity to produce the most basic demographic and cost data essential for good management. The Placement Unit's long-term care dataset and *Armstrong* ADA dataset are both missing large portions of inmates. There is no way to proactively identify the inmates who are high-cost and high-risk. Chart documentation of diagnoses is very often incomplete, and there is no centralized database of older inmates' functional status or diagnoses.

We found inmates at OHU, CTC, GACH, and SNF levels of care who should be at lower levels of care. We found inmates in the general population with serious unmet needs. There are no assisted living or adult day health programs that could manage impaired inmates at lower costs. Inmate caregiver programs are small, variable, and inadequate. Innovation and program development in one prison is isolated from similar work in other prisons. Court-mandated programs, *e.g.*, *Plata*, *Coleman*, and *Armstrong*, operate separately within rigid, dysfunctional barriers. Knowledge and practice of quality improvement is inadequate in local prisons and statewide.

We found unacceptable vacancy rates in nursing and pharmacy, inadequate access to dietitians and rehabilitation therapists, and no job categories for recreation therapists or certified nursing assistants. To our knowledge, there are no geriatricians or physiatrists in the CDCR.

The CDCR lacks adequate expertise in common geriatric conditions such as dementia, geriatric mental health, pain, contractures, pressure sores, weight loss, incontinence, and falls. Equipment for managing these conditions is inadequate or absent. Advance care planning programs and ethics resources are absent. Prior to the Lumetra work, there was no training for correctional officers or healthcare staff regarding the needs of older adults. There is no systematic attempt to preserve function in frail inmates. Impaired inmates are difficult to place when paroled, resulting in a parole holdover list at significant cost to the CDCR.

Because cognitive and functional status is not routinely collected, there is no way for custody to incorporate this information into placement and work assignments for aging inmates. Cognitive assessments are not routinely done as part of the disciplinary process of aging inmates.

We found that correctional officers are an invaluable source of information about aging inmates and are eager to share what they know.

We have argued that implementation of the chronic care model with care coordination, interdisciplinary teams, and geriatric expertise is the best way—perhaps the only effective way—to address the CDCR quality and cost concerns. We have recommended developing a continuum of specialized units and support programs that can keep inmates at lower levels of care, including adult day health centers, neurobehavioral units, assisted living, and caregiver programs for the general population. Although these strategies will require up-front investments, there is evidence from both the free world and corrections that failure to pursue these strategies will be even more expensive.

We have recommended that the CDCR follow through on its 1999 recommendations to ensure environmental safety and access to meals, exercise, and recreation for geriatric or disabled inmates.

We have argued that the CDCR should pursue all six IOM strategies for change: care process redesign, information technology, knowledge and skills management, effective teams, coordination of care, and performance and outcome measurement. The CDCR must get these levers of change firmly in place. Failing that, a few years of reasonably good management will not produce fundamental change.

We applaud the CDCR for beginning to look at its own organizational culture. The IOM strategies and the principles used by high-reliability organizations offer a common language and direction for engaging the cultures of both custody and healthcare.

Recommendations

The CDCR asked us to assess current gaps in services for aging inmates and make recommendations for closing those gaps. The following recommendations, all discussed in the body of this report, emerged from our survey data, direct observations, and/or the literature cited.

Where possible, we have tried to go beyond abstract standards to formulate the recommendations that California can reasonably implement in 2006-2007. The recommendations would be easier with good information systems in place, but they can succeed without complex new technologies. Severe overcrowding in California prisons is a barrier, but these initiatives do not require significant new space.

We have clustered these recommendations by topic area, but as outside consultants we do not have access to the information needed to sort them by cost or sequence. A single initiative, *e.g.*, telemedicine consultation, could address multiple recommendations.

Our experience suggests that, given appropriate resources and support, healthcare and custody staff will welcome new programs that meet the needs of aging inmates. We look forward to their creativity. The current crisis of quality and cost is an opportunity for transformation.

Integrated Care Management Using a Continuum of Settings and Services

1. The CDCR should:
    a. Develop a continuum of settings and services for aging and disabled inmates.
    b. Develop an integrated care management system coordinated with the current chronic care, disability, and mental health programs.
    c. Assign inmates to settings and services based on their individual needs for physical and mental health and rehabilitation.
    d. Keep inmates at the lowest practicable level of care.

2. All inmates at reception centers should get a brief functional screen for functional impairment. Inmates age 55+ should get annual screens as well as medical checkups and preventive care. Inmates with positive screens should get nursing assessments using standardized instruments for physical and cognitive function.
    a. The assessments should guide a clinical assignment to continued annual screening, to moderate-level care management, or to intensive care management.
    b. The assessments should also guide a joint custody-healthcare decision regarding prison, unit, and work assignments.
    c. Correctional officers should be encouraged to make care management referrals, and care managers should communicate with correctional officers.

3. The CDCR should expand its capacity of special needs yards and develop new assisted living units to complement its OHU, CTC, GACH, and SNF beds.
    a. The CDCR should modify rules prohibiting oxygen, medical supplies, and catheters on GP and special needs units.
    b. The CDCR should develop procedures for selection and training of custody staff assigned to special needs and assisted living units.

4. The CDCR should expand its inmate caregiver programs. Capable older inmates themselves should be encouraged to work as inmate caregivers with modified assignments if needed.

5. The CDCR should develop an adult day health services model of care for GP inmates.

6. The CDCR should develop at least three neurobehavioral units with neuropsychology and behavioral health competencies.

7. Older inmates should get routine referrals for cognitive assessments in the disciplinary process for rules infractions, and there should be an informal grievance process for cognitively impaired inmates.

Interdisciplinary Teams and Expertise

8. The CDCR should develop interdisciplinary expertise and capacity in geriatrics.
    a. The CDCR should develop geriatrics education and training resources for healthcare and custody staff.

b. Physicians and nurses on teams managing aging inmates should have access to geriatric expertise, and their practice should be guided by up-to-date policies and procedures.

c. The CDCR should use telemedicine to bring geriatric expertise to remote prisons.

9. The CDCR should develop interdisciplinary expertise and capacity in physiatry and rehabilitation, *e.g.*, to meet the needs of inmates with traumatic brain injury and to prevent pressure sores in wheelchair-bound inmates.

10. Impaired inmates should have access to effective interdisciplinary teams using individualized care plans, either unit-based, *e.g.*, in CTCs, or clinic-based, e.g., for inmates in special needs yards.

    a. The CDCR should continue to expand the use of nurse practitioners and physician assistants.

    b. Pharmacists should be available to do drug usage evaluations and drug regimen reviews with particular attention to medications that are potentially inappropriate for the elderly or that interact adversely with other drugs or clinical conditions.

    c. Dietitians should be available to assist with assessments for unintended weight loss and special diets.

    d. The CDCR should create and fill job categories for recreation therapists and certified nursing assistants (CNAs) on units serving aging and disabled inmates.

11. Teams serving aging and disabled inmates should have adequate equipment such as “low-low” beds, fitted wheelchairs, and working Hoyer lifts.

12. The CDCR should develop:

    a. Model advance care planning programs that offer end-of-life education and choices and that account for limited health literacy.

    b. Ethics education and consultation for healthcare and custody staff

13. Care managers should:

    a. Provide healthcare education to inmates.

    b. Facilitate peer-led education and groups.

    c. Promote self-management of chronic illness.

    d. Offload routine paperwork from primary care providers.

    e. Facilitate connections to veterans organizations, aging network agencies (mandated by the Older Americans Act), and other community organizations, throughout incarceration and pre-release.

Environmental and Program Modifications

14. The CDCR should assure that aging and disabled inmates are in settings with appropriate:

    a. Cell, shower, and toilet modifications

    b. Lighting and signage

    c. Environmental temperature control

d. Flat and even walking terrain

e. Ground-level housing

15. The CDCR should assure that aging and disabled inmates have:

    a. Lower bunk assignments

    b. Limited walking distance to dining hall, recreational space, and clinics

    c. Sufficient time to complete activities

    d. Access to toilets during exercise and activities

    e. Work programs modified as needed

    f. A retirement program

16. The CDCR should modify requirements to stand for head counts, to stand in line, *e.g.*, for meals and medications, and to drop to ground for alarms.

Organizational Change

17. The CDCR should develop and support local and statewide nursing leadership.

18. The CDCR should recognize physicians who excel in the six core competencies established by the Accreditation Council for Graduate Medical Education.

19. Evaluation of communication skills, teamwork, and professionalism should be part of the performance evaluations of clinicians.

20. The CDCR should develop a communication infrastructure that facilitates intra- and interdisciplinary problem-solving and best practice dissemination.

21. The CDCR should develop a quality improvement infrastructure at local prisons and statewide with:

    a. Vigorous peer review

    b. Expertise in sentinel event investigation and root cause analysis

    c. Support for clinical teams to do data-driven, rapid-cycle improvement projects

    d. Clinical performance and outcome measurements

22. The CDCR should:

    a. Engage with or initiate national initiatives in correctional health.

    b. Engage California colleges and universities in research and training inside prisons.

23. The CDCR should relentlessly develop and support collaborative leadership of custody and healthcare at local prisons and statewide.

    a. The CDCR should launch a high-reliability initiative to develop a common language and implement a common practice of safety in custody and healthcare.

24. The CDCR and other California stakeholders should engage in a thoughtful pursuit of alternatives to the most costly forms of care for aging and impaired inmates.

Appendix A: Sampling and Analytic Strategy

General Analytic Strategy

We used a multi-stage stratified cluster sampling method for the survey. This type of sampling method (cluster sampling and stratification) was used for two reasons, which are explained in detail below. Use of this design requires that weights be applied to the sample to derive descriptive statistics of the California prison population. Our results are adjusted (or weighted) to describe a statistical estimation of characteristics for the entire California inmate population. Data from inmates selected by correctional officers because of a special concern for them were analyzed separately as they were not part of the random sample.

Clustering of Prisons

We first identified 12 of the 33 existing California adult prisons most likely to have the largest number of geriatric inmates. The CDCR medical leadership suggested several changes to the 12. The CDCR data management office sent us a list of all geriatric inmates aged 55 and over residing in these facilities on July 10, 2005. This list contained each inmate's CDCR number, full name, age, birth date, gender, and specific location (facility, yard, cell, and bunk number) as of this date. A discussion with the Health Care Manager of Ironwood State Prison revealed that this site had no medical long-term care inmates and only several 55+ GP inmates, so we did not visit this site. In the 11 remaining prisons (10 men's facilities, 1 women's facility), there were 3,554 inmates (3,411 men, 143 women) aged 55 and older. These 11 prison facilities are treated as clusters in the analysis of the data using special software (Stata) that takes this into account simultaneously with the sampling weights (described below). The clustering is an analytic approach that recognizes that inmates sampled from within each prison may have more in common with each other than inmates at other prisons.

Gender and Facility Stratification

We wanted the proportion of male inmates in our sample from each facility to reflect the proportion of male inmates in the total population from that facility. For example, since there were 168 men at the Corcoran facility, or about 5% in total, about 5% of our sample would be from Corcoran (see Table 9). The first sampling weight applied to each person was calculated as the inverse of the exact probability of being sampled given their gender and facility. We wanted the proportion of female inmates in our sample to be double the proportion of women on the list of 3,554 inmates at the 11 facilities. Since there were 143 women out of 3,554 inmates on the CDCR list, or about 4% women in total, our sample would contain about 8% women (all from California Correctional Women's Facility at Chowchilla).

Table 9. CDCR Population *vs.* Sample Population by Gender and Facility

Facility*	Population Known by CDCR†, N (%)	Lumetra Sample, N (%)
ASP (Avenal State Prison)	523 (15)	88 (14)
CCWF (Central California Women's Facility)	143 (4)	52 (8)
CIM (California Institute for Men)	178 (5)	32 (5)
CMC/CMCW (California Men's Colony)	539 (15)	96 (15)
CMF (Men)	172 (5)	50 (8)
COR (California State Prison, Corcoran)	168 (5)	32 (5)
MCSP (Mule Creek State Prison)	323 (9)	52 (8)
RJD/RJDC (RJ Donovan Correctional Facility)	248 (7)	55 (9)
SATF (Substance Abuse Treatment Facility)	565 (16)	89 (14)
SQ/SQRC (San Quentin)	323 (9)	64 (10)
SVSP (Salinas Valley State Prison)	157 (4)	32 (5)

†CDCR list of inmates 55 and older in 11 prisons as of 7/10/05

Age Stratification

Next, we identified 4 age groups of interest to us: 55-59, 60-64, 65-69, and 70+. Our goal was to randomly select inmates so that there would be an approximately equal number of inmates within each age group, so we under-sampled the youngest age group and over-sampled the two oldest age groups. For example, there were 1,852 inmates in the 55-59 age group out of the 3,554 inmates on the CDCR list, or about 52% in total, but our final sample only contained about 25% in the 55-59 age group. There were 383 inmates in the 70+ group in the total population, or about 11% in total, but our sample still contained about 25% in the 70+ group (see Table 10). Therefore, the second sampling weight applied to each person was calculated as the inverse of the probability of being sampled given their age group.

Table 10. CDCR Population *vs.* Sample Population by Age Group

Age Group	Population Known by CDCR†, N (%)	Lumetra Sample, N (%)
55-59	1852 (52)	161 (25)
60-64	883 (25)	157 (25)
65-69	436 (12)	162 (25)
70+	383 (11)	162 (25)

†CDCR list of inmates 55 and older in 11 prisons as of 7/10/05

We also allowed custody staff to identify additional geriatric inmates about whom they had concern. Overall, correctional officers identified an additional 55 general population geriatric inmates about whom they had concerns. Since these inmates were not part of our random sample, we conducted our main analyses excluding them.

We anticipated that we would not be able to get data from staff or charts on a portion of the inmates, so our random sample included an alternates list. As described in the text, we asked medical records staff to pull charts for our visit so that we could obtain diagnostic data. Table 11 shows the percentages of charts available.

Table 11. Percent of Medical Charts Available for Review

Facility	Chart Access, N (%)
ASP	75 (85)
CCWF	32 (62)
CIM	20 (63)
CMC/CMCW	78 (81)
CMF	37 (74)
COR	15 (47)
MCSP	40 (77)
RJD/RJDC	37 (67)
SATF	75 (84)
SQ/SQRC	14 (35)
SVSP	21 (66)

Appendix B: Survey Instrument

The following pages show the survey instrument used to gather information from nurses on inmates in medical beds.

An abbreviated instrument was used to gather information from correctional officers on inmates in the general population. The custody version did not include diagnostic questions, for example, or the question, "Would you be surprised if this inmate died within the next 12 months?" The instrument did include the questions:

- Do you feel the inmate is physically or medically unsafe in his/her current location?
- Do you feel the inmate will need to move to a higher-care location within the next year?

1 Lumetra

1.1.Date of interview	1.2 Lumetra O BW O KL O TH O GC Other:	1.3 Chart available O yes O no

2 Patient/inmate

2.1 CDC #	2.2 Name	2.3 Selected from O LTC O Sample O Other

2.4 Current housing assignment O Hospital O CTC O OHU O General population O Other:

2.5 Facility

O AVE O CCW O CCWRC O CIM O CIM-E O RCC O RCW O CMC O CMC-W O CMF
O CSP-S O COR O ISP O MCSP O RJD O RJDC O SATF O SQ O SQ-RC O SVSP

3 CDCR staff interviewed

3.1 Staff Name(s)	O RN	O LVN	O MD	O Other:

3.2 How well do you know the inmate? O Very well O A little O Not at all

3.3 Last time you assessed the inmate? O Within a week O Within a month O Within 6 months O Over 6 months O Never

4.1 Current diagnoses

Endocrine/metabolic/nutritional
- O Diabetes mellitus
- O Nutritional disorder
- O Thyroid disorder

Heart/circulation
- O Arteriosclerotic heart disease
- O Cardiac dysrhythmias
- O Congestive heart failure
- O Hypertension
- O Hypotension
- O Peripheral vascular disease
- O Other cardiovascular disease

Infection
- O Pneumonia
- O Sexually transmitted diseases
- O Tuberculosis
- O Urinary tract infection
- O Viral hepatitis
- O Wound infection

Musculoskeletal
- O Arthritis
- O Severe hip arthritis
- O Osteoporosis

Neurological
- O Cerebral palsy
- O Cerebrovascular accident (stroke)
- O Dementia including Alzheimer's
- O Hemiplegia/hemiparesis
- O Multiple sclerosis
- O Paraplegia
- O Parkinson's disease
- O Quadriplegia
- O Seizure disorder
- O Traumatic brain injury/head trauma

Psychiatric/mood
- O Anxiety disorder
- O Depression
- O Manic depression (bipolar dis)
- O Schizophrenia

Pulmonary
- O COPD/asthma

Other
- O Anemia
- O Cancer
- O Renal failure
- O Dysphagia (difficulty swallowing)
- O Substance abuse
- O Benign prostatic hypertension (BPH)

4.2 Other diagnoses not listed above:

5.1 Modes of locomotion (check all that apply during last **7 days**)

- O Cane/crutch
- O Walker
- O Standby assistance
- O Transfer aid, e.g., slide board, trapeze, cane, walker, brace
- O WC is primary mode of locomotion
- O Wheeled self in WC
- O Other person wheeled WC
- O Bedfast all or most of time
- O Lifted manually
- O Lifted mechanically

	None	Recent (in past 90 days)	Remote	Don't know	Frequent
5.2 H/o falls	O	O	O	O	O

6 ADL support provided (indicate the most support provided over all shifts during the last **7 days**)

	Independent	Supervision or limited assistance	Extensive assistance or total dependence	Activity did not occur (because)	Don't know
6.1 Bed mobility	O	O	O	O	O
6.2 Transfer	O	O	O	O	O
6.3 Walk in room	O	O	O	O	O
6.4 Walk in corridor	O	O	O	O	O
6.5 Dressing	O	O	O	O	O
6.6 Eating	O	O	O	O	O
6.7 Toilet use	O	O	O	O	O
6.8 Personal hygiene	O	O	O	O	O
6.9 Bathing	O	O	O	O	O

7 Continence in last 14 days

	No incontinence	Occasional incontinence (less than daily)	Daily incontinence	Don't know
7.1 Bowel	O	O	O	O
7.2 Bladder	O	O	O	O

8.1 Appliances and programs

O External (condom) catheter
O Indwelling catheter
O Intermittent catheter; by whom: _____
O Pads/briefs used
O Enemas/irrigation
O Ostomy present: _____
O CPAP
O Orthotic device (brace, splint, prosthesis, etc.)

9.1 Other medical requirements

O Fingersticks at least daily
O Insulin injections
O Dialysis
O Suctioning
O Oxygen therapy
O Chronic pain
O Contractures
O Physical restraint(s)—not including siderails
O Hearing aid
O Pressure sore/wound
O Other:

10 Cognitive patterns

10.1 Short-term memory— seems/appears to recall after 5 minutes	O Memory OK	O Memory problem
10.2 Long-term memory— seems/appears to recall long past	O Memory OK	O Memory problem

10.3 Memory/recall ability (check all that inmate was normally able to recall during last 7 days)

O Current season
O Location of cell
O Staff names/faces
O That she/he is in prison
O None of the above was recalled
O Staff does not know

	None	Mild	Moderate	Severe
10.4 Dementia or cognitive impairment	O	O	O	O
10.5 Developmental disability, retardation	O	O	O	O

10.6 Cognitive skills for daily decision-making (made decisions regarding tasks of daily life)

O Independent— decisions consistent/reasonable
O Modified independence— some difficulty in new situations in new situations only
O Severely impaired— never/rarely made decisions
O Staff does not know

Examples: Choosing items of clothing; knowing when to go to scheduled meals; using environmental cues to organize and plan (e.g., clocks, calendars, posted listings of upcoming events); in the absence of environmental cues, seeking information appropriately (i.e., not repetitively) from others in order to plan the day; using awareness of one's own strengths and limitations in regulating the day's events (e.g., asks for help when necessary); making the correct decision concerning how to get to the lunchroom; acknowledging need to use a walker, and using it faithfully.

11 Behavioral symptoms in last 7 days

	Behavior did not occur	Occurred less than daily	Occurred daily
11.1 Verbally abusive	O	O	O
11.2 Physically abusive	O	O	O
11.3 Socially inappropriate/disruptive	O	O	O
11.4 Resists care	O	O	O

H/o Aggression

	None	Recent (in past 90 days)	Remote	Don't know
11.5 H/o aggression to staff	O	O	O	O
11.6 H/o aggression to other inmates	O	O	O	O
11.7 H/o aggression from other inmates	O	O	O	O

12 Other impairments

	None	Mild	Moderate	Severe
12.1 Vision impairment	O	O	O	O
12.2 Hearing impairment	O	O	O	O
12.3 Speech impairment or aphasia	O	O	O	O

13 Affect

13.1 Would you say inmate appears sad, blue, or depressed?	O No	O Yes
13.2 Would you say inmate appears anxious or nervous?	O No	O Yes

14 Language

14.1 Can communicate in English O Yes O No O Non-communicative

14.2 Primary language O English O Spanish O Chinese O Other:

15 Severity of disease

15.1 Would you be surprised if this inmate died within the next 12 months? O Yes O No

17.1 What would help you improve his/her care?

DEFINITIONS

Bed Mobility — How the inmate moves to and from a lying position, turns side to side, and positions body while in bed.

Transfer — How the inmate moves between surfaces — i.e., to/from bed, chair, wheelchair, standing position. Exclude from this definition movement to/from bath or toilet, which is covered under Toilet Use and Bathing.

Toilet Use — How the inmate uses the toilet room, commode, bedpan, or urinal, transfers on/off toilet, cleanses, changes pad, manages ostomy or catheter, and adjusts clothes.

Personal Hygiene — How the inmate maintains personal hygiene, including combing hair, brushing teeth, showering, applying makeup, and washing/drying face, hands, and perineum. Exclude from this definition personal hygiene in baths and showers, which is covered under Bathing.

Bedfast all or most of the time — Inmate is in bed or in a recliner in own room for 22 hours or more per day. This definition also includes inmates who are primarily bedfast but have bathroom privileges. Code this item when it was true on at least 4 of the last 7 days.

Appendix C: Functional Impairments and Support

Basic and Instrumental Activities of Daily Living

Activities of daily living (ADLs) are the basic activities necessary for self-care or care by others. Most federal survey instruments[a] include six ADLs: bathing, eating, dressing, toileting, transferring in/out of bed or chairs, and walking. The Minimum Data Set (MDS) includes nine items: bathing, eating, dressing, toileting, transferring, bed mobility, walk in room, walk in corridor, and personal hygiene. Researchers sometimes report on five ADLs as a group (bathing, eating, dressing, toileting, transferring) and report on walking/mobility separately. We chose this approach in our report.

Researchers variably score ADLs as dependent (*vs*. independent) if the person has difficulty with the activity, requires supervision, or requires assistance from another. Some score three levels: independent, difficult, and dependent. The MDS scores five levels: independent, supervision, limited assistance, extensive assistance, and total dependence. We used the MDS terms but combined them into three levels: independent, supervision/limited assistance, extensive assistance/total dependence. We described inmates as impaired in an ADL if they required supervision; in correctional settings, supervision usually requires presence of paid staff.

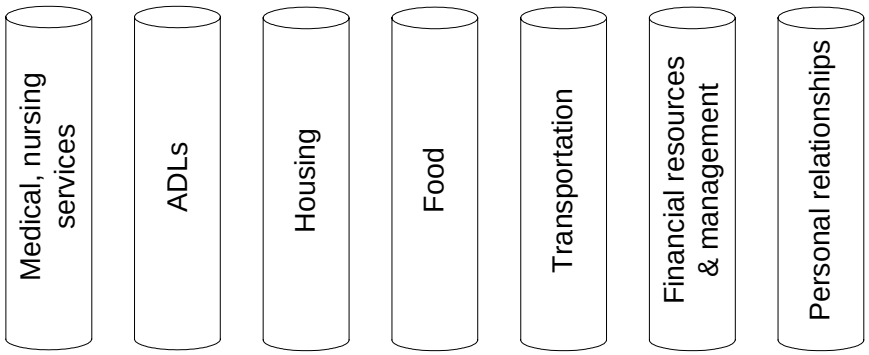
Instrumental activities of daily living (IADLs) are more challenging, higher-level activities necessary for living in the community, such as shopping, housework, accounting/finances, food preparation, and transportation.

Prison-specific functional activities, or "prison activities of daily living" (PADLs) include dropping to the floor for alarms, standing for head count, climbing on and off the top bunk, getting to the dining hall for meals and hearing orders from staff. Impairment in these activities is much more common than impairment in basic ADLs.[161]

Full-fledged functional assessment considers needs and resources in multiple domains that often overlap and interact (see Figure 12). These domains include medical and nursing services, ADLs, IADLs, housing, food, transportation, finances, emotions, behavior, personal relationships, and work. For individuals with functional impairment, personal safety issues often arise in many of these domains. In the prison setting, staff manage most instrumental ADLs for inmates, including housing, shopping, and transportation. Inmates have limited ability to do self-care for minor injuries or for chronic illness.

[a] National Health Interview Survey, Medicare Current Beneficiary Survey, National Long Term Care Survey, National Nursing Home Survey, described at www.agingstats.gov/chartbook2000/datasources.html.

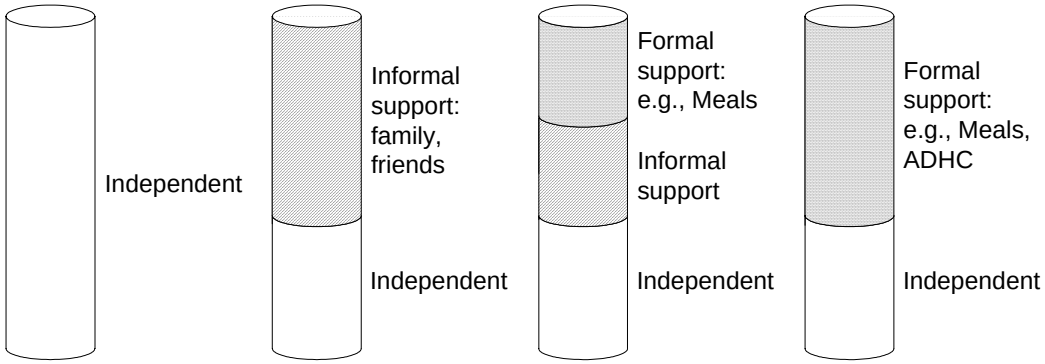
Figure 12. Examples of Functional Assessment Domains



Informal and Formal Support in the Free World and Prison

Informal support refers to unpaid services such as family, friends, and neighbors. Formal support refers to services received through an agency that is reimbursed. Figure 13 shows four free-world examples. The assessment process could reveal that a person is independent in ADLs. Another might be only partially independent but get adequate informal caregiving support from family and friends. Another, also partially independent, could get ADL needs met with a combination of informal support and formal support services such as Meals on Wheels and In-Home Supportive Services (IHSS). Another may have no informal caregivers but could live independently with formal supports such as Meals on Wheels, IHSS, and adult day health care (ADHC).

Figure 13. Combinations of Informal and Formal Support



In prison, the support required to compensate for loss of independence can come from three sources:

- Informal support from other inmates
- Formal support from other inmates, who have caregiving as their work assignment or who operate a meals delivery program
- Formal support from healthcare or custody staff

Correctional officers can find themselves in caregiver-like roles even with inmates who are not impaired simply because the prison has taken charge of many instrumental ADLs for inmates. For inmates who do have physical or cognitive impairments, correctional officers often provide more basic support, such as assisting inmates with wheelchairs or reminding them what to do. Because they are paid staff, this support is considered formal rather than informal. And yet the correctional

officers are not trained as caregivers and generally do not think of themselves as such. The support they offer to impaired inmates in the general population is more similar to informal support than formal support from paid agencies.

In community settings, the majority of support received by impaired individuals is from family and friends. In prison, the majority of support received by impaired individuals in the general population is from other inmates and correctional officers.

Appendix D: Relationship-Centered Care and Restorative Justice

In the course of our work in corrections, we have struggled with limited success to apply the IOM's concept that healthcare should be patient-centered, that the patient should be in control.[162] *Relationship-centered care* has emerged as an alternative model to patient-centered care, one particularly apropos in correctional settings. Here we will introduce several pertinent dimensions of the relationship-centered care framework.

Restorative justice is an emerging model for practice in corrections. We must leave to others with appropriate expertise the evaluation of this and other practice models.[163] We discuss it here primarily to offer an example of the effort that healthcare and custody can make toward speaking a common language and developing common programs.

Most physicians and nurses in practice today trained with some awareness of the biopsychosocial model, a conceptual framework for organizing assessments and interventions and for documenting one's work. Efforts to redesign healthcare have increasingly focused on patient-centered care, an organizing principle related to the biopsychosocial model. The IOM states that the six aims of healthcare are to be safe, effective, patient-centered, timely, efficient, and equitable.[164]

Although correctional chronic care advocates have emphasized the value of teaching self-management to inmates, patient-centered care stresses patient control in ways that strain one's thinking in correctional settings. After all, inmates are in prison often because their practice of self-control—or lack thereof—has violated the community. Patient-centered care emphasizes autonomy, but "the concept of autonomy in prison is, in general, oxymoronic."[165]

In the last decade, a model of relationship-centered care has developed that may prove more useful than the patient-centered model. It is certainly more compatible with correctional settings. Relationship-centered care acknowledges that the actions of the patient occur in the context of relationships with clinicians, family members, and community. It acknowledges reciprocity, responsibility, and power gradients. Its core principles include the following:[166]

1. *Relationships in health care ought to include dimensions of personhood as well as roles.*
2. *Affect and emotion are important components of relationships in health care.*
3. *All health care relationships occur in the context of reciprocal influence.*
4. *Relationship-centered care has a moral foundation.*

Relationship-centered care has emerged in part from the rich empirical literature on chronic disease management The physician-patient relationship has significant impact on diabetes management and outcomes, for instance.

Relationship-centered care focuses our gaze not only on the patient but also on relationships among healthcare staff.[167] The principles used to engage diabetics in self-care are similar to the principles needed to engage clinicians in change initiatives to improve systems of care. Relationship-centered care also acknowledges that we all live and work in relationship to each other. Within organizations, our responsibility to the mission entails responsibilities to each other. We should be able to hold each other accountable for carrying out our duties.

The framework is compatible with the theory and practice of restorative justice, a paradigm holding that "crime is a violation of people and relationships rather than merely a violation of law."[168] Although most of the evidence for restorative justice and civic service practice comes from work with

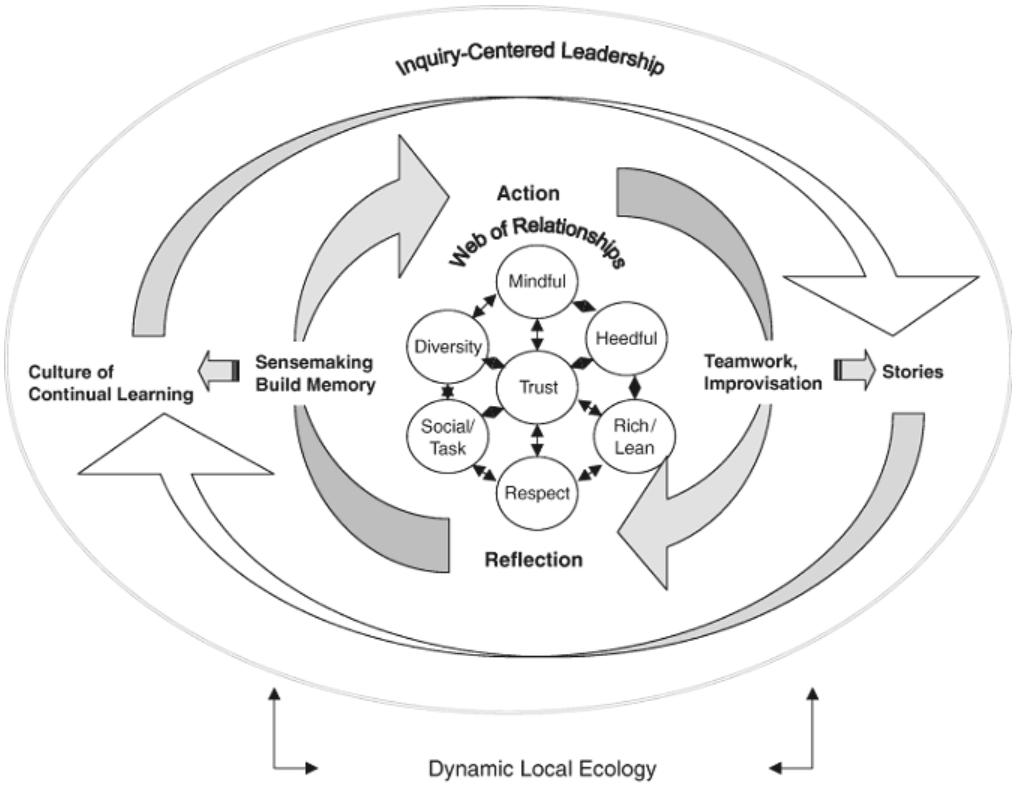
younger inmates, the life course perspective implicit in this work is particularly helpful in working with older inmates[169]. Both relationship-centered care and restorative justice facilitate staff members' ability to make sense of their work. Whereas relationship-centered care offers a "values foundation" for the health professions, restorative justice offers a values foundation for corrections and social work. It imagines a just public order.[170]

Seasoned professionals often describe their work with inmates in ways that are compatible with relationship-centered care. The CDCR mental health professionals in particular can draw from their greater experience in team care for chronic conditions and their experience in therapeutic communities focused on pro-social programming for patients. The relationship-centered framework formulates what many healthcare and custody staff members—and indeed, many inmates—already understand. The survey of older inmates by CMF peer counselors found that "People expressed a real desire to be useful to those around them."[171] Inmate caregiver jobs offer multiple benefits to the caregiver, the care receiver, and the institution.

Relationship-centered care need not imply naiveté about the impact of personality disorder, mental illness, and dementia in this population. But inmates who rehabilitate do so in the context of relationships. "Prisoners are, by and large, damaged people who damage other people in turn. To change them, we must offer caring relationships; only caring relationships can serve as an emotional bridge back to civil society, where relationships are the central feature of life."[172]

The principles of relationship-centered care can encompass the organization as a whole and complement high-reliability as a bridge between custody and healthcare (see Figure 14). Both high-reliability safety principles and relationship-centered care focus on the quality of communication. Communication failures are responsible for 60% of the sentinel events that cause harm in hospitals.[173] There is evidence that patient outcomes depend on the degree of "relational coordination" among care teams, including shared goals, shared knowledge, mutual respect, problem-solving, and conflict management.[174] The CDCR leadership program, based on the work of Kouzes and Posner[175] and initiated in 2005,is compatible with these models.

Figure 14. Relationship-Centered Organizational Model



The model of relationship-centered organizations, drawing from research in several fields, places seven measurable qualities within an organization's "web of relationships": mindfulness, or awareness of what's happening elsewhere in the organization; diversity of mental models, valuing varying ways of thinking and problem-solving; heedful interrelating, first observed on aircraft carriers; a mix of lean vs. rich communication, e.g., e-mail vs face-to-face; a mix of social and task-related interactions; mutual respect characterized by honesty and tact; and trust, a sense of safety in being dependent on others who are capable and committed.

Relationship-centered care also calls attention to ties with the outside community. Inmates' isolation from their communities is mirrored in the experience of CDCR clinicians, who suffer isolation from their professional communities and training centers. Connecting inmates with community agencies is primarily the province of social workers and correctional counselors during pre-release planning. But community agencies can also provide concrete assistance to long-stay inmates, including older, impaired inmates, and to the staff providing care.

It is helpful to remember that inmates come disproportionately from the urban poor, who carry a disproportionate burden of illness. The best proxy measures of older inmates' health status are from free-world older urban males with yearly incomes below $15,000 who have not completed high school[176]. One study of older inmates found that most had never been seen by a physician as a child, and a great many had never been seen by a physician as an adult.[177] Prisons function as a kind of public health system for the poor, albeit without adequate resources to carry out this public health mission.[178] Given the weight of this healthcare burden, it is reasonable to ask community public and private organizations to assist. In England the provision of social services for inmates remains an obligation of community social service agencies.[179]

Community organizations are in fact often eager to help. Correctional leaders have reported valuable assistance from faith communities. Veterans organizations and advocates have expressed interest in developing relationships with prisons.[180] Although we were not able to determine how many aging CDCR inmates are veterans, 65% of older men in the United States are veterans.[181] Many CDCR inmates are veterans who could benefit from relationships with veterans organizations, not only pre-release but throughout their incarceration. Having veterans status readily available in the CDCR care coordination system is a precondition to connecting inmates with veterans organizations.

Throughout this report we have emphasized the need for better working relationships between healthcare and custody and among healthcare staff. We have noted as well the value of restoring—or creating anew—inmates' relationships to their families and communities and to other inmates. We encourage the CDCR custody and healthcare leadership to engage these issues with dialogue and action.

Appendix D: Lumetra Team Members

Terry Hill, M.D., a geriatrician, is Senior Medical Director for Quality Improvement at Lumetra, the Medicare Quality Improvement Organization for California. Before joining Lumetra he was medical director of Laguna Honda Hospital. Dr. Hill is on the core faculty of the Stanford Geriatric Education Center and is an Assistant Clinical Professor in the Department of Medicine, UC San Francisco. He is co-chair of the California Coalition for Compassionate Care. He is past-president of the California Association of Long Term Care Medicine and serves on the ethics committee of the American Medical Directors Association. Dr. Hill was in private practice in Oakland from 1994-1999. He has led program development for hospitals and managed care organizations, and he has been medical director of retirement communities, nursing facilities, adult day health centers, and a hospitalist program.

Brie Williams, MD, MSc, is an internist and a geriatrician. She is currently a fellow in aging research at the University of California, San Francisco, funded by the National Institutes of Health. Before becoming a geriatrician, Dr. Williams was a faculty member in general internal medicine at UCSF and was a primary care provider. Dr. Williams also has extensive research training. In 1999, she completed a Masters of Science in Community Medicine with a focus in end-of-life care and geriatrics at Mount Sinai and the City University of New York. She has won awards for her research in medical school, residency and fellowship. Currently she serves as a faculty preceptor in the San Francisco Veterans Administration (SFVA) geriatrics clinic and as a physician reviewer at Lumetra. In addition, she works part-time as an emergency department physician at the SFVA emergency room.

Gail Cobe, MSN, RN, CNS, earned her BSN and MSN from the University of Pennsylvania, specializing in the care of the chronically mentally disabled. She has held many leadership positions in geriatric settings and in education. She served as project site director for the Community College-Nursing Home Partnership at Ohlone College, 1986-1993. She is now clinical nurse specialist for the dementia program, Laguna Honda Hospital in San Francisco. She also serves as Affiliated Core Faculty for the Stanford Geriatric Education Center.

Karla Lindquist, MS, has been a Senior Statistician at the University of California, San Francisco (UCSF) in the Division of Geriatrics since 2001. She completed her Masters degree in Biostatistics at the University of California, Los Angeles in 2001. In her position at UCSF she has gained extensive experience working with researchers studying the medical and sociological aspects of the aging process. In addition to her experience and training in survey research methods and data analysis techniques, she is proficient in multiple statistical programming languages and database design.

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Exhibit E

Abt Associates Inc.

Chronic and Long-term Care in California Prisons: Needs Assessment

Final Report

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Table of Contents

1.0 Executive Summary v
Development of Project Data Set vi
Assessment Tool Development vi
Medical Bed Census vii
General Population Sample vii
Findings from the General Population Sample viii
Algorithm for Assigning Inmates to Levels-of-care ix
Estimate of Current Long-term Care Bed Needs x
Projections of Long-term Care Bed Needs xi
Conclusion xii

2.0 Purpose and Background 1

3.0 Project Data Set 4

4.0 Development of the Assessment Tools and Data Collection Protocol 6
4.1 Data Collection Tools 6
4.1.1 Assessment Tool Domains 6
4.1.2 Level of Care Definitions 7
4.1.3 Preparation for Data Collection 8
4.2 Data Collection Protocol 9
4.2.1 Medical Bed Census 9
4.2.2 General Population Assessments 10

5.0 Primary Data Collection Findings 12
5.1 Findings from the Medical Bed Census 12
5.1.1 Demographic and Custody Characteristics 12
5.1.2 Chronic Diseases 12
5.1.3 Medical Needs 14
5.1.4 Functional Impairment 14
5.1.5 Cognitive Impairment 16
5.1.6 Level of Care Assignment 17
5.2 General Population Assessments 19
5.2.1 Sampling Methods 19
5.2.2 Findings from the General Population Assessments 20
5.2.3 Medical Needs 22
5.2.4 Functional Impairment 23
5.2.5 Cognitive Impairment 25
5.2.6 Level of Care 25
5.2.7 Overlap of Mental Health and Long-term Care Need 26

6.0 Estimates of Long-term Care Need in the Prison Population 27
6.1 Development of an Algorithm to Estimate the Probability of Current Long-term Care Need for General Population Inmates 27
6.1.1 Estimating the Need for Long-term Care 28
6.1.2 Estimating Level of Care 32

6.2 Adjusting for Low Sensitivity of Correctional Officer Nominations 32
6.3 Population-level estimates of current long-term care needs 33

7.0 Projected Growth in Long-term Care Needs for CDCR Inmates 37

8.0 Discussion 42

References 44

Table of Figures

Table i. Estimates of Current Need for Long-Term Care Beds in the California State Prison System x

Table ii. Projections of Need for Long-term Care Beds in CDCR through 2012 xii

Table 1. Key to Abbreviations 3

Table 2. Extant CDCR Data Sources Considered for Project Data Set 4

Table 3. Medical Bed Census Demographics 13

Table 4. Top Ten Chronic Diseases Reported in Medical Bed Census 14

Table 5. Top Ten Nursing Needs Reported in Medical Bed Census 14

Table 6a. Number of Inmates Requiring Supervision or Assistance with Activities of Daily Living (ADLs)* 15

Table 6b. Inmates Needing Supervision or Assistance with Multiple Activities of Daily Living (ADLs) 15

Table 7a. Limitations in Prison Activities of Daily Living (PADLs)* 16

Table 7b. Occurrence of Limitation in Multiple Prison Activities of Daily Living (PADLs)* 16

Table 8. Cognitive Function 17

Table 9. Recommended Level of Care by Current Bed Type 18

Table 10. Assessor's Recommended Level of Care and Duration 18

Table 11. General Population Assessments Sample Size 20

Table 12. Demographic and Custody Characteristics of Inmates Eligible To Be Sampled, Inmates For Whom the Assessment Was Attempted But Not Completed, and Inmates Who Were Successfully Assessed 21

Table 13. Top Ten Chronic Diseases Reported in General Population Assessments 22

Table 14. Top Ten Nursing Needs Reported in General Population Assessments 23

Table 15a. Inmates Requiring Supervision or Assistance with ADLs 23

Table 15b. Inmates Needing Supervision or Assistance with Multiple ADLs 24

Table 16a. Limitations in PADLs 24

Table 16b. Occurrence of Limitation in Multiple PADL 24

Table 17. Cognitive Function 25

Table 18: CO Proxy Assessment of Inmate's Current Level of Care Assignment 26

Table 19. Relative Risk of LTC Need among Patients with History of Occupying Mental Health Bed 26

Table 20. Test Characteristics for identifying LTC with Measures of Functional Limitation Among Medical Bed Occupants 30

Table 21. Constructed Variables for LTC and LOC Prediction Models 31

Table 22. Estimates of Current Need for Long-Term Care Beds in the California State Prison System 34

Table 23. Projected Number of Long-term Care Beds Needed Over the Next Five Years 38

Figure 6.1 35

Figure 6.2 36

Figure 7.1 37

Figure 7.2 38

Figure 7.3 39

Figure 7.4 41

Box 1. Criteria for Levels of Care 8

1.0 Executive Summary

To fulfill its planning and care delivery responsibilities, the California Prison Health Care Receivership Corporation requires reliable data on the burden of chronic disease, and physical and cognitive functioning in the inmate population. Without such data, the Receivership cannot properly plan for facility and programming needs or deliver quality health services at appropriate levels of care. This Chronic and Long-Term Care Needs Assessment carried out for the Receivership by Abt Associates Inc. and Lumetra represents an important step in closing this data gap and providing estimates and projections needed for the Receivership to plan bed needs at appropriate levels of care.

Currently, the California prison system has about 800 in-house medical beds distributed across 33 facilities housing a total of 170,000 inmates. Inmates with chronic disease or functional impairment requiring LTC are currently housed in general population (GP) or in one of five types of short-term care facilities: 1) general acute care hospitals (GACH), 2) correctional treatment centers (CTC), 3) outpatient housing units (OHU), 4) skilled nursing facilities (SNF), and 5) hospice units. When specialty care is required or when in-house capacity is filled, inmates are transferred to community hospitals with custody supervision.

The Receivership has begun planning construction of new beds to provide LTC to inmates with chronic illness and physical impairment. Because long-term patients with chronic diseases and functional impairments can have a diversity of care needs, the Receivership plans to organize LTC beds into three levels of service intensity. From lowest to highest level of care, these are 1) specialized general population (equivalent to sheltered housing or congregate living), 2) low acuity medical beds (equivalent to assisted living), and 3) high-acuity medical beds (equivalent to skilled nursing beds).

The current needs assessment project provides information to help the Receivership estimate the overall sufficiency of the planned construction, the appropriate distribution of long-term and short-term beds, and the estimated number of LTC patients requiring each of these three levels of service intensity.

The needs assessment project was designed to achieve three goals.

- Develop an assessment tool for this project and for use in the future to assess inmates' health status and assign them to levels of care and programming appropriate to their needs.
- Measure the health status of a sample of CDCR inmates using the assessment tool and, based on that sample, describe the current burden of chronic medical illness and functional impairment in the California prison population.
- Estimate the future long-term and short-term care bed needs by level of care and custody and programming so as to inform new facilities construction.

To achieve these goals, the Abt Associates/Lumetra team has collaborated with the Receivership and CDCR on the following activities:

- Development of the Project Data Set (PDS);
- Development of two assessment tools (Medical Bed Census and General Population Assessment);
- Assessment of all inmates in medical beds (Medical Bed Census);
- Assessment of a sample of general population inmates (General Population Assessments);
- Development of an algorithm for assigning inmates to level of care;
- Estimation of current and projection of future bed need.

Development of Project Data Set

Early in the project, Abt Associates catalogued CDCR data sources anticipating the use of some key CDCR data as inputs to a model projecting the need for medical beds over time. The project data set (PDS) has proved to have multiple uses. First, the PDS helped the team characterize the demographic features and health of the inmate population. Second, by leveraging the data in the PDS, the sample design was improved so that our estimates of disease burden, physical and cognitive functioning, and bed needs are more precise. Third, the PDS may help the Receiver plan a case management system in the future.

Development of the PDS revealed an urgent need for CDCR to improve information technology infrastructure and replace obsolete and homegrown data systems with systems that support case management and quality measurement across the state. Of course, new technology does not guarantee improved care delivery. But, sufficient resources for IT development and operations are necessary for CDCR to achieve a cohesive prison health system in which inmate-patients are housed appropriately and LTC patients receive consistently high-quality case management that is also cost-effective.

Assessment Tool Development

The Abt/Lumetra team designed Assessment Tools for the medical bed census and the general population sample. The overall purpose of the assessment tools was to collect data on the health and functional status of inmates, but the tools may also be used for future assessments of inmate health status and to inform decisions on the assignment of inmates to levels of care and housing appropriate to their needs.

The tool was designed to collect information from medical charts, clinicians, and custody staff pertaining to inmates' chronic disease burden, medical needs, functional limitations, and cognitive status. When available and appropriate we incorporated validated items from the literature. The tool is organized into the following sections: demographics; disease burden (105 chronic conditions, grouped by type of condition, e.g., cardiovascular, respiratory, gastrointestinal); medical-nursing needs/treatments (56 medical and nursing needs and treatments grouped into 12 areas, e.g., vital signs, respiratory, gastrointestinal); activities of daily living (ADLs) (ability to perform six activities, i.e., walking, dressing, eating, toilet use, personal hygiene, bathing/showering); prison activities of daily living (PADLs) (ability to perform six key functional abilities specific to life in a correctional facility that may drive placement of inmates, i.e., ability to get on the floor for alarms, hear orders from staff, stand for head count, go to the dining hall, get onto a top bunk, and climb one flight of

stairs); cognitive status (daily decision-making skills, short- and long-term memory, and ability to make him/herself understood); and a LOC assignment recommendation.

As described below, the assignment recommendation by the assessor was dropped for the general population sample in favor of using an automated assignment algorithm. However, the same levels of care were used in the general population sample and final bed need estimates and projections.

The assessment tool was pilot tested in two facilities and revised prior to its use in the medical bed census and it performed well during that census.

Medical Bed Census

On March 14-15, 2007, CDCR medical staff, with technical assistance from the Receivership and the Abt/Lumetra team, conducted a census of all occupied medical beds in the prison system, including OHU, CTC, GACH, SNF, hospice, and community hospital beds. There were 959 occupied medical beds included in the census. After excluding 204 inmates who were in medical beds for psychiatric treatment, 724 inmates receiving treatment for physical illness were assessed and 31 were not assessed due to recent transfer, missing records, or other factors. Of those assessed, 156 were located in community hospital beds.

The results of the medical bed census suggested a fairly high overall concurrence between placement in some type of medical bed and assessed needs for care beyond that available in regular general population. However, the census also revealed substantial discordance between current placement in specific types of medical beds and assessed level of care needs. The results of the medical bed census also suggested that CDCR's health care infrastructure and services could be reorganized to accommodate inmates with chronic disease in specialized general population units where moderate, ongoing care needs could be more efficiently met. Moreover, a new care configuration with both short- and long-term beds and case management would likely reduce CDCR's reliance on relatively expensive community hospital beds and reclaim current CTC and OHU beds for acute infirmary care.

General Population Sample

The general population sample was designed to collect data to inform bed need estimates and projections. We drew a stratified sample of 3,338 general population inmates eligible for assessment was clustered by prison facilities and stratified by risk groups. Two data sources informed the sample stratification: (1) data on age, physical disability, and prior healthcare utilization available for all inmates in the PDS; and (2) correctional officer (CO) nominations. COs in each housing unit of the sampled facilities were asked to identify inmates who they felt should be housed outside general population, in a more supervised housing unit, because of medical, functional, or cognitive problems. We stratified the population as follows: (1) high-risk and nominated; (2) low-risk and nominated; (3) high-risk and not nominated; and (4) low-risk and not nominated. Because the probability of needing LTC was expected to be near zero for the low-risk and not nominated stratum, we did not sample any inmates from this stratum. While this omission causes our estimates to understate bed needs, the bias is small and this study provides a corrective adjustment.

It was determined that our data collection would cover between 6 and 10 prisons, depending on the target sample size at each prison and the prison locations. In the end, we selected the California Medical Facility due to its unique medical mission, and eight other prisons. The prisons were selected to achieve representation of both male and female inmates, geographic distribution across the state, variation in prison population size, custody designations, and variation in levels of overall medical utilization.

During the period May 22-June 14, 2007 teams of 1-4 Lumetra nurses conducted assessments at the nine sampled CDCR facilities:

1. High Desert State Prison (HD)
2. Central California Women's Facility (CCWF)
3. California Correctional Institution (CCI)
4. Salinas Valley State Prison (SV)
5. California State Prison Solano (SOL)
6. Substance Abuse Treatment Facility (SATF)
7. California State Prison Centinela (CEN)
8. California Medical Facility (CMF),
9. Avenal State Prison (ASP)

The general population assessments were completed using data from two sources collected in sequence: medical record review and interviews with COs in the inmates' housing units. COs were used as proxies for information on the functional and cognitive status of general population inmates because they are the prison staff that have the most contact with the inmates and are likely to know them best.

Within the nine sampled prisons, 3,338 inmates belonged to the three strata eligible for assessments. Data collectors randomly selected 1,495 of these inmates for assessment, of whom 1,192 were successfully assessed. The target sample size quotas were met or exceeded in all but one of the sampled facilities and the final total sample exceeded the target of 1,000, thus enabling us to increase the precision of our estimates. Three hundred three selected inmates could not be assessed for a variety reasons including unavailability of the medical chart, inability to locate a proxy who could complete the assessment, and inmate movement to other facilities.

Findings from the General Population Sample

Demographic and custody characteristics of the sampled inmates matched reasonably well with the characteristics of the population of inmates eligible to be sampled, suggesting that no bias was introduced during sample selection. Additionally, we observed a high level of disease burden and functional limitation among the sampled inmates, suggesting that our stratification scheme was effective. The sampled inmates had the following characteristics:

- The top ten diagnoses were hypertension, anxiety disorder, low back pain, hypercholesterolemia/ hyperlipidemia, history of positive PPD test for TB infection, arthritis, hepatitis C, gastroesophageal reflux disease, diabetes mellitus, and ischemic heart disease.

- The top ten nursing/ medical needs were straight cane, chronic pain, wheelchair, blind in both eyes, orthotic device, hearing impaired, daily fingerstick required, sliding scale insulin, routine insulin, and nebulizer treatment.
- Of the sampled inmates in the general population assessment, 202 individuals (19 percent) were not independent in at least one ADL, and 44 individuals needed extensive assistance or were totally dependent in at least one ADL.
- Almost half of the sampled inmates (47 percent) had at least one permanent deficiency in the PADL.
- Most sampled inmates (90 percent) were completely independent in decision-making. Only 5 percent were reported to have short- or long-term memory problems and only 3 percent could only make themselves understood "sometimes" or "rarely."
- CO proxies felt that housing in the general population was not appropriate for 9 percent of sampled inmates due to disease or functional or cognitive factors.

Algorithm for Assigning Inmates to Levels-of-care

Having quantified the chronic disease, medical needs, and physical and cognitive functional status of sampled inmates from general population, we needed to translate these conditions into estimates of LTC needs. To accomplish this, we developed an algorithm which combines clinical criteria with statistical models to generate, for each sampled inmate, probabilities of needing each level of LTC.

The algorithm for assigning inmates to levels-of-care was developed with input from three clinicians participating in the project. Alternative specifications of the algorithm were tested for sensitivity (correct identification of those in need of LTC) and specificity (correct identification of those not in need of such care) among patients in the medical bed census for whom assessors had made a level of care placement recommendation. The best performing algorithm was then applied to the inmates in the general population sample in order to assign the main outcome variable (Level of Long-term Care: general population, specialized general population, low acuity long-term care, high acuity long term care).

The algorithm is structured sequentially so that the need for LTC outside the general population is first established based on functional and/or cognitive impairment (inmates must have at least one major ADL or permanent PADL or cognitive problem to be considered for LTC). Then the *probability* of needing LTC and the *level* of that care are estimated for these individuals using statistical models based on observed diagnoses and nursing needs.

To develop the statistical models, we used the medical bed census data. Disease diagnoses and nursing needs on the assessment tool were tested both for correlation with the need for LTC and for correlation with the LOC among inmates identified as needing LTC. Any diseases or nursing needs that were significantly correlated with needing LTC were retained as variables in the logistic model used to predict LTC needs among general population inmates who met the clinical criteria of having functional and/or cognitive limitation. Similarly, any diseases or nursing needs that were significantly correlated with at least one of the levels of care were retained as variables in the multinomial logistic model used to predict level of care.

Estimate of Current Long-term Care Bed Needs

The assignment algorithm was applied to the general population sample and generalized to all general population inmates in the nine sampled prisons with appropriate weighting of inmates by the inverse of their sampling probabilities. The estimates for the sampled facilities, excluding CMF, were then generalized to the general populations of the 24 unsampled facilities, using weighting of inmates by risk strata. Estimate for CMF's general population were treated separately from the other prisons because of the prison's unique medical mission and the concentration of inmates with medical needs within its population. Adding together the general population estimates of all the prisons and the estimated number of inmates needing LTC from the statewide medical bed census produced a total estimate for LTC bed needs across the CDCR system. These estimates are reported in the Table i.

Table i. Estimates of Current Need for Long-Term Care Beds in the California State Prison System*

Sub-population	Level of Long-term Care			TOTAL (number of inmates)**
	Specialized GP (number of inmates)	Low Acuity (number of inmates)	High Acuity (number of inmates)	
Medical Beds - all prisons	183	92	91	366
CMF	173	43	18	233
8 other sampled facilities	567	125	46	738
24 unsampled facilities	934	208	77	1,219
TOTAL- All prisons , unadjusted**	1,856	469	232	2,557
Adjustment Factor for Unsampled Strata				1.19
TOTAL – All prisons, adjusted for LTC need within unsampled stratum	2174	541	259	2974
95 percent confidence Interval (Lower Bound, Upper Bound)				(2713, 3233)

*Based on a population of 135,863 that does not include ~28,000 inmates in reception centers or ~7500 in community corrections.
**Totals may not sum exactly due to rounding.

Approximately 73 percent of the LTC beds are required at the level of specialized general population, 18 percent of the required beds are low-acuity, and 9 percent of the required beds are high-acuity.

The 95 percent confidence interval around the total estimate of 2,577 beds is (2377, 2737). The inmates in need of LTC based on our estimates represent almost 2 percent of the CDCR inmate population. However, this estimate does not include the roughly 28,000 inmates in reception centers or about 7,500 in community corrections. Nor does the confidence interval reflect uncertainty about the number of inmates in the fourth stratum of the sample (low-risk and non-nominated by correctional officers), from which no inmates were sampled.

The base estimate we report assumes that all inmates in the low risk stratum who currently need LTC were identified by CO nominations. To account for the likelihood that some inmates in the unsampled (low-risk and not nominated) stratum do in fact need LTC, we applied an adjustment factor to our base estimates. The adjustment factor of 1.19 was calculated using the medical bed census data for inmates that were low-risk in the nine sampled prisons and the observed sensitivity of CO nominations. In sensitivity analysis, we found that even if the adjustment factor were as high as 1.5, which implies a 1 percent prevalence of LTC need in the "unsampled and not nominated" stratum, the total number of LTC beds currently needed would be 3,836 (95 percent CI: 3349, 4322)

Projections of Long-term Care Bed Needs

The California inmate population is rapidly aging. According to CDCR projections, the total CDCR inmate population is expected to increase by 8 percent through 2012, but the over-60 age group will increase by 80 percent[1]. This project found that the probability of needing LTC increases exponentially with age. Using our base estimates, the fraction of inmates under 50 needing LTC was less than 1 percent. The probability of needing LTC reaches 7 percent for those aged 60-64, 15 percent for those aged 65-69, 27 percent for those aged 70-75, and 34 percent in inmates over 75. The rapid increase in the number of older inmates will drive demand for LTC within the California prison health care system.

To generate projections of LTC bed need over the next five years, we partitioned the estimated 2,557 beds currently needed into 10 age categories. We calculated the proportion of the population currently needing LTC within each age category and then applied that estimate of the age-specific prevalence of LTC need to the CDCR's age-structured population projections. Because the CDCR's population projections were only available through 2012, we extrapolated the population projections an additional five years by fitting parametric trendlines to the age-group-specific CDCR projected population growth rates. Table ii shows estimated LTC bed needs through 2017

Since LTC need is so closely correlated with age, the expected aging of the prison population translates into a fairly dramatic increase in projected LTC bed needs—to possibly as many as 4,570 by 2012. Assuming the projected population growth and age-group trends persist for an additional five years to 2017, the continued aging of the population will require between 4,970 and 5,750 beds for inmates with long term care needs.

[1] California Department of Corrections. 2007. "Adult Population Projections 2007-2012" http://www.cdcr.ca.gov/reportsresearch/OffenderInfoServices/Projections/S07Pub.pdf

Table ii. Projected Number of Long-term Care Beds Needed Over the Next Ten Years*

Year	Expected LTC Need	Lower Bound Estimate†	Upper Bound Estimate†
2007	2974	2713	3233
2008	3224	2941	3504
2009	3474	3170	3777
2010	3697	3373	4019
2011	3939	3593	4282
2012	4204	3835	4570
2013	4411	4144	4797
2014	4624	4344	5029
2015	4842	4548	5265
2016	5064	4757	5507
2017	5292	4971	5755

*The estimates for the first 5 years are based directly on the age- and sex- structured population projections developed by CDCR as described in the text. The second five years (2013-2017) are based on extrapolations of the CDCR population projections obtained by fitting parametric trendlines to the age-stratified population growth projections as described in the text.

†The lower bound estimate represents projections based on the lower threshold value in the 95% confidence intervals of the base estimate of current LTC bed need and the upper bound estimate represents projections based on the upper threshold value in the 95% confidence intervals of the base estimate of current LTC bed need adjusted for LTC need in the unsampled strata. The projected trends do not incorporate a measure of increasing uncertainty over time.

Conclusion

The Receiver has proposed the construction of 5,000 new medical beds. Earlier this year, Governor Arnold Schwarzenegger signed into law the Public Safety and Offender Rehabilitation Services Act of 2007, which provides for the immediate construction of 6,000 health care beds (medical and mental health) plus an additional 2,000 beds conditional on CDCR meeting rehabilitation, management, and construction benchmarks. Our results suggest that over half of these beds should be allocated to LTC in order to meet the growing need as California's prison population ages. Despite the limitations of our analysis and the corresponding uncertainty that remains in our estimate of current and future LTC need, we expect that 5000 beds will be adequate for meeting the LTC need of the California prison population over the 10-year time horizon we considered.

2.0 Purpose and Background

California maintains the largest prison system in the United States and perhaps the most troubled, particularly in terms of the health care provided to its inmates. In placing California's prison health services under receivership, Federal District Judge Thelton Henderson concluded that the existing system operated by the California Department of Corrections and Rehabilitation (CDCR) was "broken beyond repair." The Receiver, who began his stewardship in April 2006, faces daunting challenges with little time to meet them. One of the most basic is the almost total lack of reliable data on the burdens of chronic disease, physical impairment, and co-occurring mental illness in the inmate population. Without such data the California Prison Health Care Receivership Corporation cannot properly plan for facility and programming needs or begin to deliver quality health services at appropriate levels of care. The Chronic and Long-Term Care Needs Assessment sponsored by the Receivership represents a critical step in closing this data gap.

Currently California has about 800 in-house medical beds distributed across 33 state prison facilities housing 170,000 inmates. To supplement prison health care services, CDCR contracts with community health care providers. Inmates with chronic disease or functional impairment requiring long-term care (LTC) are currently housed in general population (GP) or in one of five types of short-term care facilities:

1. general acute care hospitals (GACH),
2. correctional treatment centers (CTC),
3. outpatient housing units (OHU),
4. skilled nursing facility (SNF), and
5. hospice.

The Receiver has begun planning construction of new beds to provide LTC of inmates with chronic illness and physical impairment. Because long-term patients with chronic disease and functional impairment can have a diversity of care needs, the Receiver plans to organize LTC beds into three levels of service intensity. From lowest to highest level of care, they are:

1. specialized general population,
2. low acuity medical beds, and
3. high-acuity medical beds.

The Abt/Lumetra needs assessment project provides data to help the Receiver estimate the overall sufficiency of the planned construction, the appropriate distribution of long-term and short-term beds, and the estimated number of LTC patients requiring each of three levels of service intensity of services required to treat patients in LTC beds.

The needs assessment project was designed to achieve three goals.

- Develop an assessment tool that can be used now and in the future to assess inmates' health status and assign them to levels of care and programming appropriate to their needs

- Measure the health status of a sample of CDCR inmates using the assessment tool and, based on that sample, describe the current burden of chronic medical illness and functional impairment in the California prison population
- Estimate the future long-term and short-term care bed needs by level of care and programming so as to inform new facilities construction.

To achieve these goals, the Abt Associates/Lumetra team has collaborated with the Receivership and CDCR on several activities:

- Project Data Set (PDS) development from CDCR data sources
- Assessment tool development
- Primary data collection—medical bed census
- Primary data collection—probability sample of general population inmates
- Data analysis, projection modeling, and reporting

Early in the project, Abt catalogued CDCR data sources anticipating the use of some key CDCR data as inputs to a model projecting the need for medical beds over time. Numerous data sources were identified through this activity and, although caveats regarding poor data quality were frequently attached, the value of formally constructing a comprehensive project data set from these data sources became clear. First, the project data set (PDS) would help the team characterize the demographic features and health of the inmate population. Second, by leveraging the data in the PDS, the sample design for our primary data collection could be improved so that our estimates of disease burden are more precise. Third, the PDS would help the Receiver plan a case management system. By constructing the PDS, we expected to learn more specifically about the quality of health-related CDCR data, the challenges of linking these data sources together, and the value of these data in clinical practice. Although the data within the PDS, by itself, is not sufficient to implement a rational planning process for the reorganization of the prison health care delivery system, the PDS is a valuable supplement to the primary data collected.

Primary data collection occurred in two phases. First, CDCR carried out a census of medical beds to determine whether more correctional medical beds were needed in the short-term. Next Abt and Lumetra conducted assessments of a stratified sample of general population inmates at nine facilities. Data from the medical bed census doubled our sample size and was used, in combination with data in the PDS, to improve the efficiency of the sample of the general population. From the census we identified a set of inmates with LTC needs. Then, through statistical analysis, we found variables in the project data set (such as age, prior hospitalizations, and DPP [Disability placement program] and DDP codes [developmental disabilities program]) that predict long term care need. For the general population data collection we drew a stratified sample based on these variables. The assessments of a sample of general population inmates were conducted at nine facilities in May-June 2007.

The synthesis of information from different sources (the PDS, the medical bed census, and the general population sample) has resulted in a clearer picture of the LTC needs of the CDCR inmate population and the infrastructure and programming required to meet those needs.

This report is organized into nine main sections: Project Data Set, Development of the Assessment Tools and Data Collection Protocol, Primary Data Collection Findings, Development of Algorithm to

Determine Appropriate Level of Care, Projections, Discussion, and Appendices. Abbreviations used frequently in this report are defined in Table 1.

Table 1. Key to Abbreviations

Abbreviations	Definition
CDCR	California Department of Corrections and Rehabilitation
GP	General Population
GACH	General Acute Care Hospital
OHU	Out-patient Housing Unit
CTC	Correctional Treatment Centers
SNF	Skilled Nursing Facility
PDS	Project Data Set
IT	Information Technology
ADL	Activities of Daily Living
PADL	Prison Activities of Daily Living
HD	High Desert State Prison
CCWF	Central California Women's Facility
CCI	California Correctional Institution
SV	Salinas Valley State Prison
SOL	California State Prison Solano
SATF	Substance Abuse Treatment Facility
CEN	California State Prison Centinela
CMF	California Medical Facility

3.0 Project Data Set

Early in the project, the Abt/Lumetra team determined that potentially useful data on custody, health care utilization, and inmate disabilities were available from several separate electronic databases across CDCR (Table 2). With the generous cooperation from CDCR staff noted in Table 2, we extracted data files from several disparate and independently-maintained sources. These databases are described in greater detail in Appendix 1. The only identified source of information we abandoned was the mental health tracking system (MHTS) due to indications from CDCR staff of the poor quality of data and difficulty of aggregating the data from the 33 independent prison-level databases.

Table 2. Extant CDCR Data Sources Considered for Project Data Set

CDCR Database	Acronym	CDCR Contact	Description	Included in PDS
Distributed Data Processing System / Offender-based Information System	DDPS / OBIS	Jay Atkinson, Lori Asuncion, Amnon Igra, Ryan Wong	Demographics, Custody (171,949 inmate-level records)	Yes
Health Care Cost and Utilization Program's Community Medicine Database	CMD	Denny Salade, Dee Carrier	Community Inpatient and Outpatient Episodes (3,932 inpatient records, 2476 unique inmates; 38,780 independent* outpatient records, 7,475 unique inmates)	Yes
Health Care Cost and Utilization Program's CADDIS	CADDIS	Denny Salade, Dee Carrier	In-house medical bed utilization (23,724 records, 12,231 unique inmates)	Yes
Pharmacy Tracking System	PTTS	Rick Pollard (Maxor Pharmacy)	33 separate databases for tracking pharmacy utilization (157,732 records, 44,461 unique inmates)	Yes
Armstrong-Clark Tracking System	ACTS	Individual prison staff coordinated by Ted Rauh	33 separate databases for the Developmental Disabilities Program (DPP) and the Disability Placement Program (DPP) (2,300 records, 1,700 unique inmates)	Yes
Mental Health Tracking System	MHTS	Dr. Henry Willis	33 separate databases for tracking mental health care (size unknown)	Not included due to purported poor quality of data

*outpatient records were considered independent (ambulatory care) if they were not temporally embedded within an impatient stay.

The PDS had two immediate uses in this project: sample design for primary data collection and modeling future long-term care (LTC) needs of the prison population. Data from the PDS were used to develop a model-based stratified sample for the data collection task. By leveraging information in the PDS to predict inmates' likelihood of needing long-term medical care outside of general population, the statistical efficiency of the sample was improved, and our estimates of bed needs are more precise than had we used a simple random sample. PDS data were also used to inform parameters of a model designed to project future LTC needs of the inmate population.

4.0 Development of the Assessment Tools and Data Collection Protocol

4.1 Data Collection Tools

The CDCR Care Management Screening and Assessment Tools for the Medical Bed Census and the General Population Assessments were developed to collect data on the health and functional status of inmates. The first version of the assessment tool was used by CDCR to conduct the medical bed census (the Medical Bed Census Assessment Tool may be found in Appendix 2a) and the second version was used by the Abt/Lumetra team to assess a stratified sample of general population inmates at nine facilities (the General Population Assessment Tool may be found in Appendix 2b). Together the medical bed and the general population assessments provide a snapshot of the current health status of the California inmate population and allow projections of the future health care needs of inmates for planning purposes. The tools may also be used by CDCR or researchers for future assessments of inmate health status and to assign inmates to levels of care and housing appropriate to their needs.

The final assessment tools are the result of an iterative process of revisions based on discussions among the Abt/Lumetra team and CPR and CDCR staff about the tool domains and items, and a review of the literature on long-term care (LTC) patient assessment, case management, LOC determinations in other settings (i.e. Medicaid eligibility determinations), and prison health assessment tools used in other states. Throughout the tool development process, the project team and CDCR applied the following criteria:

1) **Rely on secondary data sources (medical records, clinicians, custody staff)** to determine inmates' chronic disease burden, medical needs, functional limitations, and cognitive status. Face-to-face assessments with inmates were not utilized in the data collection because the process is time consuming and expensive, consent from the inmate population is difficult, and the team determined that data obtained from the secondary data sources would be sufficient. Face-to-face assessments of inmates may be feasible in future assessments.
2) **Rely on assessment items that have undergone reliability testing** in other studies/applications.
3) **Collect only those assessment items that meet the goals of the project.** Given the tight turnaround time for data collection and analysis, the assessment tool should include the smallest set of items possible for ease of training, administration, and analysis, and represent the least amount of burden to staff engaged in the process.

4.1.1 Assessment Tool Domains

As the assessment tool was developed, we held many discussions about the various aspects of inmates' health and functional status that would be important for predicting their needs for LTC housing and supports, and reviewed the wide body of literature on health status assessment, as a guide. A review of the literature on aging, need for care and supportive services, and resource use, provides the following insights about which dimensions of health should be measured when assessing LTC needs.

- *Physical Functioning and Cognitive Status*. Physical and cognitive impairment (or memory impairment) are generally thought to drive care needs over time, and are widely used in reimbursement and case management models throughout the healthcare system (Howell-White, et. al. 2006). Most tools and scales that "group" aging patients (or consumers) for LOC placement or reimbursement, rely heavily on activities of daily living and levels of cognitive functioning.
- *Chronic disease*. Chronic illnesses such as heart disease, diabetes, and hypertension, place people at risk of further illness and disability. According to Fried and Guralnik (1997), "chronic conditions can lead to severe and immediate disabilities, such as hip fractures and stroke, as well as progressive disability that slowly erodes the ability of elderly people to care for themselves". Given the link between chronic disease, treatment needs and disability, this dimension of health is important to measure when assessing LTC needs. Moreover, even when chronic disease does not lead to limitations in physical functioning and cognitive status, it has implications for care delivery, case management, and resource utilization.
- *Resource use*. "Resources" signify multiple concepts in health care and LTC, including staff time (e.g., nurses, nurse aides) to care for patients (or in this case, aging inmates), costs of care (i.e., service utilization, expenditures), and supplies (e.g., syringes, oxygen, catheters). In order to group like categories of LTC patients, researchers and policy-makers generally attempt to link patient characteristics to resource utilization, thereby creating classification schemes used for reimbursement, case management, and other activities. In this project, to create estimates of LTC needs, the research team, acknowledging data limitations identified in previous research (Hill et. al. 2006), attempted to measure resource use by inmates through capturing such items as wound care and assistance with medication administration.

The final assessment tools for the Medical Bed Census and the General Population Assessments included six clinical and health service domains. The first six domains are important dimensions of daily functioning, will contribute to the analysis of long-term housing needs of the population, and will lend themselves to repeated measurement over time as inmates age-in-place within the California prison system.

A detailed discussion of the items in each domain and the process of identifying valid measures may be found in Appendix A3.1. The differences between the Medical Bed Census and General Population Assessment Tools are outlined in Appendix A3.2

4.1.2 Level of Care Definitions

The CDCR health care system's current infrastructure and programming is designed to provide acute, infirmary-style care through six levels of care. Anticipating the development of new LTC housing and infrastructure, levels of care were defined for this project using names and criteria that are inclusive of both acute and LTC. The criteria for level of care are shown in Box 1. These definitions of levels care were used as a basis for inmate placement recommendations through the different phases of this project.

Box 1. Criteria for Levels of Care

High-acuity Medical Bed
Non-prison analog: skilled nursing facility
- RN availability 24 hours/day for assessment, monitoring, and/or complex management
- IV hydration for more than three days
- Complex or high-risk medication regimen or blood transfusion
- Complex wound care regimen
- Extensive assistance with ADLs (or totally dependent)

Low-acuity Medical Bed
Non-prison analog: assisted living
- RN availability 8-16 hours/day for assessment, monitoring, and/or management
- IV hydration for less than three days
- Straightforward IV antibiotics (e.g. for osteomyelitis)
- Straightforward wound care regimen
- Supervision or limited assistance with ADLs

Pre-procedure care and routine post-hospital care can usually be done at Specialized GP level.

Specialized General Population
Non-prison analog: sheltered living or congregate living
- Vision, hearing, or mobility impairment preventing residence in regular GP
- HIV/AIDS
- Pregnancy
- Frailty due to age or medical condition

If need for supervision or limited assistance is inmate's only reason for not being in regular GP, then that inmate can be in sheltered housing with ADLs provided by cellie, buddy system, or inmate helper program.

Regular GP
- Inmates requiring only oxygen, CPAP, or dialysis or who can do their own catheter/colostomy care can be in regular GP.

Hospice
- Patient has life expectancy of less than six months and has nursing needs requiring non-GP level of care.

4.1.3 Preparation for Data Collection

Data Collectors and Data Sources

The Medical Bed Census and the General Population Assessments were completed in similar fashion.

- *Assessors* completed the form. CDCR nurses and nurse-consultants served as assessors for the Medical Bed Census and Lumetra nurses for the General Population Assessments.
- *Inmate medical records* were reviewed for information to complete Sections 1-3.
- *The Project Data Set* was used to pre-populate assessment forms with certain demographic and custody-related items in the General Population Assessments.

- *Proxies* provided data on inmate's functional and cognitive status and assessed the appropriate level-of-care. CDCR unit nurses (not the same nurse as the assessor) served as proxies for the Medical Bed Census and CDCR housing unit correctional officers served as proxies for the General Population Assessments.

Pilot Testing
The Abt/Lumetra Team conducted a pilot test of the draft assessment tool at the California Medical Facility (CMF) and California State Prison, Solano on February 27-29, 2007 with assistance from CPR and CDCR staff. The pilot test was conducted to determine: 1) the average time required to complete each form, 2) whether the data elements on the form could be obtained from the medical record and/or the correctional officer proxies, and 3) how well the assessment items performed in the field. The tool was revised based on the experience of the pilot test. The pilot test protocol and results are described in Appendix A3.3.

Human Subjects Approvals
The Abt Associates Intuitional Review Board (IRB) reviewed and approved the protocols and assessment tools for all three data collection efforts—the pilot test, the Medical Bed Census and the General Population Assessments.

4.2 Data Collection Protocol

4.2.1 Medical Bed Census

On March 14-15, 2007, CDCR medical staff, with technical assistance from CPR and Abt Associates/Lumetra conducted a census of all occupied medical beds in the prison system, assessing 724 inmates. Outpatient housing unit (OHU), correctional treatment center (CTC), general acute care hospital (GACH), skilled nursing beds (SNF), hospice, and community hospital (CH) beds were included in the census. Beds being used by inmates with mental health conditions (Mental Health Crisis beds), even when classified as "medical beds" were not included since the project's focus is LTC needs for physical health problems only. The number of inmates in each type of medical bed, by CDCR facility, is shown in Table A3.2.

Medical Bed Census Assessment Training
CPR, CDCR and Lumetra staff conducted a training for CDCR nurse assessors on the assessment tool and the protocol for implementing the medical bed sweep. Nurses and supervisors from each prison participated in the training in person or via teleconference.

Medical Bed Census Protocol
CDCR nurse assessors completed the demographics, chronic conditions and medical needs/treatments sections of the assessment based on information gathered from medical records. Medical unit nurses providing care to the inmates served as proxy data sources and were asked to: (1) confirm the information from the medical record on chronic conditions and medical treatments/needs, (2) provide information on the inmate's functional and cognitive status, and (3) make a determination of what level of care the inmate should be assigned to and whether they should be at that level of care for more or less than the next three months.

The CDCR assessor then reviewed each completed form and made a determination of the inmate's appropriate LOC and duration of such care (i.e. , more or less than the next three months). Completed assessments were reviewed by CDCR staff and sent to Abt Associates for data entry.

4.2.2 General Population Assessments

From May 22-June 14, 2007, teams of between one and four Lumetra nurses visited a sample of nine CDCR facilities and conducted assessments on a stratified sample of 1,192 inmates. The nine CDCR facilities visited were:

1. High Desert State Prison (HD)
2. Central California Women's Facility (CCWF)
3. California Correctional Institution (CCI)
4. Salinas Valley State Prison (SV)
5. California State Prison Solano (SOL)
6. Substance Abuse Treatment Facility (SATF)
7. Centinela State Prison (CEN)
8. California Medical Facility (CMF)
9. Avenal State Prison (ASP)

As stated earlier, the focus of the general population assessments was to determine the potential long-term-care needs of a stratified sample of inmates living in general population units at these nine facilities.

General Population Assessment Training

A one day training was conducted at the Lumetra office by Lumetra and CPR staff and was attended by all nurses assigned to the project. Abt Associates project staff attended via teleconference. The training materials (developed by the Abt/Lumetra Team) addressed: (1) the purpose of the project; conducting research in correctional facilities; (2) a detailed review of the assessment tool and how to complete it; the protocol for completing the assessment tool and; (3) questions and answers from Lumetra nurse assessors.

General Population Assessment Protocol

The General Population Assessment Tool was completed using data from two sources: the medical record and interviews with correctional officers (COs) supervising the units where each inmate is housed. Abt Associates provided each facility with a list of the sampled inmates several weeks in advance. The nine facilities prepared for the visit by 1) pulling medical records from the list of sampled inmates in advance of the data collection visit, and 2) assigning two correctional staff escorts to the research team to facilitate the data collection process. Teams of Lumetra nurses visited each of the nine facilities for three to nine days to conduct assessments. Correctional staff escorts determined current housing placement for the assessed inmates and coordinated the proxy interview process by escorting the research team through the facility and identifying CO proxies.

COs were used as proxies for information on the functional and cognitive status of general population inmates because they are the prison staff who have the most contact with the inmates and likely know them best. Given that most inmates are generally healthy, we assumed that nursing staff would not be

familiar with the majority of the inmates in our sample. The questions on the tool that COs answered were relatively simple, did not require medical training, and related to behavior that COs would have observed in the housing unit (e.g., inability to perform ADLs such as showering or grooming, inability to perform prison-ADLs such as following orders or standing for head count, inability to make daily decisions, memory problems). Proxies were asked a screener question for each inmate to determine if they felt they knew the inmate well enough to answer these questions. If they responded that they did not know the inmate well enough, or if they could not answer the questions, the inmate was dropped from the sample. An earlier Lumetra study used COs as proxies and the assessors were able to either obtain adequate responses from the COs or determine that they could not provide data. The burden on each CO was relatively light as there were only a few sampled inmates per housing unit (and not every housing unit had sampled inmates), and no medical information about the inmate was shared with the CO.

Each team was provided with an assessment tool for each sampled inmate prepopulated with information and demographic data elements from the Project Data Set. The assessor confirmed the pre-printed demographic data during the medical record review. Medical records were reviewed according to the sample order and assessors completed the Demographics, Disease Burden and Medical-Nursing Needs Treatments sections. Following completion of medical record review, the nurse assessors interviewed CO proxies about the inmates in order to complete the Activities of Daily Living/Mobility, Prison Activities of Daily Living, Cognitive Status, and LOC Assignment assessment sections.

Following interviews with each proxy, assessors asked whether there were any other inmates in the unit who the proxy felt should not be in general population because of a disease or a functional or cognitive problem.

At the end of each facility visit, the lead Lumetra nurse conducted a quality check of the completed assessment forms to ensure that all questions were answered properly and responses were legible. The completed assessment forms were sent to Abt Associates for data cleaning and entry.

A detailed discussion of the performance of the assessment tool and limitations of the data collection may be found in Appendix A3.5 and A3.6.

5.0 Primary Data Collection Findings

As discussed above, data were gathered on the disease burden, treatment needs, and functional and cognitive status of CDCR inmates through the Medical Bed Census and the General Population Assessments.

5.1 Findings from the Medical Bed Census

There were 959 inmates included in the medical bed census, of which 724 were assessed. Of the 235 not assessed, a reason was given in 215 cases. In nine cases the reason was recent discharge or transfer. In the remaining 206 cases the inmate was not assessed because his or her admission to a medical bed was for psychiatric treatment. All of these inmates were receiving treatment within a prison facility. None of the inmates in community hospital beds identified for the census were admitted for psychiatric treatment. It is not clear whether the medical staff specifically excluded inmates in community hospitals for psychiatric treatment (i.e. they are not counted in the 959) or whether, in fact, no inmates in community hospitals on the day of the census had been admitted for psychiatric treatment. A low prevalence of psychiatric patients in community hospitals is consistent with the utilization data in the PDS, so either explanation is plausible.

5.1.1 Demographic and Custody Characteristics

In Table 3, the general characteristics of the 724 assessed inmates are summarized and compared to the full inmate population. Medical bed patients were more likely to be white or black, to have life sentences, and be registered as a sex offender. The mean age of inmates in medical beds was 50, compared to 36 for the full prison population.

5.1.2 Chronic Diseases

Medical diagnoses for inmates were abstracted from medical records. The assessment tool focused on 105 diagnoses of particular interest to this project because of their expected high prevalence among the inmate population or because of their relevance to long-term care coordination.

Inmates in medical beds had an average of 3.8 disease diagnoses identified by medical record review and proxy interview. The top ten diagnoses are listed in Table 4 (a full list is shown in Appendix 4, Table A4.1). These diseases are not necessarily the primary diagnosis for the current medical bed stay. Primary diagnosis was recorded as a free-text entry and will be used by CDCR and CPR staff reviewing patient placement. However, primary diagnosis data was not analyzed for this report. Unfortunately, the diversity of diseases affecting the inmates in the census resulted in a considerable number of “write-in” diagnoses in the free text fields for diagnoses not included in the master list.

Table 3. Medical Bed Census Demographics

Characteristic	Value	Medical Bed Count (Pct)	Full Population Count (Pct)
Population		722	171,959
Gender			
	Male	655 (93)	160,165 (93)
	Female	51 (7)	11,768 (7)
Race/Ethnicity			
	Black	239 (35)	49,550 (29)
	White	259 (37)	47,172 (27)
	Hispanic	64 (9)	27,296 (16)
	Mexican	106 (15)	38,545 (22)
	Other	38 (5)	9,340 (5)
Age			
	17-34	107 (11)	80,554 (47)
	35-44	165 (17)	50,799 (26)
	45-54	193 (20)	30,866 (18)
	55-64	128 (13)	7,841 (5)
	65-74	74 (8)	1,542 (1)
	75+	292 (30)	347 (0)
	Mean Age	50.0	36.5
Bed Type			
	GACH	234 (32)	234 (0)
	CTC	179 (25)	179 (0)
	OHU	112 (16)	112 (0)
	SNF	29 (4)	29 (0)
	Community Hospital	154 (21)	154 (0)
	Hospice	13 (2)	13 (0)
	General Population	n/a	171,211 (99.6)
Mental Health Code			
	CCCMS	183 (25)	27,614 (16)
	EOP	38 (5)	4,191 (2)
Life Sentence			
	Yes	185 (26)	25,406 (15)
Sex Offender Registrant			
	Yes	151 (21)	21,942 (13)
Strike Count			
	2	147 (20)	36,267 (21)
	3	54 (7)	8,863 (5)
Years until Projected Release			
	0 to 4	358 (50)	113,832 (66)
	5 to 9	56 (8)	14,146 (8)
	10 to 19	74 (10)	13,126 (8)
	20 to 29	21 (3)	4,672 (3)
	30 or more	215 (30)	26,173 (15)

Table 4. Top Ten Chronic Diseases Reported in Medical Bed Census

Rank	Description	Number (Pct)
1	Hypertension	283 (39)
2	Diabetes mellitus	134 (19)
3	Hepatitis C	119 (16)
4	Ischemic heart disease (CAD,h/o MI, h/o CABG)	113 (16)
5	Chronic obstructive pulmonary disease (COPD)	96 (13)
6	Major depression disorder (single episode or recurrent)	89 (12)
7	Cancer (active)	77 (11)
8	Epilepsy/seizure disorder	76 (10)
9	Low back pain	64 (9)
10	Anemia	63 (9)

N = 722 inmates; assessors could report up to 15 chronic diseases per inmate.

5.1.3 Medical Needs

In Section 3 of the assessment tool, chart review and proxy interview was used to collect information regarding inmates' current medical treatment needs. The assessment tool contained a list of 56 medical treatment needs ("nursing needs") that were expected to be frequently required by inmates in medical beds. The top ten reported nursing needs are listed in Table 5 (the full list is in Appendix 4, Table A4.2).

Table 5. Top Ten Nursing Needs Reported in Medical Bed Census

Rank	Nursing Needs	Number (Pct)
1	Vital signs Q [what is this?]shift or more often	373 (52)
2	Vital signs daily	265 (37)
3	Wheelchair	213 (29)
4	Chronic pain	125 (17)
5	Finger-sticks more than daily	103 (14)
6	Assistance with medication administration (e.g., cueing to swallow)	91 (13)
7	Continuous IV therapy	85 (12)
8	Surgical site, drain, and other wound requiring daily nursing care	85 (12)
9	Monitoring I/O	78 (11)
10	Altered diet (pureed, thickened liquids)	77 (11)

5.1.4 Functional Impairment

Functional impairment was measured using activities of daily living (ADL) and prison activities of daily living (PADL) scales. The results of the ADL section are shown in Tables 6a and 6b. The results of the PADL section are shown in Tables 7a and 7b. The distribution of ADL impairment across medical bed type and the correlation between temporary and permanent PADLs are shown in Appendix A4.1.3.

Activities of Daily Living

Of the inmates in the census, 337 individuals were not independent in at least one of the six ADLS. Proxy respondents were therefore asked more detailed questions about their need for assistance on

ADLs. Table 6a shows the number of inmates who needed supervision or assistance with each ADL. The percentages in parentheses are a measure of the prevalence of that ADL limitation among all inmates in medical beds (n=724). Limitations in ADLs are correlated with one another and inmates often have functional limitation in multiple activities. Table 6b shows the frequency with which inmates had limitations in multiple ADLs.

Table 6a. Number of Inmates Requiring Supervision or Assistance with Activities of Daily Living (ADLs)*

ADL	1. Independent Number (Pct)	2. Supervision or Limited Assistance Number (Pct)	3. Extensive Assistance or Total Dependence Number (Pct)	4. Activity Did Not Occur Number (Pct)	5. Missing Number (Pct)	Columns 2 + 3 + 4 Number (Pct)
Walk	39 (5)	126 (17)	89 (12)	74 (10)	7 (1)	289 (39)
Eat	199 (27)	71 (10)	48 (7)	7 (1)	12 (2)	126 (18)
Dress	127 (18)	91 (13)	93 (13)	11 (2)	15 (2)	195 (28)
Hygiene	131 (18)	103 (14)	89 (12)	4 (1)	10 (1)	196 (27)
Bathe	94 (13)	125 (17)	104 (14)	7 (1)	7 (1)	236 (32)
Toilet Use	145 (20)	76 (10)	88 (12)	11 (2)	17 (2)	175 (24)

*The denominator for the percentages in parentheses is the number of inmates in medical beds (n=724).

Table 6b. Inmates Needing Supervision or Assistance with Multiple Activities of Daily Living (ADLs)

Count of ADL limitations	Any Level of Limitation or Activity Did Not Occur Number (Pct)	Extensive Assistance or Total Dependence or Activity Did Not Occur Number (Pct)
0	399 (55)	539 (74)
>0	325 (45)	185 (26)
>1	246 (34)	127 (18)
1	79 (11)	58 (8)
2	40 (6)	26 (4)
3	31 (4)	10 (1)
4	21 (3)	16 (2)
5	43 (43)	29 (4)
6	111 (15)	46 (6)

*The denominator for the percentages in parentheses is the number of inmates in medical beds (n=724).

Prison Activities of Daily Living

Table 7a shows the number of inmates who were not able to perform each PADL. Table 7b shows the frequency with which inmates had limitations in multiple PADLs.

Table 7a. Limitations in Prison Activities of Daily Living (PADLs)*

PADL	1. Independent Number (Pct)	2. Temporary Limitation Number (Pct)	3. Permanent Limitation Number (Pct)	4. Missing Number (Pct)
Floor for Alarms	331 (46)	129 (18)	224 (31)	40 (6)
Hear Orders	655 (90)	17 (2)	35 (5)	17 (2)
Stand for Count	452 (62)	78 (11)	171 (24)	23 (3)
Dining Hall	392 (54)	143 (20)	161 (22)	28 (4)
Top Bunk	185 (26)	167 (23)	349 (48)	23 (3)
Climb Stairs	221 (31)	155 (21)	324 (45)	24 (3)

*The denominator for the percentages in parentheses is the number of inmates in medical beds (n=724). Source: medbed01_v2.dta

Table 7b. Occurrence of Limitation in Multiple Prison Activities of Daily Living (PADLs)*

Number of PADLs	Temporary Limitation Number (Pct)	Permanent Limitation Number (Pct)	Temporary and Permanent Limitation Number (Pct)
0	483 (67)	362 (50)	190 (26)
>0	241 (33)	362 (50)	534 (74)
1	60 (8)	38 (5)	38 (5)
2	52 (7)	81 (11)	97 (13)
3	49 (7)	55 (8)	105 (15)
4	33 (5)	73 (10)	109 (15)
5	36 (5)	83 (11)	140 (19)
6	11 (2)	32 (4)	45 (6)
Total	724 (100)	724 (100)	724 (100)

*The denominator for the percentages in parentheses is the number of inmates in medical beds (n=724).

5.1.5 Cognitive Impairment

Cognitive impairment was measured with questions regarding decision-making, memory, and making oneself understood. The results of the cognitive function assessment are shown in Table 8. Most medical bed inmates (77 percent) were completely independent in decision-making. About 13 percent of medical bed inmates were reported to have memory problems. About half of all those with any reported memory problem had problems with both short- and long-term memory. Only 7 percent of the census could only make themselves understood “sometimes” or “rarely.”

Having any cognitive problem was positively correlated with having at least one permanent PADL (correlation coefficient = 0.35555, $p<0.0000$) and was negatively correlated with having a temporary PADL limitation (correlation coefficient = -0.0899, $p<.0156$).

Table 8. Cognitive Function

Question	Value	Number (Pct)
Decision-making		
	Independent	557 (77)
	Modified independence	70 (10)
	Moderately impaired	51 (7)
	Severely impaired	38 (5)
	Missing	8 (1)
Short term memory		
	OK	631 (87)
	Problem	91 (13)
	Missing	2 (0)
Long-term memory		
	OK	629 (87)
	Problem	91 (13)
	Missing	4 (0)
Can make self understood		
	Understood	581 (80)
	Usually	70 (10)
	Sometimes	30 (4)
	Rarely	20 (3)
	Missing	23 (3)

*The denominator for the percentages in parentheses is the number of inmates in medical beds (n=724).

5.1.6 Level of Care Assignment

The main purpose for conducting the census of medical beds was to assess the level of care needs of these inmates and the expected duration of those needs. Table 9 shows the assessors' recommendations for level of care. Of 724 inmates in medical beds, 637 (88 percent) were recommended for medical housing outside of GP (166 in high acuity, 219 in low acuity, 223 in specialized GP, and 29 in Hospice).

Among inmates in each current medical bed type, the assessors found individuals to recommend for all five levels of care (Table 9). The recommended shifts in placement were most commonly to lower levels of care. For example, only 16 (14 percent) of 112 inmates in GACH beds, currently the highest intensity medical bed type in the CDCR system, were recommended for a high-acuity medical bed. Seventeen percent of inmates in OHU beds and 9 percent of inmates in CTC beds were recommended for regular GP. Similarly, 29 (19 percent) of 154 inmates in community hospitals were recommended for specialized GP or regular GP. However, in the case of community hospitals, this finding most likely reflects the assessor's recommendation of the level of care the inmate will require upon returning to prison after discharge from the hospital. It was not within the scope of the project or the capability of the assessment process to determine whether hospital admissions were initially warranted.

Table 9. Recommended Level of Care by Current Bed Type

		Recommended Level of Care					Total
		High Acuity	Low Acuity	Special GP	General Population	Hospice	
		Num (Row%)	Num (Row%)	Num (Row%)	Num (Row%)	Num (Row%)	
Current Bed Type	GACH	16 (14.3)	47 (42.0)	36 (32.1)	11 (9.8)	2 (1.8)	112
	CTC	54 (30.2)	61 (34.1)	43 (24.0)	16 (8.9)	5 (2.8)	179
	OHU	13 (5.6)	56 (23.9)	121 (51.7)	40 (17.1)	4 (1.7)	234
	SNF	7 (24.1)	10 (34.5)	9 (31.0)	1 (3.4)	2 (6.9)	29
	C. Hosp	77 (49.4)	43 (28.6)	12 (7.8)	19 (11.0)	5 (3.2)	156
	Hospice	0 (0.0)	0 (0.0)	2 (15.4)	0 (0.0)	11 (84.6)	13
	Missing	0 (0.0)	1 (100)	0 (0.0)	0 (0.0)	0 (0.0)	1
	Total	167 (23)	218 (30.3)	223 (30.9)	87 (11.8)	29 (4)	724

Table 10 shows the assessors' expectations regarding the duration over which the inmate will require care. Of the 608 recommended for high-acuity, low-acuity or specialized GP, 329 (54 percent) were expected to require that level of care for more than three months. Level of care was missing for 37 inmates. These inmates were assumed to need care for more than three months. Thus, we estimated there are 366 inmates in medical beds at the time of the census who would particularly benefit from long-term care-specific housing and case management.

The clinician assessments suggested that many medical bed inmates could be shifted to a lower level of care designed for management of chronic conditions. In fact, 85 inmates (12 percent) currently in medical beds were apparently not in need of any significant long-term or short-term care, and were recommended for placement in regular GP. Two hundred twenty-three (223) inmates (31 percent) were recommended for specialized general population – a level of care that would cohort inmates within general population based on moderate ongoing medical need. This level of care does not currently exist within CDCR. Over 50 percent of the 223 inmates recommended for specialized general population are currently in more resource-intensive CTC or GACH beds.

Table 10. Assessor's Recommended Level of Care and Duration

		Recommended Level of Care					Total
		High-Acuity	Low-Acuity	Specialized GP	GP	Hospice	
Expected Duration at Level of Care	Less than 3 month	76	126	40			242 (33%)
	3 months or more	84	85	160			329 (46%)
	Not applicable				87	29	116 (16%)
	Missing	7	7	23			37 (5%)
	Total	167 (23%)	218 (30%)	223 (31%)	87 (12%)	29 (4%)	724 (100%)

We examined whether any variables in the PDS could predict long-term care need outside of regular GP among inmates housed in medical beds. To determine whether any variables in the PDS could predict long-term care (LTC) need outside of regular GP among inmates housed in medical bed, the data were analyzed with logistic regression (Table A4.6). The model performed moderately well at predicting inmates LTC need (R-squared = 0.33). As a result, PDS data was used to draw a stratified random sample of the general population for the primary data collection among general population based on inmates' predicted probability of needing LTC outside of general population. A full discussion of these findings may be found in Appendix A4.1.5.

5.2 General Population Assessments

5.2.1 Sampling Methods

The sample of general population inmates for assessment of LTC needs is clustered (in prison facilities) and stratified by risk groups and correctional officer nominations. Technical notes on the sampling methodology, including risk-stratification, and sample weighting are provided in Appendixes 5 and 6.

Prison Selection
The California state prison population is housed in 33 facilities across the state for the General Population Assessments. We selected California Medical Facility due to its unique medical mission and eight additional facilities. The facilities were selected in an attempt to achieve:

- representation of both male and female inmates,
- geographic distribution across the state,
- variation in facility size,
- variation in custody designation (security level), and
- variation in levels of historical medical utilization.

Risk Stratification
Using data on age, physical disability, and prior healthcare utilization, available for all inmates in the Project Data Set (PDS), we stratified the population into low-risk and high-risk groups.

Correctional Officer Nominations
In addition to stratifying the inmate population by risk, which would have yielded a sample with only a small number of inmates with medical, functional, or cognitive impairments, we also stratified the general population based on correctional officer referrals. We asked CDCR correctional officers (COs) in each housing unit at the nine sampled facilities to identify any inmate who they felt should be considered for housing outside general population, in some type of more supervised medical housing unit, because of medical, functional, or cognitive problems.

We were confident that COs would be able to provide these names based on experiences during a previous study where assessors interviewed COs about the health and functional status of a random sample of inmates and were often given the response, "That guy is fine, but come and see this guy, he's in bad shape."

Thus, the inmate population was divided into four strata: high-risk & nominated, low-risk & nominated, high-risk & not nominated, low-risk & not nominated. In the nine sampled prisons, 39,511 inmates were in the low-risk & not nominated stratum, 1,959 were in the high-risk & not nominated stratum, 349 were low-risk & nominated, and 262 were high-risk & nominated. The key advantage of stratifying our sample according to CO-nominations was that we were able to avoid "spending" a portion of our sample size on a large pool of inmates with an extremely low probability of needing LTC.

Sample Size

Our target sample size was 1,000 completed assessments for inmates distributed across the nine sampled prisons according to the prisons' stratified population sizes (Table 11). In all but one prison, we exceeded our target sample size. Overall, we exceeded our target sample size by about 19 percent, thereby improving the precision of our results.

Table 11. General Population Assessments Sample Size

Facility	Target	Actual
HD	100	107
CCWF	80	86
SVSP	120	103
CCI	60	97
ASP	160	213
SATF	170	187
CEN	60	60
CMF	170	214
SOL	80	125
Total	1000	**1192**

5.2.2 Findings from the General Population Assessments

From the population of the three stratum eligible for sampling (n= 3,338 inmates), 1,192 were assessed. However, 26 were found to be in medical beds, and although they were assessed, they were excluded from our estimates of LTC need in the general population since they were already included in the medical bed census analysis. Three hundred three (303) assessments were attempted, but not completed, for a variety reasons including unavailability of the medical record, inability to locate a proxy who could complete the assessment, and inmate movement to other facilities. Table 12 shows the comparison of demographic and custody characteristics between the 1,192 assessed inmates in the sample and the 303 inmates for whom an assessment was attempted but not completed.

Appendix A4.2.1 includes additional tables and a discussion of the basic demographic and custody characteristics of the sampled inmates compared to the total inmate population in the sampled facilities and in all CDCR facilities.

Chronic Diseases

Assessed general population inmates had an average of 4.9 disease diagnoses identified by medical record. The top ten diagnoses are listed in Table 13. Although these results can be scaled up to the general population of the nine sampled prisons, the prevalence of disease is likely to be an underestimate because of the sample design. The sample design did not draw from the large low-risk & not nominated strata. While we designed our method to allow for adjustments of our estimates of

long-term care need to account for the unsampled stratum, we did not have a corresponding approach for adjusting estimates of other characteristics such as chronic disease prevalence. Therefore we did not report generalized estimate of chronic disease prevalence's for the overall prison population.

Table 12: Demographic and Custody Characteristics of Inmates Eligible To Be Sampled, Inmates For Whom the Assessment Was Attempted But Not Completed, and Inmates Who Were Successfully Assessed

Category	Value	Sample Number (Pct)	Assessments Attempted, But Not Completed Number (Pct)	Assessments Completed Number (Pct)
Population		3,338 (100)	303 (100)	1,192 (100)
Gender				
	Female	213 (6)	10 (3)	86 (7)
	Male	3,125 (94)	293 (97)	1,106 (93)
Race/Ethnicity				
	Black	1,198 (36)	122 (40)	410 (34)
	Hispanic	282 (8)	30 (10)	91 (8)
	Mexican	395 (12)	25 (8)	167 (14)
	Other	170 (5)	17 (6)	67 (6)
	White	1,293 (39)	109 (36)	457 (38)
Age				
	17 to 34	262 (8)	23 (8)	99 (8)
	35 to 44	683 (20)	71 (23)	230 (19)
	45 to 54	1,063 (32)	93 (31)	373 (31)
	55 to 64	686 (21)	70 (23)	245 (21)
	65 to 74	471 (14)	34 (11)	187 (16)
	75+	173 (5)	12 (4)	58 (5)
Mental Health Code				
	Blank	2,006 (60)	175 (58)	767 (64)
	CCCMS	1,006 (30)	113 (37)	336 (28)
	EOP	326 (10)	15 (5)	89 (7)
Life Sentence				
	Yes	1,025 (31)	79 (26)	412 (35)
	blank	2,313 (69)	224 (74)	780 (65)
Sex Offender Registrant				
	Blank	2,343 (70)	224 (74)	871 (73)
	Yes	995 (30)	79 (26)	321 (27)
Strike Count				
	2	830 (25)	82 (27)	281 (24)
	3	357 (11)	53 (17)	116 (10)
	Missing	2,151 (64)	168 (55)	795 (67)
Years Until Projected Release				
	00 to 04	1,545 (46)	136 (45)	531 (45)
	05 to 09	385 (12)	25 (8)	145 (12)
	10 to 19	420 (13)	52 (17)	132 (11)
	20 to 29	138 (4)	16 (5)	48 (4)
	30 or more	850 (25)	74 (24)	336 (28)

Table 13. Top Ten Chronic Diseases Reported in General Population Assessments

Rank*	Rank among Medical Bed inmates	Description	Count (weighted percent of sample)**
1	1	Hypertension	599 (51)
2	68	Anxiety disorder	318 (27)
3	9	Low back pain	306 (26)
4	16	Hypercholesterolemia/Hyperlipidemia	311 (27)
5	32	Hx PPD+	311 (27)
6	27	Arthritis	287 (25)
7	3	Hepatitis C	243 (21)
8	13	GERD	239 (20)
9	2	Diabetes mellitus	215 (18)
10	4	Ischemic Heart Disease	206 (18)

*Based on weighted counts
**These estimates cannot be generalized beyond the sampled facilities due to sampling method. See text for explanation.

The number of diagnoses recorded for general population inmates was higher than for inmates in the medical bed census sample. This unexpected result may be due to variation in the assessors' examination of the medical records between the two data collection activities. The medical bed census utilized CDCR nurses and nurse consultants for data collection, whereas the general population sample data collection used external consultant nurses from Lumetra.

The rank of diseases among the medical bed census and the general population sample are notably different. In particular, the low rank of anxiety disorder among the medical bed census inmates is likely due to the explicit exclusion of mental health patients from the census, but the prevalence of anxiety disorder in the general population sample confirms the extent of significant mental health problems among inmates.

5.2.3 Medical Needs

In Section 3 of the assessment tool information regarding inmates' current medical treatment needs was obtained from the medical record. The top ten nursing needs reported are listed in Table 14. As with disease diagnoses, the medical bed census and the general population sample are quite different with respect to medical needs.

Table 14. Top Ten Nursing Needs Reported in General Population Assessments

Rank*	Rank among Medical Bed inmates	Description	Count of nursing needs in general population sample (weighted Percent of sample)**
1	30	Straight cane	263 (23)
2	4	Chronic pain	172 (15)
3	3	Wheelchair	173 (15)
4	36	Blind 2 eyes	134 (11)
5	33	Orthodic device	99 (8)
6	39	Hearing Impaired	69 (6)
7	40	Fingerstick daily	57 (5)
8	12	Sliding Scale Insulin	62 (5)
9	17	Routine Insulin	51 (4)
10	25	Nebulizer Treatment	50 (4)

*based on weighted counts
**These estimates cannot be generalized beyond the sampled facilities due to sampling method. See text for explanation.

5.2.4 Functional Impairment

Functional impairment was measured using an activities of daily living (ADL) scale and a prison activities of daily living (PADL) scale. The results of the ADL section are shown in Table 15a and 15b. The results of the PADL section are shown in Tables 16a and 16b.

Activities of Daily Living

Of the inmates in the general population assessment, 202 individuals were not independent in at least one of the following six ADLS: grooming, dressing, bathing, toileting, ambulation and eating, and 44 individuals needed extensive assistance or were totally depended in at least one ADL. Proxy respondents were therefore asked more detailed questions about their need for assistance with ADLs. Table 14a shows the number of inmates who needed supervision or assistance with each ADL. Table 14b shows the frequency with which inmates had limitations in multiple ADLs.

Table 15a. Inmates Requiring Supervision or Assistance with ADLs

Activity of Daily Living	1. Independent Number (Pct)	2. Supervision or Limited Assistance Number (Pct)	3. Extensive Assistance or Total Dependence Number (Pct)	4. Activity Did Not Occur Number (Pct)	5. Missing Number (Pct)	Column 2 + 3 + 4 Number (Pct)
Walk	990 (83)	125 (12)	35 (4)	16 (1)	0 (0)	176 (17)
Eat	1131 (96)	31 (3)	1 (0)	0 (0)	3 (0)	32 (3)
Dress	1130 (97)	27 (2)	7 (1)	0 (0)	2 (0)	34 (3)
Hygiene	1109 (95)	42 (4)	10 (1)	3 (0)	2 (0)	55 (5)
Bathe	1093 (93)	54 (5)	14 (1)	2 (0)	3 (0)	70 (7)
Toilet Use	1124 (96)	30 (3)	7 (1)	1 (0)	4 (0)	38 (4)

Table 15b. Inmates Needing Supervision or Assistance with Multiple ADLs

Count of ADLs per person	Extensive Assistance Required or Total Dependence: Number of Inmates in Sample (Weighted Percent)	At least limited assistance required: Number of Inmates in Sample (Weighted Percent)
0	1107 (94)	964 (81)
>0	59 (6)	202 (19)
>1	15 (2)	76 (7)
1	44 (4)	126 (12)
2	4 (0)	27 (3)
3	5 (1)	16 (2)
4	2 (0)	8 (1)
5	3 (0)	5 (0)
6	1 (0)	20 (2)

Prison Activities of Daily Living

Table 16a shows the number of inmates who were not able to perform each PADL. Table 16b shows the frequency with which inmates had limitations in multiple PADLs.

Table 16a. Limitations in PADLs

Prison Activity of Daily Living	1. Independent Number (Pct)	2. Temporary Number (Pct)	3. Permanent Number (Pct)	4. Missing Number (Pct)
Floor for Alarms	892 (76)	29 (2)	241 (21)	4 (0)
Hear Orders	1113 (95)	16 (1)	34 (3)	3 (0)
Stand for Count	1064 (91)	15 (1)	83 (8)	4 (0)
Dining Hall	1096 (93)	8 (1)	55 (6)	7 (1)
Top Bunk	525 (45)	47 (4)	592 (51)	2 (0)
Climb Stairs	714 (61)	39 (3)	412 (36)	1 (0)

Table 16b. Occurrence of Limitation in Multiple PADL

Number of PADLs	Temporary Limitation Number (Pct)	Permanent Limitation Number (Pct)	Temporary and Permanent Limitations Number (Pct)
0	1,070 (92)	549 (47)	503 (43)
1	57 (5)	182 (16)	183 (16)
2	25 (2)	204 (17)	219 (19)
3	13 (1)	130 (11)	142 (12)
4	2 (0)	80 (7)	86 (7)
5	0	15 (1)	24 (2)
6	0	7 (1)	10 (1)
Total	1,167 (100)	1167 (100)	1167 (100)

5.2.5 Cognitive Impairment

Cognitive impairment was measured with questions regarding decision-making, memory, and making oneself understood. The results of the cognitive function assessment are shown in Table 17. Most general population inmates (90 percent) were completely independent in decision-making. Only 5 percent of general population inmates were reported to have short- or long-term memory problems. Only 3 percent of the sampled inmates could only make themselves understood "sometimes" or "rarely."

Table 17. Cognitive Function

Category	Value	Number (Pct)
Decision-making		
	Independent	1,053 (90)
	Modified independence	40 (3)
	Moderately impaired	60 (5)
	Severely impaired	12 (1)
	Missing	1 (0)
Short term memory		
	OK	1,105 (95)
	Problem	58 (5)
	Missing	3 (0)
Long-term memory		
	OK	1,109 (95)
	Problem	53 (5)
	Missing	4 (0)
Can make self understood		
	Understood	1,077 (92)
	Usually	46 (4)
	Sometimes	25 (2)
	Rarely	16 (1)
	Missing	2 (0)

5.2.6 Level of Care

Unlike the medical bed census, no proxy or assessor recommendations regarding LTC placement were obtained in the general population sample. Instead, the expected LOC was calculated using a statistical model described in the next section of this report. However, correctional officers (COs) who served as proxy respondents were asked to assess whether they felt that the inmate should not be housed in the general population because of disease or due to a functional or cognitive reason. CO proxies felt that housing in the general population was not appropriate for 9 percent of assessed inmates as shown in Table 18.

Table 18: CO Proxy Assessment of Inmate's Current Level of Care Assignment

Value	Number (Pct)
Inmate Considered Physically or Medically Unsafe In GP	101 (9)
Inmate Not Considered Physically or Medically Unsafe In GP	1057 (91)
Missing	8 (0)

5.2.7 Overlap of Mental Health and Long-term Care Need

Although we did not incorporate the MHTS into the PDS, there was some mental health classification data available in the PDS from DDPS and utilization data. Having a mental health classification of EOP or CCCMS in the DDPS data indicated a history of being in an EOP or CCCMS bed. Inmates with a mental health classification of EOP or CCCMS were more likely to need LTC. These beds were included in our general population sample because they had not been accounted for in the medical bed census. However, the inmates with a mental health classification code of EOP or CCCMS were not necessarily in such beds at the time of the general population survey. After adjusting for sampling probability, inmates in the nine sampled prisons with a history of being in EOP or CCCMS were 5.6 and 1.8 times as likely to need LTC as inmates who had no mental health classification (and presumably no history of occupying EOP or CCCMS beds) Table 19.

Table 19. Relative Risk of LTC Need among Patients with History of Occupying Mental Health Bed

MHCODE	Expected Number with LTC need*	Population**	Fraction with LTC need	Relative Risk
none	603	35,617	1.69%	n/a
CCCMS	279	8957	3.12%	1.8
EOP	89	943	9.44%	5.6

*Adjusted for sampling probabilities (i.e. the value reflects the expected number for all nine sampled facilities
**General population of nine sampled facilities

6.0 Estimates of Long-term Care Need in the Prison Population

This section of the report describes the methods used to estimate the number of long-term care (LTC) beds that the California Prison Health Care Receivership Corporation can expect to need in the future to house California prisoners and provides those estimates and projections.

As described earlier in the report, two groups of inmates were assessed to provide data for projecting long-term bed needs: a census of patients in medical beds and a sample drawn from general population housing units at nine facilities. Primary differences between the two data collection processes were that 1) CDCR nursing staff from the medical units served as proxy data sources in the Medical Bed Census Assessment Tool while CDCR COs served as proxies for the General Population Assessments; and 2) proxies and assessors made a LOC determination for each assessed inmate in the Medical Bed Census, but no assignment was made in the General Population Assessments. This LOC determination (LOC) was not made as part of the General Population Assessment. As a result, it was necessary to develop an algorithm to estimate a sampled inmate's need for LTC and the level of that care directly from the assessment data.

6.1 Development of an Algorithm to Estimate the Probability of Current Long-term Care Need for General Population Inmates

As described in Section 4.1.2 of this report, a new definition of CDCR's levels of care, or need for long-term housing and care, were conceptualized by CPR staff that reflects a vision for the future that houses inmates into five major levels:

- high acuity medical beds;
- low acuity medical beds;
- specialized/sheltered housing,
- regular general population, and
- hospice.[2]

CDCR assessors, in addition to assigning a LOC to each assessed inmate in the medical bed census sample, were asked to estimate whether the inmate required the assigned LOC for more or less than the next three months.

The LOC determinations from the medical bed census contributed greatly to our analysis and interpretation of general population assessment data. After several iterations of initial data analysis, we decided to hold these determinations as the "standard" to which various statistical and clinical algorithms and other efforts to group or categorize inmates would be compared.

The LOC assignment algorithm was developed with input from three clinicians participating in the project. Alternative specifications of the algorithm were tested among the medical bed patients for

[2] Though these levels of care may be redefined over time in terms of the type of care and supports they will provide, the project team relied heavily on the conceptualized levels in these analyses.

whom a LOC recommendation had been made by the clinician assessors. We were able to use the medical bed census assessment data to develop and test alternative specifications of the LOC placement algorithm (as again, this sample was associated with a LOC recommendation). Variations of the algorithm were then applied to the inmates in the general population sample in order to assign the main outcome variable (Level of Long-term Care: 1. general population, 2. specialized general population, 3. low acuity long-term care, and 4. high acuity long term care). The algorithm is structured sequentially so that the need for LTC outside the general population is first established based on functional and/or cognitive impairment (inmates must have at least one major ADL or permanent PADL or cognitive problem to be considered for LTC). Then the *probability* of needing LTC and the *level* of that care are estimated for these individuals using statistical models based on observed diagnoses and nursing needs.

To develop the statistical models, we used the medical bed census data. Disease diagnoses and nursing needs from the assessment tool were tested both for correlation with the need for LTC and for correlation with the LOC among inmates identified as needing LTC. Any diseases or nursing needs that were significantly correlated with needing LTC were retained as variables in the logistic model used to predict LTC needs among general population inmates who met the clinical criteria of having functional and/or cognitive limitation. Similarly, any diseases or nursing needs that were significantly correlated with at least one of the levels of care were retained as variables in the multinomial logistic model used to predict level of care. These correlations are shown in Appendix 7 [TABLES A7.1-4].

Our approach to estimating the long-term housing and support needs of general population inmates involved two steps:

- First we modeled placement determinations from the medical bed census and tried to differentiate those inmate characteristics that CDCR assessors seemed to rely on to “drive” their LOC determinations.
- Then (when that approach resulted in some somewhat spurious findings) we worked with clinical CPR staff to develop a clinical model (or algorithm) to attempt to group or categorize inmates in our sample.

In the end, we used a “hybrid” approach to estimating California inmates’ long-term housing and supports needs, by “screening” our sample first to identify current inmates in the general population units that have a probability of requiring long-term care, and then applying a statistical model to group inmates by need according to their probability of any given set of conditions and treatment needs. As described below, inmates’ physical functioning was the primary driver of the screening step.

6.1.1 Estimating the Need for Long-term Care

The team agreed that functional and cognitive impairment are key drivers of an inmate’s need for LTC and supports, and the literature is robust with examples of models that estimate need for care, services, and nurse staffing levels, using activities of daily living, cognitive status, and other health characteristics (Finch, Kane, and Philip, 1995; Lazaridis, Rudberg, Furner, and Cassel, 1994; Fries, 1990).

Based upon the literature and the clinical input of the team, six sets of alternative criteria were considered for identifying inmates needing care outside of general population. Listed in order of increasing inclusiveness, they are:

I. Any person requiring extensive assistance or totally dependent in at least two ADLs or with permanent limitation in at least two PADLs
II. Any person requiring extensive assistance or totally dependent in at least one ADL.
III. Any person requiring at least limited assistance in at least one ADL.
IV. Any person with permanent limitation in at least one PADL
V. Any person requiring extensive assistance or totally dependent in at least one ADL or with permanent limitation in at least one PADL
VI. Any person requiring extensive assistance or totally dependent in at least one ADL or with permanent limitation in at least one PADL or with any cognitive problem (in decision-making, short term or long term memory, or making themselves understood)

The performance of these criteria as screening tests for LTC need among inmates in medical beds is summarized in Table 20. None of the threshold criteria for LTC constructed using functional and/or cognitive limitations captures every medical bed patient assessed to be in need of LTC, suggesting that some factors other than the observed functional and/or cognitive limitations are associated with a need for LTC. Moreover, there is a tradeoff between the accuracy with which patients are properly identified as needing LTC (sensitivity) and the accuracy with which patients are properly identified as not needing LTC (specificity). For example, one of the more stringent criteria tested (I) requires that a patient must have a major limitation in at least one ADL. Using these criteria, only 35 percent of inmates in medical beds that were assessed to need LTC are identified as such. However, only 16 percent of inmates in medical beds that were assessed as not needing LTC would be misidentified as needing LTC. If the criteria are relaxed so that any major limitation in an ADL or any permanent limitation in a PADL or any cognitive problem is taken as an indicator of LTC need, the fraction of inmates in medical beds correctly identified as needing LTC increases to 81 percent. But, the fraction of inmates in medical beds that are incorrectly identified as needing LTC also increases (from 16 percent to 36 percent).

Table 20. Test Characteristics for Identifying LTC with Measures of Functional Limitation Among Medical Bed Occupants

	I. At least 1 Major Limitation in ADLs* (Percent)	II. At least 1 Limitation in ADLs** (Percent)	III. At least 2 Major ADL Limitations or 2 Permanent PADL Limitations (Percent)	IV. At least 1 Permanent PADL Limitations (Percent)	V. At least 1 Major ADL Limitation or Permanent PADL Limitation (Percent)	VI. At least 1 Major ADL or Permanent PADL or Cognitive Problem*** (Percent)
Sensitivity (Fraction of LTC patients identified correctly)	35%	58%	66%	71%	74%	81%
Specificity (Fraction of non-LTC patients identified correctly)	84%	69%	72%	72%	67%	64%

*Extensive assistance or total dependence in at least one ADL.
**Limited assistance, supervision, extensive assistance or total dependence in at least one ADL.
***Cognitive Problem is defined as any short or long term memory problem, or limitation in decision-making, or limitation in making oneself understood.

It is interesting to note that LTC need was more effectively identified using PADLs than ADLs. Using ADLs alone (I or II) identifies only 35 percent (when criteria is "extensive assistance in at least one ADL") or 58 percent (when criteria is "at least limited assistance in at least one ADL") of LTC inmates in medical beds. However, using a criterion of at least one permanent PADL limitation (IV) identifies 71 percent of LTC inmates in medical beds. Because of the correlation between ADLs and PADLs, adding major ADL limitations to the criteria (i.e., V) only results in an increase from 71 percent to 74 percent of LTC inmates identified. Adding cognitive problems to the criteria, increases the fraction of LTC inmates identified to 81 percent. Set of criteria VI—the most inclusive—was used in our final analyses.

The purpose of the algorithm was not to guide individual clinical care decisions, but rather to estimate an overall need for long-term-care in the total CDCR population. Therefore, instead of using decision rule to classify an inmate into a discrete category (e.g., LTC needed or LTC not needed), it was possible to assign a *probability* of LTC need to each inmate based on the health-related data collected using the assessment tool. We tested alternative specifications of a regression model for predicting the probabilities of LTC need among medical bed census patients. The model included age, indicator variables for functional limitation in ADLs and PADLs and cognitive problems, as well as constructed variables representing sets of disease diagnoses and nursing needs drawn from the 105 diseases and 56 nursing needs listed on the assessment tool. Diseases or nursing needs were selected for inclusion in these constructed variables based on their significant ($p<0.05$) positive or negative correlation with the LTC recommendation of the clinician-assessors. Four such constructed variables were considered for the model (Table 21).

Table 21. Constructed Variables for LTC and LOC Prediction Models

Constructed Variable	Included diseases or nursing needs
Count of diseases predicting long term care	Hypertension, Ischemic Heart Disease, Congestive Heart Failure, Atrial Fibrilation, COPD, Chronic constipation, Chronic renal insufficiency, Dementia, History of stroke with residual, Hemiplegia, Quadriplegia, Paraplegia, Hearing loss, Diabetes mellitus
Count of diseases predicting short term care	MRSA, Cellulitis, Herpes zoster, GI bleed, Nausea and vomit, jaw fracture, pre-procedure care, post-hospital care
Count of nursing needs predicting long term care	Vital signs daily, Nebulizer, Trach care, Fingersticks less than daily, Oral anticoagulants, Medication administration, Urinary incontinence, Diapers/briefs, Condom catheter, Gastro PEG tube, Fecal incontinence, Walker, Wheelchair, Mechanical Lift, Blind in 2 eyes, Hearing impaired, History of recent falls, History of falls past >90days, PT and/or OT
Count of nursing needs predicting short term care	Vital signs Qshift, Intermittent IV, Continuous IV, Central Line/PICC, SQ anticoagulant, Surgical site/drain care daily, Surgical site/drain care < daily

The results of the final logistic model are shown in Table A.7.5. Consistent with the observation that PADLs are more useful than ADLs for identifying LTC need among inmates in medical beds, the variables measuring limitations in ADLs were not significant when limitation in PADLs were included in the model. Similarly, although age is strongly correlated with LTC need, age was not a significant predictor when other factors were included in the model, and, therefore, was dropped from the specification.

6.1.1.1 Correction Factor

Because the coefficients of the predictive model were estimated using data for patients in the medical bed census, a methodological issue arises when we attempt to apply the model to the general population. The model does not capture all the factors that affect a patient's probability of needing LTC. Unobserved factors that are associated with a need for LTC are likely to be concentrated in the subpopulation of inmates in medical beds. As a result, applying the predictive model to the general population will overestimate the LTC need in that population. To illustrate, consider an inmate in a medical bed with no functional limitation in ADLs or PADLs, and no cognitive problems. According to the model, this inmate still has a 27 percent chance of currently needing LTC. It is unlikely that a randomly selected inmate living in the general population, also with no functional limitations in ADLs or PADLs and no cognitive problems, faces a 27 percent chance of currently needing LTC. Clearly, other factors (observable to the clinician-assessor, but not related to functional status) must explain the high likelihood of LTC need for the inmate currently in a medical bed.

One solution to this methodological problem would be to mirror the protocol used in the medical bed census and obtain a level-of-long-term care recommendations from clinician-assessors drawing on data collected with the assessment tool. In this way, the relationship between assessment tool variables and the need for LTC for general population inmates could be directly established.

An alternative solution, hereafter referred to as algorithm VII, implements a correction factor to the model's predicted probabilities. If one is willing to assume that the probability of LTC need among inmates with observed functional or cognitive limitations is similar for inmates in the general population and inmates in medical beds (i.e. an observable impaired functional status outweighs

unobservable factors) then one could accept the model's prediction for inmates with some functional or cognitive limitation, but downweight the model's prediction for those who are *not* functionally or cognitively impaired. To downweight the model's predictions for these individuals, the predictions could be multiplied by a correction factor that represents the assumed relative risk of needing LTC for general population inmates versus medical bed inmates (with no observed functional or cognitive impairments). Since the probability that a general population inmate with no observable functional or cognitive limitations is likely to be very low, we assumed the correction factor to be zero. With this approach, inmates must have at least one major ADL or permanent PADL or cognitive problem to be considered for LTC. Among those who meet that criterion, their probability of needing LTC is calculated using the (uncorrected) predictive model. To the extent that LTC need is still influenced by unobservable factors that are correlated with bed type even among those with similar functional status, the estimates generated by this approach may still be overestimates. Any overestimation may be offset by the assumption that *no* individuals in general population who are free of limitation in observed ADLs, PADLs, or cognition require LTC.

6.1.2 Estimating Level of Care

Having established a decision rule for assigning probabilities of current LTC need to general population inmates, we then developed a method for estimating the level-of-care required by these LTC inmates. The disease diagnoses and nursing needs on the assessment tool were tested for significant correlation with level-of-care among inmates identified as needing LTC in the medical bed census. Diagnoses and nursing needs that were significantly correlated were then tested in a multinomial regression model for estimating the probabilities of needing one of three levels of care (i.e., specialized general population, low-acuity long-term care, high-acuity long-term care). Any variables that were significant predictors for at least one of the levels of care were retained in the model (Table A7.6). This multinomial model was then used to estimate a probability that an inmate needing LTC would need each of the three types of LTC beds. The probabilities for the three beds summed to one. For example, an inmate with particular characteristics might be found to have a 65% chance of needing LTC and given that LTC is needed, they may have a 10% chance of needing hi-acuity care, 15% chance of low-acuity care, and 75% chance of needing a specialized general population bed.

6.2 Adjusting for Low Sensitivity of Correctional Officer Nominations

When calculating the estimates of LTC bed need as described above, we assumed that no inmates in the 4th stratum (low-risk and not nominated) needed long-term care. In other words, we assumed that the nomination procedure would identify all inmates needing long-term care. However, an analysis of the CO nominations among the inmates in our sample indicates that the nomination exercise was not very sensitive (Table A4-1). From our sample, we estimated 329 inmates need long-term care and 80 (24%) of them had been nominated by COs.

In order to get an estimate of the number inmates with long-term care needs among the inmates in the unsampled stratum of non-nominated low-risk inmates, we used the proportion of inmates from the medical bed census who were in the low-risk group in the 9 sampled prisons (33/164 = 20%). Assuming that the distribution of inmates with LTC need across the low and high risk groups is the same for the inmates in general population as it was for the inmates in medical beds, then, had there

been no nominations, the number of inmates from general population needing LTC that we calculated above, $\hat{C}$, would be an underestimate that can be corrected by multiplying by the adjustment factor, R = 164/(164-33) = 1.25. Because the sensitivity of the nominations in our project was 24%, the adjustment factor can be reduced to 164/(164-(33*0.79)) = 1.19. This is the adjustment factor we used in reporting our main results. The confidence interval around our estimate of current LTC bed need was adjusted by multiplying the $Var(\hat{C})$ by R^2.

6.3 Population-level estimates of current long-term care needs

To calculate the total number of inmates needing LTC at each LOC, we first applied, to our sample, the clinical criteria requiring that an inmate has some functional or cognitive limitation in order to be considered for LTC. For the inmates with such limitations, we then estimated their probability of needing LTC using the logistic model described above. (It was assumed that inmates without functional limitations or cognitive limitations did not currently need LTC). Then for inmates expected to need LTC, we applied the multinomial logistic model to estimate the probability these inmates would need each of the three types of LTC bed (levels of care). The results for each sampled inmate were weighted by the inverse of their sampling probabilities to generate an estimate of LTC need for the nine sampled prisons. The estimates for the sampled facilities, excluding CMF, were then generalized to the general populations of the 24 unsampled facilities, using weighting of inmates by risk strata. Estimate for CMF's general population were treated separately from the other prisons because of the prison's unique medical mission and the concentration of inmates with medical needs within its population. We then applied the adjustment factor (discussed in section 6.2) to the results for general population in order to account for LTC need in the unsampled stratum. Adding together the general population estimates of all the prisons and the estimated number of inmates needing LTC from the statewide medical bed census produced a total estimate for LTC bed needs across the CDCR system. These estimates are reported in the Table 22.

Table 22: Estimates of Current Need for Long-Term Care Beds in the California State Prison System*

Sub-population	Level of Long-term Care			
	Specialized GP (number of inmates)	Low Acuity (number of inmates)	High Acuity (number of inmates)	TOTAL (number of inmates)**
Medical Beds - all prisons	183	92	91	366
CMF	173	43	18	233
8 other sampled facilities	567	125	46	738
24 unsampled facilities	934	208	77	1,219
TOTAL- All prisons , unadjusted**	1,856	469	232	2,557
Adjustment Factor for Unsampled Strata				1.19
TOTAL – All prisons, adjusted for LTC need within unsampled stratum	2174	541	259	2974
95 percent confidence Interval (Lower Bound, Upper Bound)				(2713, 3233)

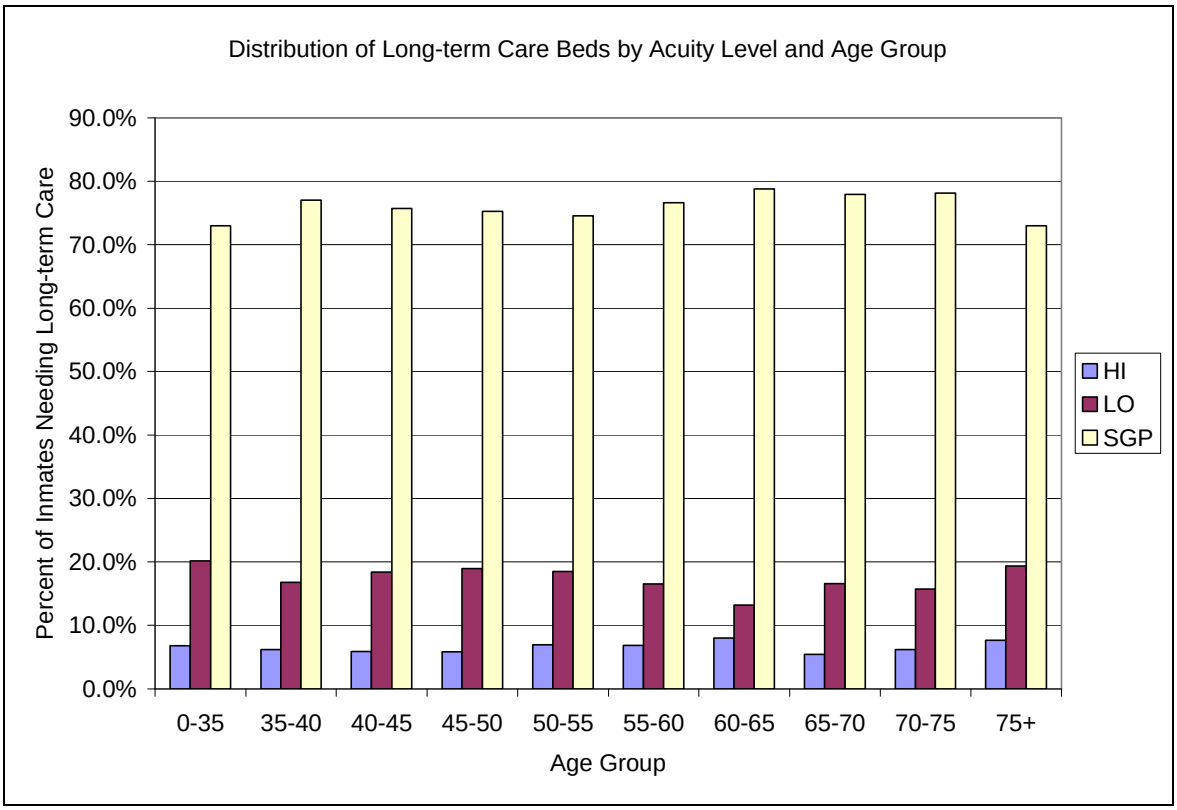
*Based on a population of 135,863 that does not include ~28,000 inmates in reception centers or ~7500 in community corrections.
*95% CI = E(X) +/- 1.96 * SQRT (Var(X)) where X is the number of beds needed

The 95 percent confidence interval around the total estimate of 2,974 beds is (2713, 3233). The inmates in need of LTC based on our estimates represent almost 2 percent of the CDCR inmate population. However, this estimate does not include the roughly 28,000 inmates in reception centers or about 7,500 in community corrections.

Our confidence interval estimates do not account for uncertainty in the value of the adjustment factor we calculated. This adjustment factor is calculated based on relatively small numbers of inmates in medical beds, and its true value may be significantly different than we observed. To account for this we tested the impact of different values of the adjustment factor on our estimates. In this sensitivity analysis, we found that even if the adjustment factor were as high as 1.5, which implies a 1 percent prevalence of LTC need in the "unsampled and not nominated" stratum--a reasonable upper bound--the total number of LTC beds currently needed would be 3,836 (95 percent CI: 3349, 4322)

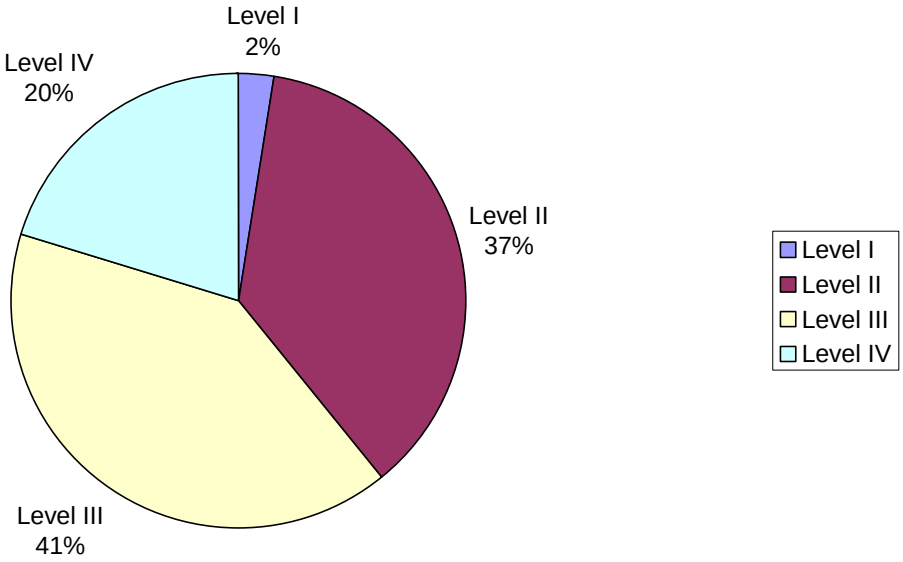
Approximately 73 percent of the LTC beds are required at the level of specialized general population, 18 percent of the required beds are low-acuity, and 9 percent of the required beds are high-acuity. Among those needing long-term care, we expected to observe higher acuity needs for older inmates. However, no such trend was observed (Figure 6.1). For all age groups, between 73 percent and 79 percent of inmates needing long-term care were estimated to need care at the specialized GP level. Similarly the approximately 2:1 ratio between low-acuity and high-acuity beds was constant across age groups.

Figure 6.1



In planning for the construction of new LTC beds, non-medical custody factors must be considered. In particular the security level at which inmates are housed may constrain the housing placement decision. Among the entire prison population (in our December 2006 cohort) 75%, 5%, and 20% of females were housed at level I, II, and III. Likewise, 14%, 29%, 35%, and 22% of males were houses at level I, II, and III. However, our sample of female inmates only included inmates at security level I and the distribution of inmates in the eight male institutions we sampled was 6%, 36%, 32%, and 26% for the four security levels, I, II, III, and IV, respectively. Among inmates at these prisons estimated to need LTC, 2%, 37%, 41%, and 20% of were at security level I, II, III, and IV, respectively (Figure 6.2). Thus, inmates needing LTC were somewhat more frequently found at security level III and less frequently found at levels I and IV than the non-LTC population of their prisons.

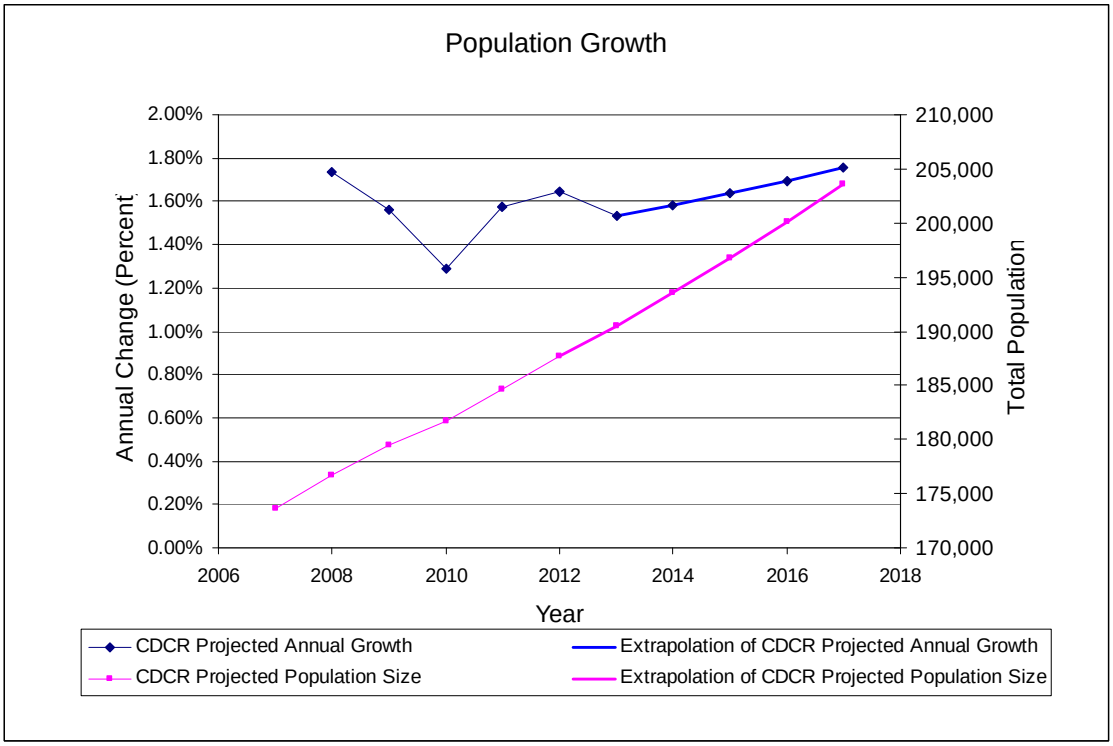
Security Level of Male Inmates Needing Long-term Care



7.0 Projected Growth in Long-term Care Needs for CDCR Inmates

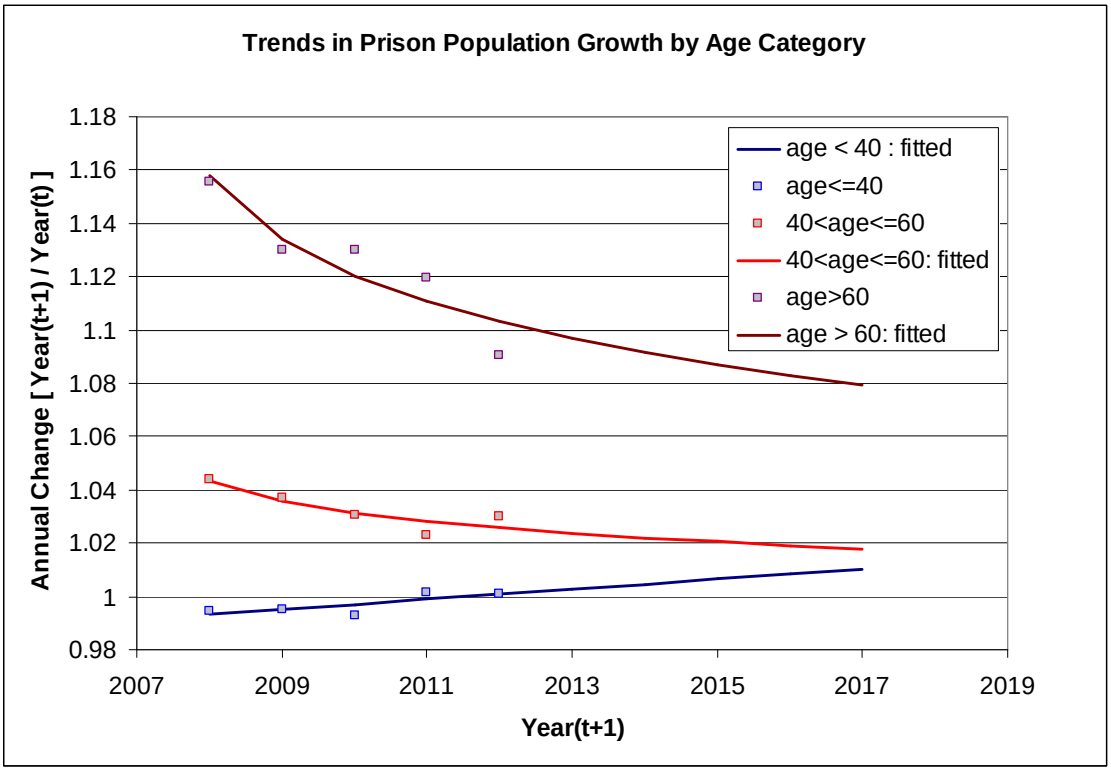
The California prison population is ageing. According to CDCR projections, the total CDCR inmate population is expected to increase by 8 percent through 2012, but the over-60 age group will increase by 80 percent[3] (Figure 7.1). We extrapolated the CDCR's official projections for an additional five years (through 2017) by fitting trendlines to the growth rates within age strata and projecting the change in population within these age groups (Figure 7.2).

Figure 7.1



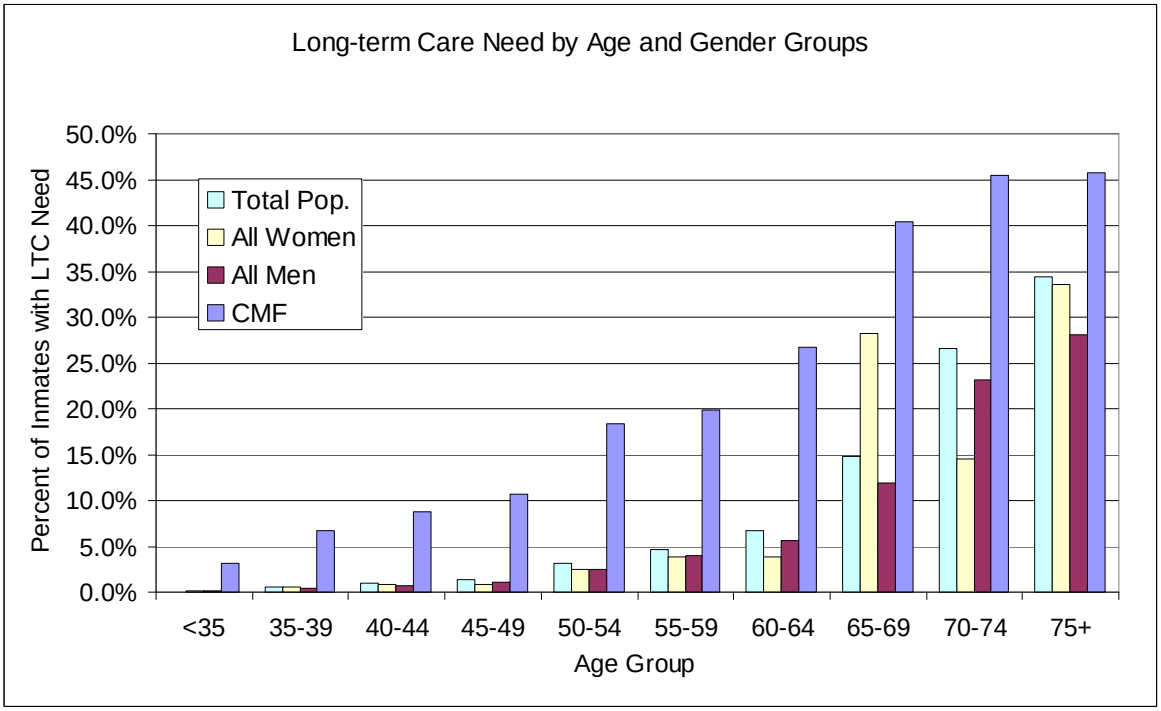
[3] California Department of Corrections. 2007. "Adult Population Projections 2007-2012" http://www.cdcr.ca.gov/reportsresearch/OffenderInfoServices/Projections/S07Pub.pdf

Figure 7.2



The rapid increase in the number of older inmates will drive demand for LTC within the California prison health care system. Our project found that the probability of needing LTC increases exponentially with age. The fraction of inmates under 50 needing LTC was under 1 percent. The probability of needing LTC reaches 6.8 percent for those aged 60-64, 15 percent for those aged 65-69, 27 percent for those aged 70-75, and 34 percent in inmates over 75 (Figure 7.3).

Figure 7.3



To generate projections of LTC bed need over the next five years, we partitioned the estimated 2557 LTCs that are currently needed in to 10 age categories. We calculated the proportion of population that currently needs LTC within each age category. Then we applied that estimate of the age-specific prevalence of LTC need to the CDCR's age-structured population projections. For example, we found the prevalence of LTC need among the 55-59 age group was 4.65 percent. From 2007 to 2008, that age group is projected to increase by 671 from 5889 to 6560, so that absolute number of individuals needing LTC in that age group would increase from 274 (5889 x 0.0465 = 274) to 305 (6560 x 0.0465 = 305). We then applied the adjustment factor for LTC need in the unsampled stratum. By 2012, we estimate that between 3,835 and 4,570 beds will be needed. The resulting projected number of LTC beds needed over the next ten years are shown in Table 23.

Table 23. Projected Number of Long-term Care Beds Needed Over the Next Ten Years*

Year	Expected LTC Need	Lower Bound Estimate†	Upper Bound Estimate†
2007	2974	2713	3233
2008	3224	2941	3504
2009	3474	3170	3777
2010	3697	3373	4019
2011	3939	3593	4282
2012	4204	3835	4570
2013	4411	4144	4797
2014	4624	4344	5029
2015	4842	4548	5265
2016	5064	4757	5507
2017	5292	4971	5755

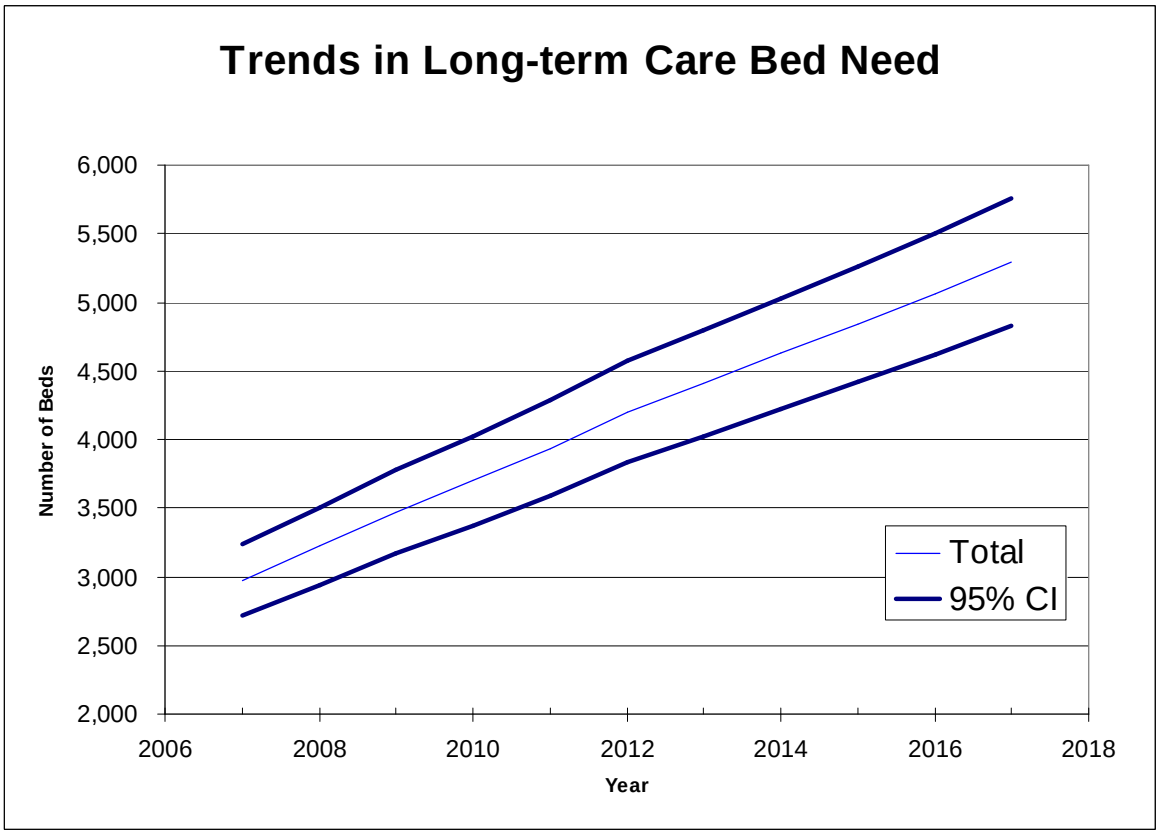
*The estimates for the first 5 years are based directly on the age- and sex- structured population projections developed by CDCR as described in the text. The second five years (2013-2017) are based on extrapolations of the CDCR population projections obtained by fitting parametric trendlines to the age-stratified population growth projections as described in the text.

†The lower bound estimate represents projections based on the lower threshold value in the 95% confidence intervals of the base estimate of current LTC bed need and the upper bound estimate represents projections based on the upper threshold value in the 95% confidence intervals of the base estimate of current LTC bed need adjusted for LTC need in the unsampled strata. The projected trends do not incorporate a measure of increasing uncertainty over time.

By extrapolating the CDCR prison population projections and additional five years (to 2017), we found that the trends in inmate ageing would continue, and LTC bed need would continue to rise approximately 230 beds per year (Figure 7.4). Assuming the projected population growth and age-group trends persist for an additional five years to 2017, the continued aging of the population will require between 4,970 and 5,760 beds for inmates with long term care needs.

These results do not account for the possibility that chronic disease progresses more slowly among incarcerated individuals than among free persons. In other words, if inmates who are 50 in 2017 will have spent more of the preceding years incarcerated than inmates who reached 50 in 2007, then older inmate in the future may have lower rates or less severe chronic disease than current older inmates. This may reduce the need for LTC beds somewhat.

Figure 7.4*



*The projected trends do not incorporate a measure of increasing uncertainty over time.

8.0 Discussion

The results of the medical bed census suggest a fairly high overall concurrence between placement in some type of medical bed and assessed needs for care beyond that available in regular GP. However, the results of the census also reveal substantial discordance between current placement in *specific* types of medical beds and assessed level of care needs. In most cases of discordance, it was found that the inmate could be better served at a lower level of care, suggesting that health care infrastructure and services could be reorganized to accommodate inmates in specialized general population units where their moderate care needs could be more efficiently met.

The survey of general population found considerable unmet need for long-term care services. We estimate that over 2500 inmates currently in regular general population could benefit from a transfer to LTC medical beds. However, nearly three-quarters of these inmates were estimated to need a low level of LTC that could be provided in specialized general population housing designed specifically to support the delivery of long term care programming. The construction or reallocation of new beds to this level of care would increase the real capacity of the infirmary beds (GACH, CTC and OHU) to treat short-term patients with acute medical needs. The potential to create greater capacity in the infirmary beds for acute care is substantial. Of the inmates in the census, no more than 215 (30 percent) would remain in the current infirmary beds if adequate LTC housing was available. We expect a new care configuration that supported LTC and liberated infirmary beds for short-term beds would likely reduce CDCR's reliance on relatively expensive community hospital beds and reclaim current CTC and OHU beds for acute infirmary care.

The establishment of housing and programming for inmates with LTC needs will surely increase the overall number of inmates in medical beds. The transfer of inmates from regular GP to LTC beds is a move to a higher level of care, but the implication for resource utilization is uncertain. A case management program for inmates in LTC beds may improve health outcomes and reduce the utilization of community hospital beds, which may, in turn, offset some of the costs associated with delivering long-term care.

The results of the full analysis including the medical bed census and the general population sample indicate that 2974 (95% CI: 2710, 3230) LTC beds are currently needed. The projected aging of the prison population is expected to drive growth in the demand for LTC beds and programming. The need for these beds will increase by roughly 230 beds per year over the next decade. By 2017, between 4,970 and 5,760 LTC beds will be needed.

One surprising finding of the study was the lack of association between age and level-of care *among inmates needing LTC*. We expect that as inmates age they may progress from specialized GP to higher levels of care. Our study is not longitudinal and could not follow the clinical progress of inmates over time. Nevertheless, we expected that LTC need among older inmates would be more likely to be at higher levels of care than LTC need among younger inmates. Because we did not observe this association between inmate age and level of care among inmates estimated to need long-term care, we reported bed need projections for all levels of long-term care combined. The aging of the prison population over the next decade will drive a steady increase in demand for long-term care beds, but our findings suggest that the distribution of long-term care bed demand by level of care will remain relatively constant with about three-quarters of LTC beds at the specialized GP level. Of the remaining LTC beds, about two-thirds are expected to be low-acuity and one-third high-acuity.

Our findings indicate that LTC need may be disproportionately higher among security level III inmates and lower among security level I and IV inmates, but these differences were modest. In general, we found that beds will be needs at all four security levels roughly in the same proportions found in the overall prison population.

Our study has several limitations. Our statistical models for projecting LTC need and for projecting level of care among general population inmates with LTC need relied on generalizing the relationship between LTC need and variables in our assessments for inmates currently in medical beds to inmates in the general population. To the extent that there were unobserved drivers of LTC need for the inmates in medical beds which we could not account for with our methods, we may have overestimated LTC need in the general population. The size of this overestimation would only be measurable if some clinical evaluations were conducted on a portion of the sampled general population inmates. Limited resources for data collection necessitated an approach in which the population was stratified and sampling occurred only in the higher-risk strata. Although we designed a reasonable method for estimating the amount of LTC need in the unsampled stratum, our method relies on a relatively small sub-sample of medical bed inmates and thus is subject to some significant uncertainty. Fortunately, we were able to set a reasonable upper bound on this uncertainty in sensitivity analysis. Our analysis did not calculate the uncertainty around the distribution of LTC patients into the three levels of care. And, as with the estimates of overall LTC need, the estimates of level-of –care needed also rely on generalizing from medical bed inmates to the general population. Finally, our analysis did not account for uncertainty in the CDCR population projections or trends in medical care over the next decade. Our LTC need projections do not account for uncertainty in the CDCR population projections on which they are based. Since the spring of 2000, the 5-year population projections of the CDCR have been quite accurate, with about a 4% underestimation error of inmate population 5 years into the future. This suggests that our confidence intervals for LTC need projection could be widened modestly to account for population projection uncertainty.

The Receiver has proposed the construction of 5,000 new health care beds. Earlier this year, Governor Arnold Schwarzenegger signed into law the Public Safety and Offender Rehabilitation Services Act of 2007, which provides for the immediate construction of 6,000 health care beds plus an additional 2,000 beds conditional on CDCR meeting rehabilitation, management, and construction benchmarks. Our results suggest that over half of these beds should be allocated to LTC in order to meet the growing need as California's prison population ages. Despite the limitations of our analysis and the corresponding uncertainty that remains in our estimate of current and future LTC need, we expect that 5000 beds will be adequate for meeting the LTC need of the California prison population over the 10-year time horizon we considered.

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Appendices

Table of Contents

Appendix 1:

Appendix 1: Project Data Set: Supporting Material and Tables 1
A1.1 Utility of PDS for the Data Warehouse Initiative 1
A1.2 Disability Data 1
A1.3 Health Care Utilization Data 2

Appendix 2a: Medical Bed Census Assessment Tool 10

Appendix 2b: General Population Assessment Tool 18

Appendix 3: Development of the Assessment Tools and Data Collection Protocol: Supporting Material and Tables 24
A3.1 Assessment Tool Domains 24
Section 1: Demographics 24
Section 2: Disease Burden 24
Section 3: Medical-Nursing Needs/Treatments 24
Section 4: Activities of Daily Living (ADLs) / Mobility 25
Section 5: Prison Activities of Daily Living (PADLs) 25
Section 6: Cognitive Status 26
Section 7: Level-of-care Assignment 26
A3.2 Comparison of the Medical Bed Census and General Population Assessment Tools 27
A3.3 Pilot Testing the Assessment Tool 27
A3.4 Data Collection Protocol 29
A3.5 Performance of the General Population Assessment Tool and Recommendations 30
A3.6 Data Collection Limitations 30
Section 2: Disease Burden 30
Section 3: Medical-Nursing Needs/Treatments 31
Section 4: Activities of Daily Living/Mobility and Section 5: Prison Activities of Daily Living 31
Section 6: Cognitive Status 31

Appendix 4: Primary Data Collection Findings: Supporting Material and Tables 32
A4.1 Findings from the Medical Bed Census 32
A4.1.1 Chronic Diseases 32
A4.1.2 Nursing Needs 35
A4.1.3 Functional Status 36
A4.1.5 Level of Care Assignment 37
A4.2 General Population Assessments 38
A4.2.1 Demographic and Custody Factors of the General Population Sample 38

Appendix 5: Methods for Stratifying the Population According to Long-term Care Risk 42
A5.1 Sample Selection 43
A5.2 Notation 43
A5.3 The Estimates 44
A5.4 Dealing with Rare Events 45
A5.4.1 Calculating Optimal Sampling Probabilities: 45

Appendix 6: Creating Sample Weights 49

Appendix 7: Development of Algorithm to Determine Appropriate Level of Care: Supporting Material and Tables 51

Appendix 8: Estimating the Number of Inmates with Current Long-term Care Need..... 55
A8.1 Adjusting for Low Sensitivity of Nominations 57

Appendix 1: Project Data Set: Supporting Material and Tables

A1.1 Utility of PDS for the Data Warehouse Initiative

Much of the data collected in the PDS could also be valuable for medical case management. The PDS offers a snapshot of inmates who were in prison on December 31, 2006; yet, it serves as a prototype for a clinical data warehouse that would integrate this information in real-time for use in ongoing care management by medical and custody CDCR staff. All of the data sources from which the PDS was constructed could dynamically feed into a clinical data warehouse.

Although the value of a clinical data warehouse as a tool for high-quality, cost-effective care management is clear, several obstacles identified during construction of the PDS will need to be addressed before a "live" clinical data warehouse can be developed. The health-related data systems throughout CDCR suffer from (1) a lack of standards, policies, and procedures for data management, (2) a lack of infrastructure for integration and interoperability among facilities across the state, and (3) an over-reliance on ad hoc, labor-intensive efforts to extract information and reconcile discordant information across multiple legacy data systems, all of which results in poor data quality, overworked staff, and a missed opportunity to provide quality health care.

In the case of the Armstrong-Clark Tracking System (ACTS), the Mental Health Tracking System (MHTS), and the Pharmacy Tracking System (PTTS) data is spread across facilities in separate Microsoft Access databases. For example, Abt obtained 33 standardized stand-alone ACTS database files from CDCR, one for each prison.

A1.2 Disability Data

The PDS includes inmate disability data from facility-level ACTS. These facility-level ACTS databases are used to track inmates with special care needs as a result of having developmental or physical disabilities. Information from these databases is synchronized manually with the central DDPS/OBIS system as rarely as once per year. A DPP classification code is used to indicate physical disabilities. DPP classification codes were not found consistently in the ACTS data extracts that CDCR provided Abt. Therefore, we used the DPP codes from DDPS. An inmate can have up to 10 DPP codes recorded in DDPS resulting from multiple disabilities and multiple assessments during the course of an inmate's incarceration. A DDP classification code of "DDx" (where x represents an integer between 1 and 3) indicates that an inmate has developmental disabilities requiring special care and monitoring.

Comparing the classification of inmates according to the Clark assessment code for developmental disability program (DDP) placement found in ACTS databases at individual facilities to the corresponding classification information found in the central DDPS/OBIS system we found significant discordance as shown in Table A1.1. Of 171,959 inmates in the prison population on March 14, 2007, 1065 unique individuals were found to be classified as "DDx" in either the facility-level ACTS database or the central DDPS system. However, only 470 (44 percent) of these inmates were identified with a matching "DDx" code in both data sources. If the facility-level ACTS

databases are taken as the "gold-standard" (as was recommended by several members of the CDCR information technology staff) then the sensitivity of the central DDPS system is 55 percent (470/851).

Table A1.1. Concurrence Between Facility Data and Central Data Regarding Inmates' Developmental Disability Classification

		Central DDPS/OBIS		
		"DDx"	Not "DDx"	Row Total
Facility ACTS	"DDx"	470	381	851
	Not "DDx"	214	170,884	171,098
	Col. Total	684	171,265	171,959

Since the Armstrong-Clark data in the central DDPS are obtained through periodic updates from facilities, such substantial discordance suggests that synchronization of the two databases does not occur with sufficient frequency. The difficulty of obtaining accurate state-wide information hinders efforts to measure and manage performance and ensure CDCR is meeting the goals set for in its mission.

A1.3 Health Care Utilization Data

The PDS includes health care utilization data from two sources, PTTS and HCCUP. We consistently used a master list of major chronic diseases, corresponding to major International Classification of Diseases (ICD9) categories and American Hospital Formulary Service (AHFS) medication classifications, to identify health care utilization that is likely to be related to long-term care needs. These are shown in Table A1.2, Tables A1.3 and A1.4 provide further description of the mapping of disease categories to ICD9 and AHFS classification systems.

Table A1.2. Chronic Disease and Functional Impairment Categories

Category Number	Category Description
1	Cancer, Solid Tumors
2	Lymphomas
3	Chronic Pulmonary Disease
4	Coronary Artery Disease
5	Congestive Heart Failure
6	Peripheral Vascular Disease
7	Severe Chronic Liver Disease
8	Diabetes with End Organ Damage
9	Chronic Renal Failure
10	Nutritional Deficiencies
11	Dementia
12	Functional Impairment
13	Psychiatric diseases (incl. substance abuse)

Table A1.3. Chronic Disease and Functional Impairment Categories Used to Categorize Hospital and Physician Utilization

Category Number	Category Description	ICD9
1	Cancer, Solid Tumors	140-199
2	Lymphomas	200-208
3	Chronic Pulmonary Disease	491-494,496,501,506,515
4	Coronary Artery Disease	411-414
5	Congestive Heart Failure	398,402,404,428
6	Peripheral Vascular Disease	440,441,443
7	Severe Chronic Liver Disease	571,572
8	Diabetes with End Organ Damage	250,357,362,366
9	Chronic Renal Failure	403,585,v45,v56
10	Nutritional Deficiencies	260-263,783,799
11	Dementia	290,294,331,797
12	Functional Impairment	342,344,438,799,v44,v46,v53,887,896,897
13	Psychiatric diseases (incl. substance abuse)	290-316

(Adapted from Iezzoni, http://www.dartmouthatlas.org/faq/Chronic_Disease_ICD9_codes.pdf)

Table A1.4. Crosswalk from ICD9 to AHFS and Chronic Disease Categories Used to Categorize Medication Utilization

ICD 9	Disease/Medical Problems	AHFS CLASSIFICATION	Cat#
Endocrine/metabolic			
250	Diabetes mellitus	68:20:00	8
240-246	Thyroid disorder	68:36:00	
585	Renal failure on dialysis	40:00 & 20:00 (20:16 & 20:04)	8
Heart/Circulation			
410	Myocardial Infarction	24:00:00	
411	Ischemic Heart Disease		4
413	Angina Pectoris		4
427	Arrhythmia	24:04 / 24:08	
428	Congestive heart failure	24:04 / 24:08 / 24:12 / 40:28	5
401	Hypertension	24:08:00	
	Other heart problems of any type	Hyperlipidemia 24:06	
Peripheral Vascular Disease			
396	Heart valve damage	24:00:00	
Infections			
42	HIV/AIDS	08:18.1	
70.3	Hepatitis B	10:00 Interferons fall under misc. antineoplastics	
70.7	Hepatitis C		
11	Pulmonary Tuberculosis, present or prior	8:16	
	Under treatment currently for an infection of any type		
281	Anemia	20:04	
140-239	Cancer	10:00	1,2
Musculoskeletal			
714	Arthritis	28:08.0	
Neurological			
345	Seizure disorder/Epilepsy	28:12:00	
430-435	Cerebrovascular accident (stroke)	20:12.04 / 24:00	
331	Dementia, including Alzheimer's		11
342	Traumatic brain injury with residual Paraplegia, Quadriplegia, or Hemiplegia		12
332	Parkinson's disease	12:08.04 / 28:92	
315	Developmental disability (includes dyslexia, attention deficit & learning disorder)	28:20:00	
Pulmonary			
496	COPD	12:12 / 86:16 / 12:08.8 / 68:04	3
493	Asthma	12:12 / 86:16 / 12:08.8 / 68:04	3
Mental Health Issues			
300	Anxiety disorder	28:24 / 28:16.04	13
296.2	Major Depression disorder (single episode)	28:16.0	13
296.3	Major Depression disorder (recurrent episode)		13
296	Bipolar disorder	28:16:00	13
295	Schizophrenia	28:16:00	13
303-304	H/O Addiction to prescription, non-Rx or illicit drugs	Narcotics: 28:08.8	13

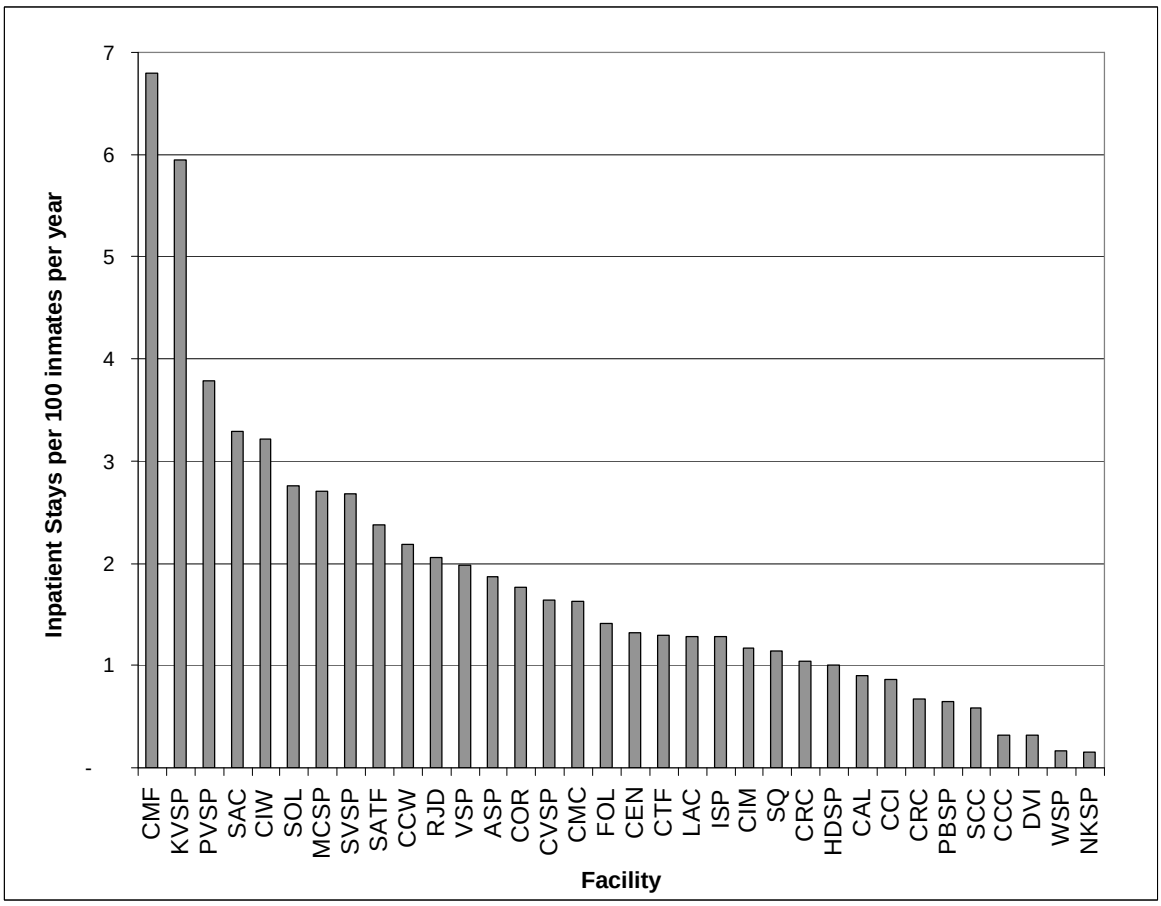
Pharmacy records from all facilities' PTTS for the month of December 2006 were included in the Project Data Set. Only utilization of medications likely to be prescribed for chronic diseases were included (i.e. AHFS categories listed in Table A1.4). The data was cleaned and aggregated by Maxor Pharmacy. Approximately 25 percent of CDCR inmates received at least one prescription medication in December 2006. The average number of prescriptions per inmate was 3.9. Table A1.5 shows, in rank order, the most prescribed medications classes. With the exception of non-steroidal anti-inflammatory agents (e.g. ibuprofen), medications for psychiatric problems were most frequently prescribed.

Table A1.5. Most Prescribed Medications

AHFS Code	AHFS Description	Script Count	Pct of Scripts
52:08.20	Nonsteroidal Anti-Inflammatory Agents	34720	22.73 percent
28:16.04	Antidepressants	23197	15.19 percent
28:16.08	Antipsychotic agents	21402	14.01 percent
28:12	Anticonvulsants, miscellaneous	9839	6.44 percent
24:32.04	Angiotensin-converting enzyme inhibitors	9379	6.14 percent
24:24	Beta-adrenergic blocking agents	7191	4.71 percent
12:12.08	Beta-adrenergic agonists	6172	4.04 percent
24:06.08	HMG-COA reductase inhibitors	6147	4.02 percent
24:28.08	Dihydropyridines	4076	2.67 percent
28.12.12	Hydantoins	3279	2.15 percent
28:24.92	Anxiolytics, sedatives & hypnotics, misc.	3140	2.06 percent
68:20.04	Biguanides	3117	2.04 percent
68:04	Adrenals	2766	1.81 percent
92:00	Antiparkinsonian agents	2543	1.67 percent
	Sulfonylureas	2046	1.34 percent
24:12	Nitrates and nitrites	1565	1.02 percent
24:20	Alpha-adrenergic blocking agents	1497	0.98 percent
8:16	Antituberculosis agents	1475	0.97 percent
24:08	Central alpha-agonists	1224	0.80 percent
	Thyroid agents	1205	0.79 percent
20:04.04	Iron preparations	1019	0.67 percent
12:12.08	Antimuscarinics/antispasmodics	815	0.53 percent
20:12.04	Anticoagulants	717	0.47 percent
8:18.08	Antiretrovirals	569	0.37 percent
24:32.20	Mineralocorticoid (aldosterone) antagnts	540	0.35 percent
24:28	Calcium-channel blocking agents, misc.	471	0.31 percent
28:24.04	Barbiturates (anxiolytic, sedative/hyp)	417	0.27 percent
28:24.08	Benzodiazepines (anxiolytic,sedativ/hyp)	345	0.23 percent
68.20.08	Insulins	330	0.22 percent
24:04.08	Cardiotonic agents	272	0.18 percent
12:12	Alpha- and beta-adrenergic agonists	229	0.15 percent
28:12.04	Barbiturates (anticonvulsants)	218	0.14 percent
28:92	Central nervous system agents, misc.	160	0.10 percent
24:08.20	Direct vasodilators	159	0.10 percent
86:16	Respiratory smooth muscle relaxants	143	0.09 percent
28:12.08	Benzodiazepines (anticonvulsants)	94	0.06 percent
10:00	Antineoplastic agents	84	0.05 percent
24:04.04	Antiarrhythmic agents	70	0.05 percent
24:06.04	Bile acid sequestrants	49	0.03 percent
24:06.05	Cholesterol absorption inhibitors	16	0.01 percent
28:20.04	Amphetamines	11	0.01 percent
24:32.08	Angiotensin ii receptor antagonists	11	0.01 percent
	Vasodilating agents, miscellaneous	7	0.00 percent
24:06.06	Fibric acid derivatives	6	0.00 percent
		152732	

For this project, we integrated Microsoft Access–based data systems used by the Health Care Cost and Utilization Program (HCCUP). These data included outpatient medical care and inpatient medical care in community hospitals for an 18-month period (July 2005 to December2006) with diagnoses matching the ICD9 codes for chronic disease and functional impairment discussed above, as well as all in-house medical care utilization (i.e. "inpatient" stays in prison medical beds). Figure A1.1 below shows the variation in rates of inpatient medical care in community hospitals across prisons.

Figure A1.1. Inpatient Hospitalization Rates



The reason for hospitalization was determined by examining the ICD9 code for the primary diagnosis (determined at discharge). A full rank-ordered list is presented in Table A1.6. Heart and back problems were most common.

Table A1.6. Top Diagnoses for Inpatient Stays

ICD9	Frequency	Percentage	Description
786	305	8.06	Symptoms involving respiratory system and other chest symptoms
414	206	5.44	Other forms of chronic ischemic heart disease
722	182	4.81	Intervertebral disc disorders
996	131	3.46	Complications peculiar to certain specified procedures
410	99	2.62	Acute myocardial infarction
682	99	2.62	Other cellulitis and abscess
V58	87	2.3	Encounter for other and unspecified procedures and aftercare
427	83	2.19	Cardiac dysrhythmias
780	79	2.09	General symptoms
571	75	1.98	Chronic liver disease and cirrhosis
250	66	1.74	Diabetes mellitus
114	65	1.72	Coccidioidomycosis
428	62	1.64	Heart failure
572	56	1.48	Liver abscess and sequelae of chronic liver disease
411	41	1.08	Other acute and subacute forms of ischemic heart disease
574	41	1.08	Cholelithiasis
998	36	0.95	Other complications of procedures, NEC
493	35	0.92	Asthma
276	34	0.9	Disorders of fluid, electrolyte, and acid-base balance
401	34	0.9	Essential hypertension
434	34	0.9	Occlusion of cerebral arteries
584	34	0.9	Acute renal failure
721	33	0.87	Spondylosis and allied disorders
486	32	0.85	Pneumonia, organism unspecified
715	32	0.85	Osteoarthrosis and allied disorders
802	32	0.85	Fracture of face bones
733	31	0.82	Other disorders of bone and cartilage
592	29	0.77	Calculus of kidney and ureter
38	28	0.74	Septicemia
578	25	0.66	Gastrointestinal hemorrhage
435	24	0.63	Transient cerebral ischemia
717	24	0.63	Internal derangement of knee
518	23	0.61	Other diseases of lung
560	23	0.61	Intestinal obstruction without mention of hernia
569	23	0.61	Other disorders of intestine
577	22	0.58	Diseases of pancreas
730	22	0.58	Osteomyelitis, periostitis, and other infections involving bone
738	21	0.55	Other acquired deformity
282	20	0.53	Hereditary hemolytic anemias
535	20	0.53	Gastritis and duodenitis

Comparing the utilization of in-house medical beds to the utilization of community hospitals (Table A1.7) reveals that psychiatric conditions are much more likely to be treated in-house. In fact, psychiatric diseases were given as the primary diagnosis for 44 percent of the inmates in medical beds within the prison. Of inmates who received care in community hospitals, only 3 percent were primarily treated for psychiatric problems. In contrast, coronary artery disease, peripheral vascular disease, and chronic renal failure were far more likely to be treated in community hospitals.

Table A1.7. Comparison of Diagnosis Categories by Delivery Setting

Category Number	Category Description	Unique inmates with at least one stay ICD9 matching category	
		Community Hospital	In-house Medical Beds
1	Cancer, Solid Tumors	152 (6)	59 (0.5)
2	Lymphomas	33 (1)	22 (0.2)
3	Chronic Pulmonary Disease	125 (5)	113 (0.9)
4	Coronary Artery Disease	389 (16)	52 (0.4)
5	Congestive Heart Failure	127 (5)	38 (0.3)
6	Peripheral Vascular Disease	57 (2)	13 (0.1)
7	Severe Chronic Liver Disease	109 (4)	59 (0.5)
8	Diabetes with End Organ Damage	123 (5)	188 (1.5)
9	Chronic Renal Failure	128 (5)	16 (0.1)
10	Nutritional Deficiencies	23 (1)	10 (0.1)
11	Dementia	25 (1)	31 (0.3)
12	Functional Impairment	47 (2)	64 (0.5)
13	Psychiatric diseases (incl. substance abuse)	81 (3)	5355 (43.8)
	Total "chronic" inpatient stays (Category 1 through 12)	1419 (57)	6020 (49.2)
	Total inpatient stays	2476 (100)	12231 (100)

Appendix 2a: Medical Bed Census Assessment Tool

CDCR Care Management Screening and Assessment
Medical Bed Sweep

1-6/

7-9/

1. Assessor name (last, first): _____

10-39/ 40-59/

Section 1: Demographics

CHART

2. Inmate name (last, first): _____

60-89/ 90-109/

3. CDCR#: | | | | | | | 110-115/

4. Date of birth (mm/dd/yyyy): ___/___/_____ 116-123/

5. Facility (check 1):

☐1	ASP	☐6	CMF	☐11	COR	☐16	CCWF	☐21	HDSP	☐26	PBSP	☐31	SCC
☐2	CCC	☐7	CMC	☐12	LAC	☐17	CVSP	☐22	ISP	☐27	PVSP	☐32	VSPW
☐3	CCI	☐8	CRC	☐13	SAC	☐18	CTF	☐23	KVSP	☐28	RJD	☐33	WSP
☐4	CIM	☐9	CAL	☐14	SOL	☐19	DVI	☐24	MCSP	☐29	SVSP		
☐5	CIW	☐10	CEN	☐15	SATF	☐20	FSP	☐25	NKSP	☐30	SQ		

124-125/

6. Bed type (check 1): 126-127/

☐01 OHU
☐02 CTC
☐03 GACH
☐04 SNF (CCWF only)
☐05 Outside Community Hospital
☐06 Hospice (CMF only)

7. Current admission date to this unit (mm/dd/yyyy): __ __ / __ __ / __ __ __ __ 128-135/

8. Gender (check 1): ☐1Male ☐2 Female 136/

Section 2: Disease Burden

CHART AND PROXY

9a. Primary diagnosis triggering this admission to medical bed: _____ 137-186/

9b. Check all active or chronic conditions, unless historical conditions are specified.

CARDIOVASCULAR

- ☐1 Hypertension
- ☐2 Ischemic heart disease (CAD, h/o MI, h/o CABG)
- ☐3 Congestive heart failure (CHF)
- ☐4 Arrhythmia
- ☐5 Atrial fibrillation
- ☐6 Long-term anticoagulants, e.g. coumadin
- ☐7 Cardiac pacemaker
- ☐8 Valvular heart disease
- ☐9 s/p heart valve replacement
- ☐10 Aortic aneurysm (thoracic or AAA)
- ☐11 Peripheral vascular disease
- ☐12 Venous insufficiency (peripheral edema)

RESPIRATORY

- ☐13 Allergic rhinitis
- ☐14 Asthma
- ☐15 Chronic obstructive pulmonary disease (COPD)
- ☐16 Supplemental oxygen (long term)
- ☐17 Obstructive sleep apnea
- ☐18 Tracheostomy (current)

GASTROINTESTINAL

- ☐19 Gastroesophageal reflux (GERD)
- ☐20 Peptic ulcer disease or gastritis
- ☐21 Cholelithiasis (gallstones)
- ☐22 Irritable bowel disease
- ☐23 Inflammatory bowel disease (Crohn's, ulcerative colitis)
- ☐24 Cirrhosis
- ☐25 End stage liver disease (ESLD), hepatic encephalopathy
- ☐26 Chronic constipation
- ☐27 Hernia, inguinal or abdominal

RENAL AND URINARY

- ☐28 Chronic renal insufficiency
- ☐29 End stage renal disease (ESRD) (on dialysis)
- ☐30 Renal stones
- ☐31 Benign prostatic hypertrophy (BPH)
- ☐32 Neurogenic bladder

NEUROLOGICAL/SENSORY

- ☐33 Epilepsy/seizure disorder
- ☐34 Developmental disability (mental retardation)
- ☐35 Dementia, e.g. Alzheimer's and vascular dementia
- ☐36 Traumatic brain injury with cognitive impairment
- ☐37 h/o stroke (CVA) with any residual impairment
- ☐38 Hemiplegia/hemiparesis
- ☐39 Quadriplegia
- ☐40 Paraplegia
- ☐41 Cerebral palsy
- ☐42 Multiple sclerosis
- ☐43 Parkinson's disease
- ☐44 Peripheral neuropathy
- ☐45 Hearing loss
- ☐46 Visual loss both eyes (mod-severe or blind)
- ☐47 Glaucoma
- ☐48 Cataracts

PSYCHIATRIC

- ☐49 Anxiety disorder
- ☐50 Major depression disorder (single episode or recurrent)
- ☐51 Bipolar disorder
- ☐52 Schizophrenia
- ☐53 Delusional or paranoid disorder
- ☐54 Personality disorder (borderline, antisocial, etc)

ENDOCRINE / METABOLIC

- ☐55 Diabetes mellitus
- ☐56 Hypothyroidism
- ☐57 Other thyroid disorder 187-189/
- ☐58 Hypercholesterolemia, hyperlipidemia 190-192/
- ☐59 Transgender 193-195/

BLOOD

- ☐60 Anemia (iron-deficiency and other) 196-198/
- ☐61 Sickle cell disease 199-201/

MUSCULOSKELETAL / RHEUMATOLOGIC

- ☐62 Arthritis (osteoarthritis, DJD) 202-204/
- ☐63 Rheumatoid arthritis 205-207/
- ☐64 Systemic lupus erythematosis (SLE) 208-210/
- ☐65 Osteoporosis 211-213/
- ☐66 Low back pain 214-216/
- ☐67 h/o hip repair or replacement 217-219/
- ☐68 h/o lower limb amputation 220-222/

CANCER

- ☐69 Cancer (active): _____ 232-256/
- ☐70 h/o cancer: _____ 257-281/
- ☐71 Lymphoma, Hodgkin's, or leukemia
- ☐72 Chemotherapy (active)
- ☐73 Radiation therapy (active)

INFECTIONS

- ☐74 Hepatitis B 223-225/
- ☐75 Hepatitis C 226-228/
- ☐76 HIV/AIDS 229-231/
- ☐77 Pneumonia (current)
- ☐78 Pulmonary tuberculosis (currently getting multidrug Rx)
- ☐79 h/o positive PPD
- ☐80 Coccidioidomycosis (currently getting treatment)
- ☐81 Endocarditis (current)
- ☐82 Urinary tract infection (UTI) (current)
- ☐83 Pelvic inflammatory disease (current)
- ☐84 Osteomyelitis (currently getting antibiotics)
- ☐85 Cellulitis (current)
- ☐86 Herpes zoster (current)
- ☐87 MRSA (colonization)
- ☐88 Other current infection: _____ 282-317/

OTHER CONDITIONS

- ☐89 Alcohol/substance abuse
- ☐90 Abnormal weight loss, failure to thrive, malnutrition
- ☐91 Morbid obesity
- ☐92 Volume depletion (dehydration) (current)
- ☐93 Orthostatic hypotension
- ☐94 GI bleed, current
- ☐95 Nausea and vomiting
- ☐96 Diarrhea
- ☐97 Pancreatitis
- ☐98 Altered mental status
- ☐99 Abnormal vaginal bleeding
- ☐100 Pregnancy
- ☐101 Possibly terminal condition (death probable within 1 year)
- ☐102 Jaw fracture
- ☐103 Other current fracture: _____ 318-362/

PROCEDURE RELATED CONDITIONS

- ☐104 Pre-procedure care for: _____ 363-407/
- ☐105 Post-hospital care for: _____ 408-452/

OTHER DIAGNOSES

- ☐106 Other diagnosis: _____ 453-502/
- ☐107 Other diagnosis: _____ 503-552/
- ☐108 Other diagnosis: _____ 553-602/
- ☐109 Other diagnosis: _____ 603-652/

Section 3: Medical-Nursing Needs/Treatments

CHART OR PROXY

10. Current medical and nursing needs and treatments required by the inmate (Check all that apply)

VITALS
- ☐1 Vital signs daily
- ☐2 Vital signs Q shift or more often
- ☐3 Daily weights

RESPIRATORY
- ☐4 Intermittent oxygen
- ☐5 Continuous oxygen
- ☐6 Nebulizer therapy (bronchodilators)
- ☐7 Continuous positive airway pressure (CPAP)
- ☐8 Tracheostomy care

GI
- ☐9 Altered diet (pureed, thickened liquids)
- ☐10 NG or PEG tube feeding
- ☐11 Parental (IV) feeding

DIABETES CARE
- ☐12 Fingersticks less than daily
- ☐13 Fingersticks daily
- ☐14 Fingersticks more than daily
- ☐15 Routine insulin
- ☐16 Sliding scale insulin

IV
- ☐17 Intermittent IV therapy
- ☐18 Continuous IV therapy
- ☐19 Central line / PICC line
- ☐20 Blood transfusions

ANTICOAGULATION
- ☐21 IV anticoagulation (heparin)
- ☐22 Oral anticoagulation (coumadin)
- ☐23 SQ anticoagulation (e.g. Lovenox)

WOUNDS
- ☐24 Pressure sore or leg ulcer requiring daily nursing care
- ☐25 Pressure sore or leg ulcer requiring less than daily nursing care
- ☐26 Surgical site, drain, and other wound requiring daily nursing care
- ☐27 Surgical site, drain, and other wound requiring less than daily nursing care

MEDICATION ADMINISTRATIONS
- ☐28 Assistance with medication administration (e.g., cueing to swallow)
- ☐29 IM injections: _____ 673-712/

BOWEL AND BLADDER
- ☐30 Urinary incontinence 653-654/
- ☐31 Diapers or briefs 655-656/
- ☐32 Condom catheter 657-658/
- ☐33 Foley catheter 659-660/
- ☐34 Urinary retention 661-662/
- ☐35 Suprapubic catheter 663-664/
- ☐36 Intermittent catheterization 665-666/
- ☐37 Gastrostomy (PEG) tube 667-668/
- ☐38 Colostomy or ileostomy care 669-670/
- ☐39 Routine or frequent disimpaction or enemas
- ☐40 Fecal incontinence 671-672/

MOBILITY
- ☐41 Straight cane
- ☐42 Quad cane
- ☐43 Walker
- ☐44 Wheelchair
- ☐45 Mechanical lift
- ☐46 Orthotic device (brace, splint, prosthesis)

VISION/HEARING
- ☐47 Blind both eyes (unable to correct vision to >20/200)
- ☐48 Hearing impaired but functional with hearing aid
- ☐49 Deaf (both ears)

OTHER
- ☐50 History of recent falls (past 90 days)
- ☐51 History of remote falls
- ☐52 Cast care
- ☐53 Isolation for: _____ 713-752/
- ☐54 Chronic pain
- ☐55 Monitoring I/O
- ☐56 PT and/or OT

PROXY

Section 4: Activities of Daily Living / Mobility

Ability to perform Activities of Daily Living (ADLs)

11. Is the inmate completely independent in grooming, dressing, bathing, toileting, transferring, ambulation and eating?

☐1 Yes *(Skip to Section 5)* ☐2 No

753/

ADL support provided over the last 7 days:

What level of support did the inmate require over the last week in the following activities?

		Independent	Supervision or Limited Assistance	Extensive Assistance or Total Dependence	Activity Did Not Occur	Don't Know	
12.	Walking	☐1	☐2	☐3	☐4	☐8	754/
13.	Dressing	☐1	☐2	☐3	☐4	☐8	755/
14.	Eating	☐1	☐2	☐3	☐4	☐8	756/
15.	Toilet use	☐1	☐2	☐3	☐4	☐8	757/
16.	Personal hygiene	☐1	☐2	☐3	☐4	☐8	758/
17.	Bathing/Showering	☐1	☐2	☐3	☐4	☐8	759/

Section 5: Prison Activities of Daily Living

Could the inmate complete the following activities?

	Activity	YES	NO (TEMPORARY)	NO (PERMANENTLY)	
18.	Get on the floor for alarms	☐1	☐2	☐3	760/
19.	Hear orders from staff	☐1	☐2	☐3	761/
20.	Stand for head count	☐1	☐2	☐3	762/
21.	Go to the dining hall	☐1	☐2	☐3	763/
22.	Get on the top bunk	☐1	☐2	☐3	764/
23.	Climb one flight of stairs	☐1	☐2	☐3	765/

Section 6: Cognitive Status

Cognitive Performance

24. Cognitive skills for daily decision-making (making decisions regarding tasks of daily life) **How well does inmate do daily decision-making** (e.g., knowing when and how to go to meals, activities, program; seeking information appropriately [not repetitively] regarding daily routines; asking for help when needed; being able to make safe decisions so as to avoid accidents and incidents.)

766/

- ☐0 Independent - daily decisions are consistent, reasonable, and organized.
- ☐1 Modified independence - has difficulty in decision-making when faced with new tasks or situations.
- ☐2 Moderately impaired - decisions are poor; needs reminders, cues, and supervision for daily routines.
- ☐3 Severely impaired - decision-making is severely impaired.

Memory / Recall Ability

Code for recall of what was learned or known

	Memory OK	Memory Problem	
25. Short-term memory OK-seems/appears to recall after 5 minutes	☐1	☐2	767/
26. Long-term memory OK-seems/appears to recall long past	☐1	☐2	768/

PROXY

27. Making self understood (expressing information content – however able)

☐0 Understood - expresses ideas clearly 769/
☐1 Usually understood - has difficulty finding words or finishing thoughts, requires some prompting
☐2 Sometimes understood - ability is limited to making concrete requests, e.g., food, drink, toilet.
☐3 Rarely or never understood

Section 7: Level-of-care assignment

28. Could inmate function at a lower level of care? ☐1 Yes ☐2 No ☐8 Unknown 770/

29. What services or resources would the inmate need to function at a lower level of care?

a. _____ 771-820/

b. _____ 821-870/

c. _____ 871-920/

d. _____ 921-970/

e. _____ 971-1020/

f. _____ 1021-1070/

PROXY

30. ASK THE PROXY to (1) choose the appropriate level-of-care for the inmate, (2) record the services required by the inmate at that level-of-care, and (3) indicate whether the inmate will need to be at that level-of-care for less than 3 months or 3 months or more. 1071/

PROXY ASSIGNMENT

☐1 **1. HIGH ACUITY Medical Bed**

Inmates require:

☐1 RN availability 24 hours/day for assessment, monitoring and/or complex management 1072/
☐2 IV hydration for more than 3 days 1073/
☐3 Complex or high-risk medication regimen or blood transfusion 1074/
☐4 Complex wound care regimen 1075/
☐5 Extensive assistance with ADLs (or totally dependent) 1076/
☐6 Other _____1078-1152/ 1077/

Inmate will need this level of care for

☐1 **< 3 months** 1153/
☐2 **> 3 months**

☐2 **2. LOW ACUITY Medical Bed**

Inmates are unable to be at lower level of care because they require:

☐1 RN availability 8-16 hours/day for assessment, monitoring and/or management 1154/
☐2 IV hydration for less than 3 days 1155/
☐3 Straightforward IV antibiotics, e.g. for osteomyelitis 1156/
☐4 Straightforward wound care regimen 1157/
☐5 Supervision or limited assistance with ADLs 1158/
☐6 Other _____1160-1234/ 1159/

Pre-procedure care and routine post-hospital care can usually be done in low-acuity medical bed.

Inmate will need this level of care for

☐1 **< 3 months** 1235/
☐2 **> 3 months**

☐3 **3. Specialized GP Housing / Sheltered Housing**

Inmates do not require continuous nursing care/medical bed, but

- would benefit from cohorted housing and services and/or
- cannot be in regular GP due to:

☐1 Vision, hearing, or mobility impairment preventing residence in regular GP 1236/
☐2 AIDS 1237/
☐3 Pregnancy 1238/
☐4 Frailty due to age or medical condition 1239/
☐5 Other_____1241-1315/ 1240/

If need for supervision or limited assistance is inmate's only reason for not being in regular GP, then that inmate can be in sheltered housing with ADLs provided by cell mate, buddy system, or inmate helper program.

Inmate will need this level of care for

☐1 **< 3 months** 1316/
☐2 **> 3 months**

☐4 **4. Regular GP**

Inmates requiring only oxygen, CPAP, or dialysis or who can do their own catheter/colostomy care can be in regular GP.

☐5 **5. Hospice**

Inmate has life expectancy of less than 6 months and has nursing needs requiring medical bed (high or low acuity).

31. (1) choose the appropriate level-of-care for the inmate, (2) record the services required by the inmate at that level-of-care, and (3) indicate whether the inmate will need to be at that level-of-care for less than 3 months or 3 months or more. 1317/

ASSESSOR

ASSESSOR ASSIGNMENT

☐1 **1. HIGH ACUITY Medical Bed**

Inmates require:

☐1 RN availability 24 hours/day for assessment, monitoring and/or complex management 1318/
☐2 IV hydration for more than 3 days 1319/
☐3 Complex or high-risk medication regimen or blood transfusion 1320/
☐4 Complex wound care regimen 1321/
☐5 Extensive assistance with ADLs (or totally dependent) 1322/
☐6 Other _____1324-1398/ 1323/

Inmate will need this level of care for

☐1 **< 3 months** 1399/
☐2 **> 3 months**

☐2 **2. LOW ACUITY Medical Bed**

Inmates are unable to be at lower level of care because they require:

☐1 RN availability 8-16 hours/day for assessment, monitoring and/or management 1400/
☐2 IV hydration for less than 3 days 1401/
☐3 Straightforward IV antibiotics, e.g. for osteomyelitis 1402/
☐4 Straightforward wound care regimen 1403/
☐5 Supervision or limited assistance with ADLs 1404/
☐6 Other _____1406-1480/ 1405/

Pre-procedure care and routine post-hospital care can usually be done in low-acuity medical bed.

Inmate will need this level of care for

☐1 **< 3 months** 1481/
☐2 **> 3 months**

☐3 **3. Specialized GP Housing / Sheltered Housing**

Inmates do not require continuous nursing care/medical bed, but

- would benefit from cohorted housing and services and/or
- cannot be in regular GP due to:

☐1 Vision, hearing, or mobility impairment preventing residence in regular GP 1482/
☐2 AIDS 1483/
☐3 Pregnancy 1484/
☐4 Frailty due to age or medical condition 1485/
☐5 Other_____1487-1561/ 1486/

If need for supervision or limited assistance is inmate's only reason for not being in regular GP, then that inmate can be in sheltered housing with ADLs provided by cell mate, buddy system, or inmate helper program.

Inmate will need this level of care for

☐1 **< 3 months** 1562/
☐2 **> 3 months**

☐4 **4. Regular GP**

Inmates requiring only oxygen, CPAP, or dialysis or who can do their own catheter/colostomy care can be in regular GP.

☐5 **5. Hospice**

Inmate has life expectancy of less than 6 months and has nursing needs requiring medical bed (high or low acuity).

Appendix 2b: General Population Assessment Tool

STRATA
withinfac_picorder

«ABTID»*

«ABTID»

1-6/
7-9/
10/

CDCR Care Management Screening and Assessment
General Population Assessment

SAMPLE

Section 1: Demographics

1 Inmate name (last, first):

_____ 11-40/ 41-60/

Assessor name (last, first):

_____ 61-90/ 91-110/

2. CDCR #:

111-116/

Assessment date (mm/dd/yyyy):

_____/_____/_____ 117-124/

3. Bed number: _____ 125-142/

4. Date of birth (mm/dd/yyyy): _____/_____/_____ 143-150/

5. Facility (check 1):

☐1 ASP ☐3 CCI ☐6 CMF ☐10 CEN ☐14 SOL 151-152/
☐15 SATF ☐16 CCWF ☐21 HDSP ☐29 SVSP

PROXY

6. Bed type (check 1): 153-154/
☐02 CTC
☐03 GACH
☐04 SNF (CCWF only)
☐06 Hospice (CMF only)
☐07 General Population (including Ad Seg, PSU, PHU, SHU)
☐08 HIV Unit (GP)
☐09 DPW Unit (GP)
☐10 Other specialized GP unit: _____ 155-204/
☐11 Enhanced Outpatient Treatment (EOP)

ASK PROXY:
I'm here to ask you about a few inmates. The inmates I'm asking you about have been selected at random and are not known to have any medical, mental health or behavior problem. I will be asking your opinion about how well this inmate can get around the prison and take care of themselves (things like if they can: walk, get dressed, shower, get on the floor for alarms, get on the top bunk); how well they can make decisions; if they have any memory problems; and if they can make themselves understood.

7. Do you think you know this inmate well enough to answer these questions? 205/
☐1 Yes ☐2 No *[DO NOT USE THIS PROXY]*

ASSESSOR

DISPOSITION	☐ Chart not available
Inmate not assessed because:	☐ Proxy cannot answer questions
☐ Inmate no longer at facility	☐ Reached sample quota
☐ Inmate at an outside community hospital	☐ Other reason _____

Section 2: Disease Burden

ABTID

8. Check all active or chronic conditions, unless historical conditions are specified.

CHART

CARDIOVASCULAR

- ☐1 Hypertension
- ☐2 Ischemic heart disease (CAD, h/o MI, h/o CABG)
- ☐3 Congestive heart failure (CHF)
- ☐4 Arrhythmia
- ☐5 Atrial fibrillation
- ☐6 Long-term anticoagulants, (e.g. coumadin)
- ☐7 Cardiac pacemaker
- ☐8 Valvular heart disease
- ☐9 s/p heart valve replacement
- ☐10 Aortic aneurysm (thoracic or AAA)
- ☐11 Peripheral vascular disease
- ☐12 Venous insufficiency (peripheral edema)

RESPIRATORY

- ☐13 Allergic rhinitis
- ☐14 Asthma
- ☐15 Chronic obstructive pulmonary disease (COPD)
- ☐16 Supplemental oxygen (long term)
- ☐17 Obstructive sleep apnea
- ☐18 Tracheostomy (current)

GASTROINTESTINAL

- ☐19 Gastroesophageal reflux (GERD)
- ☐20 Peptic ulcer disease or gastritis
- ☐21 Cholelithiasis (gallstones)
- ☐22 Irritable bowel disease
- ☐23 Inflammatory bowel disease (Crohn's, ulcerative colitis)
- ☐24 Cirrhosis
- ☐25 End stage liver disease (ESLD), hepatic encephalopathy
- ☐26 Chronic constipation
- ☐27 Hernia, inguinal or abdominal
- ☐110 Gastrostomy (PEG) tube

RENAL AND URINARY

- ☐28 Chronic renal insufficiency
- ☐29 End stage renal disease (ESRD) (on dialysis)
- ☐30 Renal stones
- ☐31 Benign prostatic hypertrophy (BPH)
- ☐32 Neurogenic bladder

NEUROLOGICAL/SENSORY

- ☐33 Epilepsy/seizure disorder
- ☐34 Developmental disability (mental retardation)
- ☐35 Dementia, (e.g. Alzheimer's and vascular dementia)
- ☐36 Traumatic brain injury with cognitive impairment
- ☐37 h/o stroke (CVA) with any residual impairment
- ☐38 Hemiplegia/hemiparesis
- ☐39 Quadriplegia
- ☐40 Paraplegia
- ☐41 Cerebral palsy
- ☐42 Multiple sclerosis
- ☐43 Parkinson's disease
- ☐44 Peripheral neuropathy
- ☐45 Hearing loss
- ☐46 Visual loss both eyes (mod-severe or blind)
- ☐47 Glaucoma
- ☐48 Cataracts

PSYCHIATRIC

- ☐49 Anxiety disorder
- ☐50 Major depression disorder (single episode or recurrent)
- ☐51 Bipolar disorder
- ☐52 Schizophrenia
- ☐53 Delusional or paranoid disorder
- ☐54 Personality disorder (borderline, antisocial, etc)

ENDOCRINE / METABOLIC

- ☐55 Diabetes mellitus
- ☐56 Hypothyroidism
- ☐57 Other thyroid disorder 206-208/
- ☐58 Hypercholesterolemia, hyperlipidemia 209-211/
- ☐59 Transgender 212-214/

BLOOD

- ☐60 Anemia (iron-deficiency and other) 215-217/
- ☐61 Sickle cell disease 218-220/

MUSCULOSKELETAL / RHEUMATOLOGIC

- ☐62 Arthritis (osteoarthritis, DJD) 221-223/
- ☐63 Rheumatoid arthritis 224-226/
- ☐64 Systemic lupus erythematosis (SLE) 227-229/
- ☐65 Osteoporosis 230-232/
- ☐66 Low back pain 233-235/
- ☐67 h/o hip repair or replacement 236-238/
- ☐68 h/o lower limb amputation 239-241/

CANCER

- ☐69 Cancer (active): _____ 251-275/
- ☐70 h/o cancer: _____ 276-300/
- ☐71 Lymphoma, Hodgkin's, or leukemia
- ☐72 Chemotherapy (active)
- ☐73 Radiation therapy (active)

INFECTIONS

- ☐74 Hepatitis B 242-244/
- ☐75 Hepatitis C 245-247/
- ☐76 HIV/AIDS 248-250/
- ☐77 Pneumonia (current)
- ☐78 Pulmonary tuberculosis (currently getting multidrug Rx)
- ☐79 h/o positive PPD
- ☐80 Coccidioidomycosis (currently getting treatment)
- ☐81 Endocarditis (current)
- ☐82 Urinary tract infection (UTI) (current)
- ☐83 Pelvic inflammatory disease (current)
- ☐84 Osteomyelitis (currently getting antibiotics)
- ☐85 Cellulitis (current)
- ☐86 Herpes zoster (current)
- ☐87 MRSA (colonization)
- ☐88 Other current infection: _____ 301-336/

OTHER CONDITIONS

- ☐89 Alcohol/substance abuse
- ☐90 Abnormal weight loss, failure to thrive, malnutrition
- ☐91 Morbid obesity
- ☐92 Volume depletion (dehydration) (current)
- ☐93 Orthostatic hypotension
- ☐94 GI bleed, current
- ☐95 Nausea and vomiting
- ☐96 Diarrhea
- ☐97 Pancreatitis
- ☐98 Altered mental status
- ☐99 Abnormal vaginal bleeding
- ☐100 Pregnancy
- ☐101 Possibly terminal condition (death probable within 1 year)
- ☐102 Jaw fracture
- ☐103 Other current fracture: _____ 337-381/

PROCEDURE RELATED CONDITIONS

- ☐104 Pre-procedure care for: _____ 382-426/
- ☐105 Post-hospital care for: _____ 427-471/

OTHER DIAGNOSES

- ☐106 Other diagnosis: _____ 472-521/
- ☐107 Other diagnosis: _____ 522-571/
- ☐108 Other diagnosis: _____ 572-621/
- ☐109 Other diagnosis: _____ 622-671/

ABTID

Section 3: Medical-Nursing Needs/Treatments

CHART AND PROXY

9. Current medical and nursing needs and treatments required by the inmate (Check all that apply).

VITALS
- ☐1 Vital signs daily
- ☐2 Vital signs Q shift or more often
- ☐3 Daily weights

RESPIRATORY
- ☐4 Intermittent oxygen
- ☐5 Continuous oxygen
- ☐6 Nebulizer therapy (bronchodilators)
- ☐7 Continuous positive airway pressure (CPAP)
- ☐8 Tracheostomy care

GI
- ☐9 Altered diet (pureed, thickened liquids)
- ☐10 NG or PEG tube feeding
- ☐11 Parental (IV) feeding

DIABETES CARE
- ☐12 Fingersticks less than daily
- ☐13 Fingersticks daily
- ☐14 Fingersticks more than daily
- ☐15 Routine insulin
- ☐16 Sliding scale insulin

IV
- ☐17 Intermittent IV therapy
- ☐18 Continuous IV therapy
- ☐19 Central line / PICC line
- ☐20 Blood transfusions

ANTICOAGULATION
- ☐21 IV anticoagulation (heparin)
- ☐22 Oral anticoagulation (coumadin)
- ☐23 SQ anticoagulation (e.g. Lovenox)

WOUNDS
- ☐24 Pressure sore or leg ulcer requiring daily nursing care
- ☐25 Pressure sore or leg ulcer requiring less than daily nursing care
- ☐26 Surgical site, drain, and other wound requiring daily nursing care
- ☐27 Surgical site, drain, and other wound requiring less than daily nursing care

MEDICATION ADMINISTRATIONS
- ☐28 Assistance with medication administration (e.g., cueing to swallow)
- ☐29 IM injections: _____ 692-731/

BOWEL AND BLADDER
- ☐30 Urinary incontinence 672-673/
- ☐31 Diapers or briefs 674-675/
- ☐32 Condom catheter 676-677/
- ☐33 Foley catheter 678-679/
- ☐34 Urinary retention 680-681/
- ☐35 Suprapubic catheter 682-683/
- ☐36 Intermittent catheterization 684-685/
- ☐38 Colostomy or ileostomy care 686-687/
- ☐39 Routine or frequent disimpaction or enemas 688-689/ 690-691/
- ☐40 Fecal incontinence

MOBILITY
- ☐41 Straight cane
- ☐42 Quad cane
- ☐43 Walker
- ☐44 Wheelchair
- ☐45 Mechanical lift
- ☐46 Orthotic device (brace, splint, prosthesis)

VISION/HEARING
- ☐47 Blind both eyes (unable to correct vision to >20/200)
- ☐48 Hearing impaired but functional with hearing aid
- ☐49 Deaf (both ears)

OTHER
- ☐50 History of recent falls (past 90 days)
- ☐51 History of remote falls
- ☐52 Cast care
- ☐53 Isolation for: _____ 732-771/
- ☐54 Chronic pain
- ☐55 Monitoring I/O
- ☐56 PT and/or OT

ABTID

PROXY

Section 4: Activities of Daily Living / Mobility

Ability to perform Activities of Daily Living (ADLs)

10. Is the inmate completely independent in grooming, dressing, bathing, toileting, transferring, ambulation and eating?

☐1 Yes *(Skip to Question 17)* ☐2 No

772/

ADL support provided over the last 7 days:

What level of support did the inmate require over the last week in the following activities?

		Independent	Supervision or Limited Assistance	Extensive Assistance or Total Dependence	Activity Did Not Occur	
11.	Walking	☐1	☐2	☐3	☐4	773/
12.	Dressing	☐1	☐2	☐3	☐4	774/
13.	Eating	☐1	☐2	☐3	☐4	775/
14.	Toilet use	☐1	☐2	☐3	☐4	776/
15.	Personal hygiene	☐1	☐2	☐3	☐4	777/
16.	Bathing/Showering	☐1	☐2	☐3	☐4	778/

Section 5: Prison Activities of Daily Living

17. Can the inmate get on the floor, hear orders, stand for count, go to the dining hall, get on the top bunk and climb one flight of stairs?

☐1 Yes *(Skip to Question 24)* ☐2 No

779/

Can the inmate perform the following activities?

	Activity	YES	NO (TEMPORARY)	NO (PERMANENTLY)	
18.	Get on the floor for alarms	☐1	☐2	☐3	780/
19.	Hear orders from staff	☐1	☐2	☐3	781/
20.	Stand for head count	☐1	☐2	☐3	782/
21.	Go to the dining hall	☐1	☐2	☐3	783/
22.	Get on the top bunk	☐1	☐2	☐3	784/
23.	Climb one flight of stairs	☐1	☐2	☐3	785/

Section 6: Cognitive Status

Cognitive Performance

Cognitive skills for daily decision-making (making decisions regarding tasks of daily life).

24. How well does inmate do daily decision-making (e.g., knowing when and how to go to meals, activities, program; seeking information appropriately [not repetitively] regarding daily routines; asking for help when needed; being able to make safe decisions so as to avoid accidents and incidents).

786/

☐0 Independent - daily decisions are consistent, reasonable, and organized.
☐1 Modified independence - has difficulty in decision-making when faced with new tasks or situations.
☐2 Moderately impaired - decisions are poor; needs reminders, cues, and supervision for daily routines.
☐3 Severely impaired - decision-making is severely impaired.

Memory / Recall Ability

Code for recall of what was learned or known

	Memory OK	Memory Problem	
25. Short-term memory OK-seems/appears to recall after 5 minutes	☐1	☐2	787/
26. Long-term memory OK-seems/appears to recall long past	☐1	☐2	788/

ABTID

PROXY

27. Making self understood (expressing information content – however able)

☐0 Understood - expresses ideas clearly 789/
☐1 Usually understood - has difficulty finding words or finishing thoughts, requires some prompting
☐2 Sometimes understood - ability is limited to making concrete requests (e.g., food, drink, toilet).
☐3 Rarely or never understood

Section 7: Level-Of-Care Assignment

		Yes	No	Unknown	
28.	Do you feel that the inmate is physically or medically unsafe in his/her current location due to a health condition?	☐1	☐2	☐8	790/

Appendix 3: Development of the Assessment Tools and Data Collection Protocol: Supporting Material and Tables

A3.1 Assessment Tool Domains

Section 1: Demographics

The Demographics domain of the assessment tool included inmate information (name, CDCR number, date of birth), custodial information (facility, bed type), and assessor information (name, date). These items reflect those fields that contain demographic data of interest, and in cases where the data are available in the Project Data Set (PDS), the items are in the format from which the data are submitted to that database.

A few items in this domain differ between the Medical Bed Census and the General Population Assessment Tools. The Medical Bed Census Assessment Tool included an item for "current admission date to the medical bed" and for gender, in recognition that assessors would complete the assessment entirely from information in the medical records and from nurses on the unit. The General Population Assessment Tool included additional items relevant to the sampling and data collection processes (sample strata, bed number, proxy's knowledge of the inmate, assessor disposition of why inmate not assessed). This tool also was pre-printed with values for select items (name, CDCR number, date of birth, facility, bed number, sample strata) taken directly from the PDS. These items were confirmed during on-site data collection by the assessor via medical record review.

Section 2: Disease Burden

The Disease Burden domain included 105 chronic conditions, grouped by type of condition (e.g., cardiovascular, respiratory, gastrointestinal). Assessors also had the option to write-in four other diagnoses not already captured in the list of conditions. This list was developed based on the previous Lumetra study and discussion among the project team and CDCR staff about conditions most likely to trigger long-term care needs. The assessor reviewed the medical record and recorded any active or chronic conditions affecting the inmate on a check-off list. In addition to the check-off list, the Medical Bed Census Assessment Tool also included a place for the assessor to enter the diagnosis or event that triggered admission to the medical bed. This was reviewed with the nurse proxy to confirm all entries and identify any missing conditions. Custody proxies were not asked to review this section in the general population assessments.

Section 3: Medical-Nursing Needs/Treatments

This domain included a list of 56 medical and nursing needs and treatments grouped into 12 areas (e.g., vital signs, respiratory, gastrointestinal). The final list of items was derived from discussions with CPR and CDCR staff, documents prepared by CPR staff (e.g., "Resources Used by Level of Care") and experiences and data from the previous Lumetra study. Items in this domain represent "resources" (i.e. nursing time, medical supplies) required by inmates and therefore are important contributors to estimating long-term care housing needs. This list was further revised to include relevant items from Chrono forms and Disability Placement Program Verification forms (i.e., cane,

wheelchair, hearing/vision impairment) that are generally documented in the medical record. The assessor reviewed the medical records and records which medical and nursing needs/treatments the inmate currently uses. For the Medical Bed Census, nurse proxies were also asked to identify treatments used by the inmate.

Section 4: Activities of Daily Living (ADLs) / Mobility

Assessments of long-term needs and functional abilities often include "late loss" activities of daily living (ADLs). In the Activity of Daily Living/Mobility domain, the proxy assessed the inmate's ability to perform six ADLs (i.e., walking, dressing, eating, toilet use, personal hygiene, bathing/showering) on a three-point scale that captures the level of support required in the previous week (independent, supervision or limited assistance, extensive assistance or total dependence).

The ADLs and scale for level of support required by the inmate were developed based on discussions among the project team and CDCR staff and review of ADL assessment items found in other tools and surveys. The final set of ADL items was adapted from the Nursing Home Minimum Data Set, has established reliability, and is relatively familiar to nurse assessors. Many other ADL assessments were examined and discussed throughout the iterative assessment tool development process.

- ASIS ADL items measure patient's current ability to perform activities and the tool is used by all certified home health agencies across the country; however the team determined this tool was too cumbersome to meet the needs of this project (e.g., too many assessment items considered extraneous to functioning in a prison).
- The Medicare Current Beneficiary Survey (MCBS) uses six ADLs (bathing, eating, dressing, toileting, getting in/out of chairs, and walking) measured as "difficulty performing" or "inability to perform" these activities.
- The National Long Term Care Survey (NLTCS) assesses ability to perform six ADLs (bathing, eating, dressing toileting, getting in/out of bed, getting around inside) based on the patient receiving help or supervision, using equipment to perform the activity, or not performing the activity at all.
- The National Nursing Home Survey (NNHS) assesses six ADLs (bathing, eating, dressing, toileting, transferring in/out of bed or chairs, and walking).
- The Health and Retirement Study examines difficulty and dependence for five ADLs (bathing, eating, dressing, toileting, and transferring).

Section 5: Prison Activities of Daily Living (PADLs)

Data collection in the "Prison Activities of Daily Living" domain captured six key functional abilities specific to life in a correctional facility that may drive placement of inmates: the ability to (1) get on the floor for alarms, (2) hear orders from staff, (3) stand for head count, (4) go to the dining hall, (5) get up on a top bunk, and (6) climb one flight of stairs. Dr. Brie Williams of the University of California at San Francisco developed these measures and has termed them "prison activities of daily living", or PADLs. The items included in the Medical Bed Census Assessment and the General Population Assessment Tools are a modified version of Dr. Williams' PADLs assessments and scale.

The proxy assesses the inmate's ability to perform each of the six PADLs on a three-point scale (can perform the activity, temporarily cannot do activity, permanently cannot do activity).

Section 6: Cognitive Status

Cognitive status may predict need for increases in an inmate's daily care and is important for modeling the long-term housing needs of inmates. In the Cognitive Status domain, the proxy assessed the inmate's cognitive skills through questions of the inmate's daily decision-making, memory and recall ability, and ability to make him/herself understood. Decision-making was evaluated on a four-point scale (independent, modified independence, moderately impaired, severely impaired). Memory/recall ability for short-term and long-term memory was evaluated on a two-point scale (no problem, problem). The inmate's ability to make him or herself understood was measured on a four-point scale (understood, usually understood, sometimes understood, rarely or never understood).

The need for proxy assessment of cognitive status (as opposed to face-to-face inmate assessment) introduced some complexity to development of the tool. As with other domains of the assessment, these items were developed based on discussions among the Abt/Lumetra project team and CDCR staff and a review of proxy measures of cognitive functioning in the literature. The final items were a modified version of the Nursing Home Minimum Data Set Cognitive Performance Scale (CPS) items. The CPS is used in all U.S. certified nursing homes and has been found to have adequate reliability. A literature review of Cognitive Screening by proxy revealed several possible assessments that could be administered, at least in part, via proxy, in addition to the Nursing Home MDS CPS.

- The General Practitioner Assessment of Cognition (GPCOG) is an instrument designed to assist general practitioners in detecting dementia through a blend of direct patient and assessment and informant interviews.
- The Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) is a screening test for dementia with subjects unable to undergo direct cognitive testing, designed to be used with family members and relies on the proxy having a long history with the patient.
- The Modified Blessed Dementia Rating Scale (MBDRS) is a tool designed for proxy administration appropriate in cases where detection of moderate to severe cognitive impairment is sufficient.

Section 7: Level-of-care Assignment

The Level-of-care Assignment domain on the Medical Bed Census Assessment Tool had the proxy assess whether the inmate could function at a lower level-of-care than their current placement and, if so, what nursing resources they would need to function there. Next, the proxy and the assessor each made a three-step determination of the appropriate level of care for each inmate: (1) housing level, (2) specific resources needed, and (3) whether the inmate needs this level of care for greater or less than three months.

In the Level-of-care Assignment domain on the General Population Assessment Tool, the proxy assessed whether the inmate is physically or medically unsafe in his/her current location due to a health condition. In the general population sample, neither the proxy nor the assessor made an assignment recommendation; rather, an assignment recommendation was made using a computer algorithm after the assessment data were collected and analyzed.

A3.2 Comparison of the Medical Bed Census and General Population Assessment Tools

The draft Medical Bed Census Assessment Tool was pilot tested and revised based on a debriefing with staff involved in the pilot. The Medical Bed Census Assessment Tool (see Appendix 1) was revised based on the experience of the medical bed census and consideration of the specific needs of the general population assessment procedures (e.g., use of assessors who were not CDCR nurses, health status of general population inmates compared to inmates in medical beds) (see Appendix 2 for a copy of the General Population Assessment Tool).

The major differences between the assessment tools and implementation of the tools for the medical bed census and the general population assessments were:

- Proxies in the general population assessments were almost always correctional officers from the house unit where the inmate was placed; nurses served as proxies for inmates in medical beds. Proxies in the medical bed census were nurses in the medical unit.
- General population assessments did not collect the "Primary diagnosis triggering the admission to medical bed" of the inmates, while the medical bed census did collect this information.
- General population assessments did not include a level-of-care assignment by the assessor or the proxy. The medical bed census assessment asks the proxy and assessor to choose an appropriate level-of-care for each inmate. General population correctional officer proxies were asked whether the inmate is physically or medically unsafe in his/her current housing location due to a health condition.

Specific domains and assessment items were included on interim revisions of the assessment, but not included in the final assessment tool because either the items added little value to the medical bed census or general population assessments or the data could be retrieved from the Project Data Set following data collection. One example of this is that the Medical-Nursing Needs/Treatments domain of the final assessment tools include items that examine how well the inmate can make him or herself understood, and indicating blindness and deafness, but no other communication items are included (e.g., whether the inmate can communicate in English, the inmate's primary language), as these items may be obtained from the PDS. In addition, a Psychiatric Status domain was considered, but the team determined that these data could be added to the PDS through the Mental Health Tracking System if they were deemed necessary later in the project.

A3.3 Pilot Testing the Assessment Tool

The Abt/Lumetra Team conducted a pilot test of the draft assessment tool at the California Medical Facility (CMF) and California State Prison, Solano on February 27-29, 2007 with assistance from CPR and CDCR staff. The pilot test was conducted to determine: 1) the average time required to complete each form, 2) whether the data elements on the form could be obtained from the medical record and/or the correctional officer proxies, and 3) how well the assessment items performed in the field.

Lumetra conducted a training for CDCR and Abt staff on the purpose of the pilot test and the protocol for administering the assessment tool.

Fifty-six inmates were assessed during the pilot test; 29 at the California Medical Facility and 27 at the California State Prison, Solano. CMF has more medical beds; thus, more inmates were assessed at that facility (see Table A3.1).

Table A3.1. Number of Inmates Assessed in the Pilot Test

	California Medical Facility	California State Prison-Solano
Medical Bed	13	6
General Population	16	21
Total	29	27

Several changes were made to the data collection protocol and the assessment tool based on the pilot test.

- The most significant change was the confirmation that inmates would not be directly assessed to gather data for any sections of the assessment tool. A subset of inmates was directly assessed during the pilot test and the responses did not differ greatly from the responses obtained from the proxy interviews and the medical record.
- Another important change was the decision not to include any Armstrong or Clark (CDCR disability codes) in the assessment tool, either as questions or prepopulated items to be used to assign inmates to a level-of-care.
- Several question in the Demographics section were reworded (e.g., bedtype), reordered, added (e.g., assessor name, assessment date) or deleted (e.g., gender).
- A few items in the Disease Burden section were deleted (e.g., “Pressure sore, decubitus ulcer, leg ulcer”) or moved to the Medical-Nursing Needs/Treatments section (e.g., Chronic pain syndrome); no items were added to the Disease Burden section.
- A few items in the Medical-Nursing Needs/Treatments section were added (e.g., a “wounds” subsection) or deleted (e.g., “Needs less than 24 hour nursing observation”).
- The response scale for the PADLs section was revised.
- Several changes were made to the Level-of-Care Assignment section, including: having both the nurse proxy and the assessor assign the inmate to a level of care; making the assignment a two-stage process covering the level-of-care needed and the duration of that need.

A3.4 Data Collection Protocol

Table A3.2. Current Placement of Inmates Assessed in Medical Bed Census

Facility	OHU	CTC	GACH	SNF	Hospital	Hospice	Total Assessed
Avenal State Prison (ASP)	23				17		40
California Correctional Center (CCC)	17				2		19
California Correctional Institution (CCI)	10				0		10
California Institution for Men (CIM)			39		3		43
California Institution for Women (CIW)		2			6		8
California Medical Facility (CMF)	74	42	6		6	13	141
California Men's Colony (CMC)			29		3		32
California Rehabilitation Center (CRC)	5				2		7
California Rehabilitation Center (Women) (CRCW)							
Calipatra (CAL)	14				2		16
Centinela (CEN)		11			5		16
Corcoran (COR)	20		37		4		61
Los Angeles County (LAC)		10			5		15
Sacramento (SAC)	13	4			6		23
Solano (SOL)	3	4			8		15
Folsom State Prison (FSP)							
Substance Abuse Treatment Facility (SATF)		24			13		37
Central California Women's Facility (CCWF)				29	4		33
Chuckawalla Valley State Prison (CVSP)	9				2		11
Correctional Training Facility (CTF)	8				5		13
Deuel Vocational Institution (DVI)	14				8		22
High Desert State Prison (HDSP)		21			0		21
Ironwood State Prison (ISP)	4		1		6		11
Kern Valley State Prison (KVSP)		8			5		13
Mule Creek State Prison (MCSP)		4			0		4
North Kern State Prison (NKSP)		6			7		13
Pelican Bay State Prison (PBSP)		6			2		8
Pleasant Valley State Prison (PVSP)		4			10		14
R J Donovan (RJD)		12			4		16
Salinas Valley State Prison (SVSP)		12			3		15
San Quentin (SQ)	9				7		16
Sierra Conservation Center (SCC)	5				1		6
Valley State Prison for Women (VSPW)	5				4		9
Wasco State Prison (WSP)	1	9			6		16
Community Corrections (statewide)							
Reception Centers (statewide)							
Missing facility data							
Total	234	179	112	29	156		724

A3.5 Performance of the General Population Assessment Tool and Recommendations

Abt Associates conducted debriefing calls with Lumetra nurse assessors to gather feedback on what worked well and how the logistics of the facility visits, the medical record review, and the proxy interviews could be improved. Lumetra assessment teams reported that prison staff were very supportive of the assessment effort and helpful in the data collection process. Lessons learned included:

- Assessors found that the most efficient protocol for completing the assessment tool was to first review medical records (during the first 1-2 days of the site visit) and then interview CO proxies (during the second part of the site visit). This was because inmates are located throughout the prison and walking to units was time consuming.
- Organizing the medical records and printed assessment tools in the order necessary to meet sample strata requirements was also time consuming; the time spent organizing medical records was much lower in facilities that pulled medical records in the sample order.
- Medical record review was quicker in facilities where medical records had comprehensive problem lists because these lists made it easier to determine the inmate's disease burden. Assessors noted that having descriptions of each bed type written directly on the assessment tool or as an appendix would have been helpful.
- During the CO proxy interviews, assessors found that COs often did not recognize inmates by name, but did recognize the bed number. Some CO interviews were done via telephone instead of in-person if the CO was not able to leave their posts to speak with the Lumetra nurses.
- An assessment instruction manual could improve consistency of data collection across assessors and provide additional detail to assessors that could not be placed directly on the assessment tool.
- For non-CDCR assessors, like the Lumetra nurses, obtaining information about facility-specific requirements for gaining entrance into the facility and which colors to avoid wearing would be helpful and timesaving for visitors.

A3.6 Data Collection Limitations

Debriefings with the Lumetra assessment teams identified possible limitations to the reliability of the assessment data. In general, assessment nurses reported that they were comfortable with the medical record review assessment items; however, select sections of the assessment tool were noted as problematic. Assessment tool sections and their noted limitations are described below.

Section 2: Disease Burden

- *Psychiatric*. Some assessors found that the psychiatric documentation in the medical records was enormous and time consuming to review, did not include a specific psychiatric workup, and included unfamiliar ICD-9 codes. As a result, some assessors reported that they made their own clinical judgments regarding whether the inmate had the psychiatric conditions of

interest (e.g., major depression disorder). Assessors also found it difficult to determine whether depression could be categorized as "major" (vs. minor).

- *Renal and Urinary*. One assessor noted that inmates may have a diagnosis of End-stage renal disease (ESRD), but not be on dialysis. However, the item on the assessment form implies that the inmate must have both the diagnosis and the dialysis treatment to check off ESRD.
- *Neurological/Sensory*. One assessor noted that she used her own judgment, sometimes referring to an eyeglass prescription, regarding whether inmates had "visual loss both eyes", as this was not a diagnosis commonly seen in the medical record.
- Assessors noted that problem lists in medical records were more comprehensive at some facilities than others. In facilities where problem lists were comprehensive, assessors did not have difficulty identifying current conditions. In other facilities, some assessors recorded diagnoses based on medical notes and prescription drugs without written documentation of the diagnosis, but other assessors did not record any diagnoses unless they found the explicit documentation in the medical record.

Section 3: Medical-Nursing Needs/Treatments

- *Respiratory*. Two assessors noted they included "inhalers" (i.e. asthma inhalers) when they coded "Nebulizer therapy", whereas a third assessor did not code this section in cases with an inhaler.

Section 4: Activities of Daily Living/Mobility and Section 5: Prison Activities of Daily Living

- *Accuracy of information supplied by proxy*. Some assessors reported proxy respondents seemed knowledgeable about ADL and PADL functioning among their inmates. However, one assessment team in a high security unit noted that proxies might be more likely to say that inmates can perform ADLs or PADLs because the inmates do whatever they are told to do. Assessors reported that the culture of the units could affect proxy responses in these assessment sections.

Section 6: Cognitive Status

- In some cases, correctional officer proxies were unsure of the cognitive functioning of inmates. Specifically, they noted difficulty in reporting on inmates' Memory/Recall ability and long-term memory. Some proxies stated that they do not know this information through their normal interaction with the inmates.

Based on these findings, Abt recommended revisions to the assessment tool and the training materials for the general population sample.

Appendix 4: Primary Data Collection Findings: Supporting Material and Tables

A4.1 Findings from the Medical Bed Census

A4.1.1 Chronic Diseases

Table A4.1. Chronic Disease Burden Among Inmate-Patients Assessed in Medical Bed Census

Rank	Description	Count
1	Other diagnosis (any “write-in” diagnoses)	480
2	Hypertension	283
3	Diabetes mellitus	134
4	Hepatitis C	113
5	Ischemic heart disease (CAD,h/o MI, h/o CABG)	96
6	Chronic obstructive pulmonary disease (COPD)	89
7	Major depression disorder (single episode or recurrent)	77
8	Cancer (active)	76
9	Epilepsy/seizure disorder	64
10	Low back pain	63
11	Anemia (iron-deficiency and other)	62
12	Congestive heart failure (CHF)	60
13	Post hospital care for…	58
14	Gastroesophageal reflux (GERD)	57
15	h/o stroke (CVA) with any residual impairment	57
16	Asthma	49
17	Hypercholeserolemia, hyperlipidemia	48
18	Arthritis (osteoarthritis, DJD)	45
19	Dementia, e.g. Alzheimer's and vascular dementia	42
20	Chronic constipation	41
21	Hemiplegia/hemiparesis	41
22	Paraplegia	41
23	HIV/AIDS	41
24	Alcohol/substance abuse	40
25	Chronic renal insufficiency	35
26	Schizophrenia	33
27	h/o cancer	32
28	Other current infection	32
29	End stage liver disease (ESLD), hepatic encephalopathy	31
30	End stage renal disease (ESRD) (on dialysis)	31
31	Altered mental status	31
32	Pre-Procedure care for…	31
33	h/o positive PPD	30
34	Benign prostatic hypertrophy (BPH)	29
35	Cirrhosis	26
36	Personality disorder (borderline, antisocial, etc)	26
37	Abnormal weight loss, failure to thrive, malnutrition	24
38	Nausea and vomiting	24

Rank	Description	Count
39	Peptic ulcer disease or gastritis	22
40	Chemotherapy (active)	22
41	Venous insufficiency (peripheral edema)	21
42	Hearing loss	21
43	Morbid obesity	21
44	Peripheral neuropathy	20
45	Coccidioidomycosis (currently getting treatment)	20
46	MRSA (colonization)	20
47	Supplemental oxygen (long term)	19
48	Arrhythmia	18
49	Hypothyroidism	18
50	Atrial fibrillation	17
51	Peripheral vascular disease	16
52	Cellulitis (current)	15
53	Visual loss both eyes (mod-sever or blind)	14
54	Hepatitis B	14
55	Pneumonia (current)	14
56	Diarrhea	14
57	Parkinson's disease	13
58	bipolar disorder	13
59	h/o hip repair or replacement	13
60	GI bleed, current	13
61	Cardiac Pacemaker	12
62	Hernia, inguinal or abdominal	12
63	Traumatic brain injury with cognitive impairment	12
64	Cataracts	12
65	h/o lower limb amputation	12
66	Urinary tract infection (UTI) (current)	12
67	Jaw fracture	12
68	Long-term anticoagulants, e.g. coumadin	11
69	Anxiety disorder	11
70	Lymphoma, Hodgkin's, or leukemia	11
71	Possible terminal condition (death probable within 1 year)	11
72	Obstructive sleep apnea	10
73	Multiple sclerosis	10
74	Glaucoma	10
75	Osteomyelitis (currently getting antibiotics)	10
76	Tracheostomy (current)	9
77	Aortic aneurysm (thoracic or AAA)	8
78	Allergic rhinitis	7
79	Quadriplegia	7
80	Other thyroid disorder	7
81	Other current fracture	7
82	Radiation therapy (active)	6
83	Pulmonary tuberculosis (currently getting multidrug RX)	6
84	Pancreatitis	6
85	Valvular heart disease	5
86	s/p heart valve replacement	5
87	Cholelithiasis (gallstones)	5
88	Renal stones	5

Rank	Description	Count
89	Neurogenic bladder	5
90	Delusional or paranoid disorder	5
91	Rheumatoid arthritis	5
92	Osteoporosis	5
93	Herpes zoster (current)	5
94	Volume depletion (dehydration) (current)	5
95	Inflammatory bowel disease (Crohn's ulcerative colitis)	4
96	Cerebral palsy	4
97	Sickle cell disease	4
98	Developmental disability (Mental retardation)	3
99	Orthostatic hypotension	3
100	Pregnancy	3
101	Irritable bowel disease	2
102	Systemic lupus erythematosis (SLE)	2
103	Pelvic inflammatory disease (current)	1
104	Transgender	0
105	Endocarditis (current)	0
106	Abnormal vaginal bleeding	0

A4.1.2 Nursing Needs

Table A4.2. Nursing Needs

Rank	Nursing Needs	Count
1	Vital signs Q shift or more often	373
2	Vital signs daily	265
3	Wheelchair	213
4	Chronic pain	125
5	Fingersticks more than daily	103
6	Assistance with medication administration (e.g., cueing to swallow)	91
7	Continuous IV therapy	85
8	Surgical site, drain, and other wound requiring daily nursing care	85
9	Monitoring I/O	78
10	Altered diet (pureed, thickened liquids)	77
11	Walker	73
12	Sliding scale insulin	72
13	Continuous oxygen	67
14	PT and/or OT	64
15	Foley catheter	62
16	Intermittent IV therapy	53
17	Routine insulin	52
18	Central line / PICC line	52
19	Pressure sore or leg ulcer requiring daily nursing care	52
20	Urinary incontinence	51
21	Fecal incontinence	45
22	Daily weights	43
23	Diapers or briefs	41
24	History of recent falls (past 90 days)	41
25	Nebulizer therapy (bronchodilators)	39
26	Oral anticoagulation (coumadin)	35
27	Intermittent oxygen	34
28	SQ anticoagulation (e.g. Lovenox)	29
29	Mechanical lift	29
30	Straight cane	27
31	History of remote falls	27
32	NG or PEG tube feeding	25
33	Orthotic device (brace, splint, prosthesis)	21
34	Isolation for…	21
35	IM injections	19
36	Blind both eyes (unable to correct vision to >20/200)	18
37	Condom catheter	17
38	Colostomy or ileostomy care	17
39	Hearing impaired but functional with hearing aid	17
40	Fingersticks daily	16
41	Surgical site, drain, and other wound requiring less than daily nursing care	13
42	Fingersticks less than daily	12
43	Gastrostomy (PEG) tube	12
44	Tracheostomy care	9
45	Suprapubuic catheter	9
46	Routine or frequent disimpaction or enemas	9

Rank	Nursing Needs	Count
47	Pressure sore or leg ulcer requiring less than daily nursing care	7
48	Intermittent catheseterization	6
49	Quad cane	6
50	Continuous positive airway pressure (CPAP)	5
51	IV anticoagulation (heparin)	4
52	Urinary retention	4
53	Cast care	4
54	Parental (IV) feeding	3
55	Blood transfusions	3
56	Deaf (both ears)	0

Sample Size= 724. Up to 10 nursing needs were allowed per respondent.

A4.1.3 Functional Status

Activities of Daily Living

The current categorization of medical beds is based on an infirmary care model designed for addressing inmate's acute care needs. Figure A4.1 shows the level of ADL impairment among inmates in different types of medical beds. The observed pattern suggests that patients with functional limitations can be found in any type of medical bed. With the exception of the 29 hospice beds there is not a strong concentration of inmates with functional limitation in any one type of medical bed. In a prison health system with both infirmary beds and long-term care beds, one would expect to see patients with functional limitations (especially permanent limitations) concentrated in long-term care beds.

Figure A4.1 Percentage Of Bed Occupants With At Least One ADL Impairment

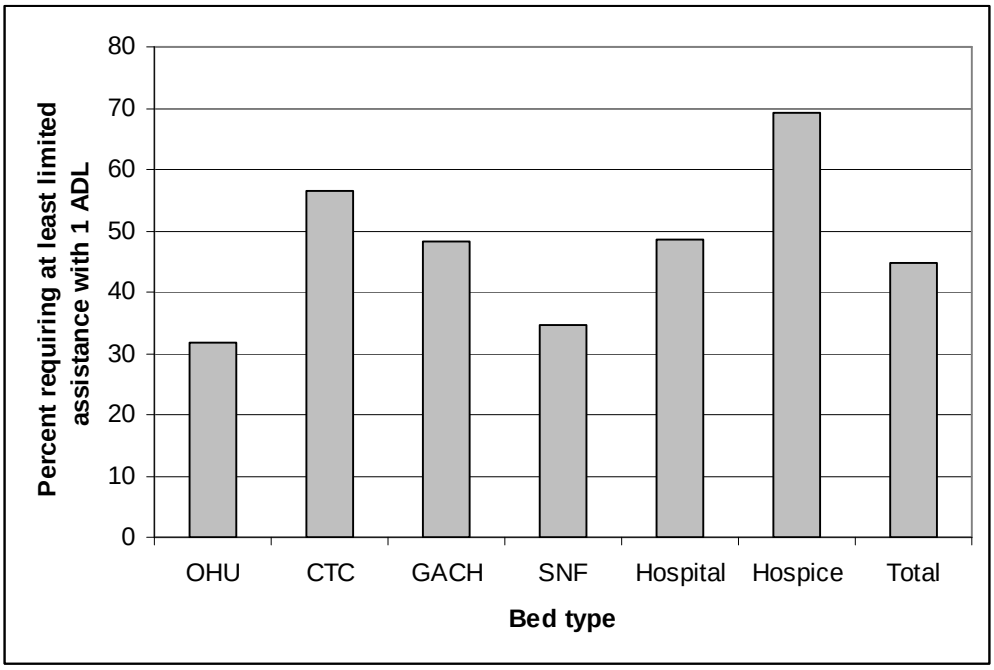


Table A4.3. Correlation Between ADL Scale Items

	Walk	Dress	Eat	Toilet	Personal Hygiene	Bathe
Walk	1.00					
Dress	0.44	1.00				
Eat	0.41	0.68	1.00			
Toilet	0.46	0.79	0.68	1.00		
Personal Hygiene	0.43	0.80	0.73	0.79	1.00	
Bathe	0.48	0.79	0.62	0.74	0.83	1.00

Prison Activities of Daily Living

Most inmates with temporary limitation in a PADL do not also have permanent limitation in another PADL (Table A4.4). Having a temporary PADL and no permanent PADL is negatively correlated with long-term care need among inmates in medical beds (correlation coefficient = -0.128, p<0.0006).

Table A4.4. Correlation of Temporary and Permanent PADLs

Correlation of Permanent and Temporary PADLs*		Temporary		
		None	>0	Total
Permanent	None	190	172	362
	>0	293	69	362
	Total	483	241	724

*correlation coefficient = -.302, p<0.00000

Table A4.5. Pairwise Correlation (Phi-coefficient) Between Permanent PADLs

	Floor for Alarms	Hear Orders	Stand for Count	Dining Hall	Top Bunk	Climb Stairs
Floor for Alarms	1.00					
Hear Orders	0.32	1.00				
Stand for Count	0.76	0.37	1.00			
Dining Hall	0.63	0.40	0.63	1.00		
Top Bunk	0.65	0.23	0.56	0.55	1.00	
Climb Stairs	0.70	0.25	0.61	0.57	0.88	1.00

A4.1.5 Level of Care Assignment

Utility of PDS in Predicting Long Term Care Need

To determine whether any variables in the PDS could predict long-term care need outside of regular GP among inmates housed in medical bed, the data were analyzed with logistic regression (Table A4.6). Age, DDP, DPP, cumulative length of stay in inpatient community hospital, and several categories of chronic disease diagnosis were significant predictors in the model (significance level <.05). The significant disease categories were solid tumor cancer, chronic pulmonary disease, severe chronic liver disease, chronic renal failure, dementia, and functional impairment. The model performed moderately well at predicting inmates LTC need (R-squared = 0.33). As a result, PDS data

was used to draw a stratified random sample of the general population for the primary data collection among general population based on inmates' predicted probability of needing long-term care outside of general population.

Table A4.6. PDS Variables that Predict LTC Outside of Regular General Population

Variable	Coef	Std Error	Z	p>|z|	Lower CI Bound	Higher CI Bound
Age	0.080	0.005	16.44	0	0.070	0.090
Age_miss	4.096	0.836	4.9	0	2.457	5.737
Black	0.204	0.132	1.54	0.123	-0.055	0.463
Hispanic	0.140	0.212	0.66	0.507	-0.276	0.558
Male	-0.124	0.227	-0.55	0.586	-0.571	0.322
ddp_yes	1.026	0.462	2.22	0.027	0.119	1.933
ddp_miss	2.089	0.189	11.03	0	1.718	2.460
dpp_dpx	2.376	0.152	15.59	0	2.077	2.675
dpp_dnx	0.001	0.201	0	0.998	-0.394	0.395
Cancer, Tumors	1.807	0.362	4.99	0	1.097	2.517
Lymphomas	-0.297	0.961	-0.31	0.757	-2.180	1.585
Chronic Pulmonary	1.074	0.333	3.22	0.001	0.421	1.728
Coronary Artery Dis.	-0.274	0.349	-0.79	0.432	-0.960	0.410
Congest Heart Failure	0.455	0.428	1.06	0.288	-0.384	1.296
Peripheral Vasc Dis	0.429	0.586	0.73	0.465	-0.721	1.579
Severe Chr Liver Dis	2.649	0.351	7.54	0	1.961	3.338
Diabetes w/OD	0.466	0.389	1.2	0.231	-0.297	1.230
Chronic Renal Failure	1.870	0.341	5.47	0	1.200	2.540
Nutritional Def	1.290	0.785	1.64	0.1	-0.249	2.829
Dementia	2.138	0.481	4.44	0	1.195	3.083
Funct Impairment	1.587	0.344	4.61	0	0.912	2.262
Psych	0.165	0.246	0.67	0.503	-0.318	0.648
Cumm. LOS	0.007	0.001	12.82	0	0.006	0.009
_cons	-10.395	0.334	-31.12	0	-11.050	-9.741

Logistic regression Number of obs = 164468
LR chi2(23) = 1641.86
Prob > chi2 = 0.0000
Log likelihood = -1651.2981 Pseudo R2 = 0.3321

A4.2 General Population Assessments

A4.2.1 Demographic and Custody Factors of the General Population Sample

The total population of the nine sampled prisons does not appear to be substantively different from the total prison population (Table A4.7).

Table A4.7 Demographic and Custody Characteristics for Population of Sampled Prisons and for the Population of All CDCR Facilities

Category	Value	Full Population of the 9 Sampled Prisons**	Full Population of All Prisons**
		Number (Percent)	Number (Percent)
Population		45,517 (100)	135861 (100)
Gender			
	Female	3259 (7)	8954 (7)
	Male	42258 (93)	126907 (93)
Race/Ethnicity			
	Black	13547 (30)	40642 (30)
	Hispanic	7736 (17)	20133 (15)
	Mexican	9857 (22)	31089 (23)
	Other	2709 (6)	7776 (6)
	White	11668 (26)	36221 (27)
Age			
	17 to 34	19645 (43)	61089 (45)
	35 to 44	13441 (30)	40494 (30)
	45 to 54	8958 (20)	25677 (19)
	55 to 64	2699 (6)	6895 (5)
	65 to 74	601 (1)	1401 (1)
	75+	173 (0)	305 (0)
Mental Health Code			
	Blank	35617 (78)	109888 (81)
	CCCMS	8957 (20)	22345 (16)
	EOP	943 (2)	3628 (3)
Life Sentence			
	Yes	8694 (19)	25069 (18)
	blank	36823 (81)	110792 (82)
Sex Offender Registrant			
	Blank	37150 (82)	116531 (86)
	Yes	8367 (18)	19330 (14)
Strike Count			
	2	10628 (23)	32277 (24)
	3	2625 (6)	8752 (6)
	Missing	32264 (71)	94832 (70)
Years until Projected Release			
	00 to 04	28158 (62)	84350 (62)
	05 to 09	4987 (11)	13611 (10)
	10 to 19	4116 (9)	12740 (9)
	20 to 29	1447 (3)	4536 (3)
	30 or more	6809 (15)	20624 (15)

Because the total inmate population for the state prison system was extracted from DDPS on December 31, 2006 and the data collection activities did not commence until March 14 (Medical Bed Census) and May 16 (General Population Sample), there was a need to update the current location data for inmates before the general population data collection. For example, among the 7596 inmates at ASP in April, 6,656 (87.6 percent) had been there in December, but 570 (7.5 percent) had been in reception centers in December, and the rest were in other prisons. Likewise, of the 7332 inmates that were in ASP in December, 568 left the prison system, and 108 transferred to another facility (leaving the aforementioned 6656). When the inmate locations were refreshed in April, it was observed that 12.4 percent of the total December 2006 cohort was no longer in prison. There may also be new inmates that entered the CA state prison system since December 2006, but we do not update our cohort with these individuals.

Despite, the flow of patients out of our cohort over the study period, the demographic and custody characteristics of the portion of the cohort that was not in reception centers did not change substantially (Table A4.8). As would be expected, there is a slightly higher fraction of inmates with life sentences, since they do not exit the prison system, but this is not likely to have a meaningful impact our results.

Table A4.8: Comparison of Demographic and Custody Characteristics of the Prison Population in December 2006 and the Remaining Fraction of That Population Incarcerated in April 2007

Category	Value	Population of 9 Sampled Prisons (December, 2006)* Number (Pct)	Population of 9 Sampled Prisons (April, 2007)** Number (Pct)	Population of All Prisons (December, 2006) Number (Pct)	Population of All Prisons (April, 2007) Number (Pct)
Population		45,937 (100)	45,517 (100)	171,949 (100)	150,578 (100)
Gender					
				16 (0)	
	Female	3,100 (7)	3,259 (7)	11,768 (7)	9,559 (6)
	Male	42,837 (93)	42,258 (93)	160,165 (93)	141,019 (94)
Race/Ethnicity					
	Black	13,601 (30)	13,547 (30)	49,550 (29)	44,264 (29)
	Hispanic	8,086 (18)	7,736 (17)	27,296 (16)	23,317 (15)
	Mexican	9,771 (21)	9,857 (22)	38,545 (22)	34,022 (23)
	Other	2,653 (6)	2,709 (6)	9,370 (5)	8,406 (6)
	White	11,826 (26)	11,668 (26)	47,172 (27)	40,569 (27)
Age					
	17 to 34	20,021 (44)	19,645 (43)	80,554 (47)	69,149 (46)
	35 to 44	13,502 (29)	13,441 (30)	50,799 (30)	44,526 (30)
	45 to 54	8,976 (20)	8,958 (20)	30,866 (18)	27,797 (18)
	55 to 64	2,679 (6)	2,699 (6)	7,841 (5)	7,314 (5)
	65 to 74	590 (1)	601 (1)	1,542 (1)	1,475 (1)
	75+	169 (0)	173 (0)	347 (0)	317 (0)
Mental Health Code					
	Blank	36,143 (79)	35,617 (78)	140,144 (82)	121,207 (80)
	CCCMS	8,842 (19)	8,957 (20)	27,614 (16)	25,461 (17)
	EOP	952 (2)	943 (2)	4,191 (2)	3,910 (3)
Life Sentence					
	Yes	8,511 (19)	8,694 (19)	25,406 (15)	25,327 (17)
	Blank	37,426 (81)	36,823 (81)	146,543 (85)	125,251 (83)
Sex Offender Registrant					
	Blank	37,594 (82)	37,150 (82)	150,007 (87)	129,796 (86)
	Yes	8,343 (18)	8,367 (18)	21,942 (13)	20,782 (14)
Strike Count					
	2	10,656 (23)	10,628 (23)	36,267 (21)	33,974 (23)
	3	2,642 (6)	2,625 (6)	8,863 (5)	8,837 (6)
	Blank	32,639 (71)	32,264 (71)	126,819 (74)	107,767 (72)
Years until Projected Release					
	00 to 04	29,008 (63)	28,158 (62)	113,832 (66)	94,678 (63)
	05 to 09	4,803 (10)	4,987 (11)	14,146 (8)	14,027 (9)
	10 to 19	4,052 (9)	4,116 (9)	13,126 (8)	13,074 (9)
	20 to 29	1,454 (3)	1,447 (3)	4,672 (3)	4,652 (3)
	30 or more	6,620 (14)	6,809 (15)	26,173 (15)	24,147 (16)

*Population data extracted from DDPS represents population on December 31, 2006
**Population data extracted from DDPS represents population on April 17, 2000

Appendix 5: Methods for Stratifying the Population According to Long-term Care Risk

In order to gain efficiency estimating LTC need in the general population, we leveraged the results of the medical bed census and the data in the Project Data Set (PDS). The results of the medical bed census included the assessing clinician's recommendation for the placement of each inmate into medical beds and the clinician's estimation of the duration of care each inmate needed. For every inmate in the prison system, we had several data items that could serve as predictors of long-term care. Combining the two data sources, we were able to estimate a LTC risk score for each inmate.

We used a logistic regression model in order to stratify the inmates with respect to their propensity to require long term care. In this model we used three characteristics:

- Age
- Having a physical disability (PD)
- Total length of stay (LOS) in community hospital and in house medical beds (in days)

- We created six categories based on the total length of stay variable. These categories are:
  - Category 1: $LOS = 0$
  - Category 2: $LOS \in (0,30)$
  - Category 3: $LOS \in [30,90)$
  - Category 4: $LOS \in [90,180)$
  - Category 5: $LOS \in [180,365)$
  - Category 6: $LOS \in [365,548)$

- Interacting the six length of stay categories with the two physical disability categories (having a PD or not), we created 12 groups. In addition to age, we employed these 12 group dummies in the logistic regression. More formally, our model was:

$$P(C_i = 1) = \frac{1}{1 + e^{-X_i}}$$

where X_i is defined as:

$$X_i = \sum_{c=1}^{12} \beta_c D_i^c + \beta_{13} Age_i$$

Here, i denotes inmates. C_i is a dummy variable which equals 1 if inmate i was in the medical bed survey and assessed to require long term care. D_i^c is a dummy indicator for the cth of the 12 groups created by interacting length of stay and physical disability categories for inmate i.[1] Age_i is the age of inmate i.

[1] In the actual estimation, we drop one of these dummy variables as the "reference category" in order to have a constant in our specification.

- We estimated this specification using the inmates from all 33 prisons in California. The results are shown in Table A5.1.

Table A5.1 Results for Risk Score Model

Variable	Coefficient	Std. Err.	z	P>z	Low 95 percent CI	High 95 percent CI	Odd Ratio
Category 1*No PD	-5.54905	0.402467	-13.79	0	-6.33787	-4.76023	0.003891
Category 1*PD	-3.04157	0.425455	-7.15	0	-3.87545	-2.20769	0.04776
Category 2*No PD	-4.26662	0.42417	-10.06	0	-5.09798	-3.43527	0.014029
Category 2*PD	-2.75166	0.463928	-5.93	0	-3.66094	-1.84237	0.063822
Category 3*No PD	-2.52374	0.440415	-5.73	0	-3.38694	-1.66054	0.080159
Category 3*PD	-1.21233	0.472509	-2.57	0.01	-2.13843	-0.28623	0.297503
Category 4*No PD	-1.96005	0.48004	-4.08	0	-2.90091	-1.01918	0.140852
Category 4*PD	-0.47827	0.522995	-0.91	0.36	-1.50332	0.546781	0.619855
Category 5*No PD	-1.63217	0.514282	-3.17	0.002	-2.64014	-0.62419	0.195506
Category 6*No PD	-0.84656	0.549973	-1.54	0.124	-1.92449	0.231366	0.428888
Category 6*PD	0.445749	0.483894	0.92	0.357	-0.50267	1.394163	1.561659
Age	0.078134	0.00462	16.91	0	0.069079	0.087189	1.081267
Constant	-4.92703	0.460391	-10.7	0	-5.82938	-4.02468	

- Then utilizing these estimated coefficients, we calculated every inmate's probability of residing in a medical bed and requiring long term care (the risk score). Using 0.005 as the threshold, we divided the inmate population into two categories: High risk (high probability of needing long term care) and low risk (low probability of needing long term care). These categories are the strata that we use in the sample selection process.

A5.1 Sample Selection

Our sampling design deals with the problem of being unable to form an efficient sample for inmates who have a very low probability of needing long-term care. In addition to the risk stratification described above, we solicited nomination of inmates likely to need long-term medical care from correctional officers at the nine prisons included in our sample. These nominations, combined with the high and low risk categories described in the preceding section allowed us to partition the inmate population into four strata. For simplicity, we discuss the estimators for a single prison.[2]

A5.2 Notation

S — There are S strata s=1…S. The strata are formed based on estimated probabilities of needing long-term care (and being in medical beds). Without loss of generality, let stratum S be the stratum with the lowest probability that the inmate needs long-term care.

C_s — This is the number of inmates needing long-term care in stratum s. This is what we would like to estimate.

M_s — This is the number of inmates needing long-term care in stratum s who are also in medical units. We know this number.

N_s — This is the number of nominated inmates in stratum s. These inmates do not necessarily need long-term care.

[2] In the analysis, we take into account that our sample comes from nine prisons.

n_s This is the number of nominated inmates in stratum s who need long-term care.
R_s This is the number of inmates in stratum s who were not nominated.
r_s This is the number of inmates in stratum s who need long-term care but are not nominated.

Q_{1s} This is a measure of the sensitivity of the nominations. It is the probability that a nominated inmate needs long-term care.

$$E[n_s] = Q_{1s} N_s$$

Q_{2s} This is a measure of specificity. It is the probability that an inmate in stratum s needs long-term care conditional on his or her not being nominated.

$$E[r_s] = Q_{2s} R_s$$

P_{1s} This is the sampling probability for persons nominated in stratum s. We will determine for sampling purposes.
P_{2s} This is the sampling probability for persons who were not nominated in stratums s. We get to set this, too.

A5.3 The Estimates

The number of inmates needing long-term care is:

[1] $$C = \sum_{s=1}^{S} C_s = \sum_{s=1}^{S} M_s + n_s + r_s$$

We estimate this with suitable estimates of n_s and r_s.

[2] $$\hat{C} = \sum_{s=1}^{S} M_s + N_s \hat{Q}_{1s} + R_s \hat{Q}_{2s}$$

We estimate Q and R from the sample. The sampling variance is of greatest interest to us because we need to set the sampling rates. Of course, we set the sampling rates to minimize the sampling variance. The term M_s does not enter into the sampling variance because we know it with certainty. However, we have to estimate the Q's, and that is where the uncertainty enters.

The sampling variance is[3]:

[3] $$VAR(\hat{C}) = \sum_{s=1}^{S} \left[\frac{N_s}{P_{1s}} (1 - P_{1s}) Q_{1s} (1 - Q_{1s}) + \frac{R_s}{P_{2s}} (1 - P_{2s}) Q_{2s} (1 - Q_{2s}) \right]$$

Minimizing [3] with respect to the constraint that:

[3] The terms $(1 - P_{1s})$ and $(1 - P_{2s})$ reflect the finite sample adjustment that we employed.

[4] $$sample\ size = \sum_{s=1}^{S} N_s P_{1s} + R_s P_{1s}$$

will provide the solution.

A5.4 Dealing with Rare Events

In designing the sample selection process, the main problem is that R_S is very large but we expect r_S to be comparatively low. Our solution is to set $P_{2S}=0$ and use a different estimator for r_S. (In other words, we do not sample from the non-nominated part of stratum S.) Recall that capital S denotes the last stratum – the one that has most of the inmate population. The way to get an estimate for r_S is to make some identifying assumption. There are three possibilities.

1. The ratio r_s/M_s is constant across the strata. Using $\hat{r}_s$ and M_s from the strata for which we have estimates (s=1..S-1):

[5] $$\hat{r}_S = M_S \left[\frac{\sum_{s=1}^{S-1} r_s}{\sum_{s=1}^{S-1} M_s} \right]$$

2. The ratio $r_s/(M_s+n_s)$ is constant across the strata. Then the estimate is:

[6] $$\hat{r}_S = (n_S + M_s) \left[\frac{\sum_{s=1}^{S-1} r_s}{\sum_{s=1}^{S-1} n_s + M_s} \right]$$

3. The ratio r_s/n_s is constant across the strata and the estimator is similar to the above.

A5.4.1 Calculating Optimal Sampling Probabilities:

We chose to employ the second possibility as shown in [6] to estimate r_S. Using [6] complicates the variance estimates because r_s and n_s are themselves estimated. More specifically, under this option as M_s is known with certainty, the variance term in [3] and the constraint [4] become:

[3'] $$VAR(\hat{C}) = \sum_{s=1}^{S} \frac{N_s}{P_{1s}} (1 - P_{1s}) Q_{1s} (1 - Q_{1s}) + \sum_{s=1}^{S-1} \frac{R_s}{P_{2s}} (1 - P_{2s}) Q_{2s} (1 - Q_{2s}) + Var(\hat{r}_S)$$

[4'] $$sample\ size = \sum_{s=1}^{S} N_s P_{1s} + \sum_{s=1}^{S-1} R_s P_{2s}$$

We can find the optimal sampling probabilities $\hat{P}_{11}, \hat{P}_{12}, ...\hat{P}_{1S}$ and $\hat{P}_{21}, \hat{P}_{22}, ...\hat{P}_{2S-1}$ by minimizing [3'] subject to [4']. In order to solve this optimization problem, we first need to derive $Var(\hat{r}_S)$. Let's introduce new notation to simplify things:

[7] $A \equiv n_S$

[8] $B \equiv \sum_{s=1}^{S-1} r_s$

[9] $C \equiv \sum_{s=1}^{S-1} n_s$

These are the stochastic terms in [6]. Note that M_s $(s = 1,2,...S)$ are constants. Let's further define:

[10] $D \equiv M_S$

[11] $E \equiv \sum_{s=1}^{S-1} M_s$

Using [7]-[11], we can rewrite $\hat{r}_S$ as:

[12] $\hat{r}_S = (A + D)\dfrac{B}{C + E}$

Using the delta method, we can approximate $Var(\hat{r}_S)$ as

[13] $VAR(\hat{r}_S) \approx \left(\dfrac{\partial \hat{r}_S}{\partial A}\right)^2 VAR(A) + \left(\dfrac{\partial \hat{r}_S}{\partial B}\right)^2 VAR(B) + \left(\dfrac{\partial \hat{r}_S}{\partial C}\right)^2 VAR(C)$

Variances of the terms A, B, and C can be estimated as:

[14] $VAR(A) = \dfrac{N_S}{P_{1S}}(1 - P_{1S})Q_{1S}(1 - Q_{1S})$

[15] $VAR(B) = \sum_{s=1}^{S-1} \dfrac{R_s}{P_{2s}}(1 - P_{2s})Q_{2s}(1 - Q_{2s})$

[16] $VAR(C) = \sum_{s=1}^{S-1} \dfrac{N_s}{P_{1s}}(1 - P_{1s})Q_{1s}(1 - Q_{1s})$

Using these, we can rewrite [13] as

[13'] $$VAR(\hat{r}_S) \approx \left[\frac{B}{C+E}\right]^2 (1-P_{1S})\frac{N_S}{P_{1S}}Q_{1S}(1-Q_{1S}) + \left[\frac{A+D}{C+E}\right]^2 \sum_{s=1}^{S-1}(1-P_{2s})\frac{R_s}{P_{2s}}Q_{2s}(1-Q_{2s}) + \left[-\frac{(A+D)B}{(C+E)^2}\right]^2 \sum_{s=1}^{S-1}\frac{N_s}{P_{1s}}(1-P_{1s})Q_{1s}(1-Q_{1s})$$

Note that the optimization problem will take terms A, B, C, D, and E as given. Let's further define:

[17] $$\alpha_1 = \left[\frac{B}{C+E}\right]^2$$

[18] $$\alpha_2 = \left[\frac{A+D}{C+E}\right]^2$$

[19] $$\alpha_3 = \left[-\frac{(A+D)B}{(C+E)^2}\right]^2$$

Using [17], [18], and [19] we can further simplify [13'] as:

[13'') $$VAR(\hat{r}_S) \approx \alpha_1 \frac{N_S}{P_{1S}}(1-P_{1S})Q_{1S}(1-Q_{1S}) + \alpha_2 \sum_{s=1}^{S-1}\frac{R_s}{P_{2s}}(1-P_{2s})Q_{2s}(1-Q_{2s}) + \alpha_3 \sum_{s=1}^{S-1}\frac{N_s}{P_{1s}}(1-P_{1s})Q_{1s}(1-Q_{1s})$$

Using this, we can rewrite [3'] as:

[3'') $$VAR(\hat{C}) = \sum_{s=1}^{S}\frac{N_s}{P_{1s}}(1-P_{1s})Q_{1s}(1-Q_{1s}) + \sum_{s=1}^{S-1}\frac{R_s}{P_{2s}}(1-P_{2s})Q_{2s}(1-Q_{2s}) + \alpha_1 \frac{N_S}{P_{1S}}(1-P_{1S})Q_{1S}(1-Q_{1S}) + \alpha_2 \sum_{s=1}^{S-1}\frac{R_s}{P_{2s}}(1-P_{2s})Q_{2s}(1-Q_{2s}) + \alpha_3 \sum_{s=1}^{S-1}\frac{N_s}{P_{1s}}(1-P_{1s})Q_{1s}(1-Q_{1s})$$

Then the optimization problem is:

[20] $$\text{minimize}_{P_{11},P_{12},\ldots P_{1S} \text{ and } P_{21},P_{22},\ldots P_{2S-1}} VAR(\hat{C}) \text{ s.t. } sample\ size = \sum_{s=1}^{S} N_s P_{1s} + \sum_{s=1}^{S-1} R_s P_{2s}$$

First order conditions for particular P_{1s} (s = 1,2,...S -1), P_{2s} (s = 1,2,...S -1), and P_{1S} are

[21] $\{P_{1s}\}$: $Q_{1s}(1-Q_{1s})(1+\alpha_3) = \lambda P_{1s}^{\ 2}$, s = 1,2,...S -1

[22] $\{P_{2s}\}$: $Q_{2s}(1-Q_{2s})(1+\alpha_2) = \lambda P_{2s}^{\ 2}$, s = 1,2,...S -1

[23] $\{P_{1S}\}$: $Q_{1S}(1-Q_{1S})(1+\alpha_1) = \lambda N_S$

Overall, we have 2S unknowns (P_{1s} (s = 1,2,...S), P_{2s} (s = 1,2,...S - 1), and λ) and 2S equations (2S-1 first order conditions and the constraint). By assigning priors to the sensitivity and specificity measures (Q_{1s} (s = 1,2,...S), Q_{2s} (s = 1,2,...S - 1)), we can solve these equation systems to yield the optimal sampling probabilities.

Extending the results of the previous section to multiple prisons is straightforward. Presuming that the prisons have similar compositions, the sampling rates should be the same in each prison and the above solution with not change.

Table A5.2 Risk Score by Strata

Cell (Strata)	Summary of Risk Score		
	Mean	Std. Dev.	Freq.
1. High-Risk & Nominated (1_nh)	0.065065	0.115337	288
2. Low-Risk & Nominated (2_nl)	0.001479	0.001225	360
3. High-Risk & Not Nominated (3_nnh)	0.039464	0.08755	2,690
4. Low-Risk & Not Nominated (4_nnl)	0.000777	0.000791	42,185
Total	0.003476	0.025388	45,523

Table A5.3 Count of Inmates by Strata

Facility	Count of Inmates by Strata				Total
	1. High-Risk & Nominated	2. Low-Risk & Nominated	3. High-Risk & Not Nominated	4. Low-Risk & Not Nominated	
ASP	50	80	405	7,060	7,595
CCI	8	50	105	4,474	4,637
CCWF	25	56	132	3,046	3,259
CEN	2	4	65	4,827	4,898
CMF	26	11	731	2,244	3,012
HDSP	49	69	212	3,704	4,034
SATF	46	29	528	6,712	7,315
SOL	14	11	231	5,763	6,019
SVSP	68	50	281	4,355	4,754
Total	288	360	2,690	42,185	45,523

Appendix 6: Creating Sample Weights

We prepared an ordered list of inmates who were in the first three strata (1_nh. 2_nl, and 3_nnh) using the optimal probabilities, as described in [21], [22], and [23] to be used in the sampling. Overall, we have a total of 3338 inmates. Of these, 1495 were selected to be assessed. Surveys of 303 inmates, however, could not be completed, due to various reasons (Table A6.1).

Table A6.1 Survey Disposition

Survey Disposition	Freq.	Percent
Complete	1,192	79.73
Final Other	8	0.54
Inmate no longer at facility	26	1.74
Inmate an outside community hospital	7	0.47
Medical record not available	195	13.04
Proxy cannot answer questions	58	3.88
Reached Sample Quota	9	0.6
Total	1,495	100

We created weights for the 1192 inmates (more precisely 1166 inmates excluding those in medical beds) in our final analytic sample to account for 2 factors:

- As seen above, 303 inmates were attempted to be sampled, but could not. We searched for factors that could explain why these inmates were not surveyed but could not find enough evidence to suggest that these inmates were systematically left out. The main reason for not being sampled is "not having a medical record available" and we believe that this could occur at different rates across prisons. Once we account for prisons, it is plausible to assume these 303 inmates were missing from our final analytic sample at random.

- 1843 inmates could have been potentially selected for assessments but they were not surveyed as they were further down in the ordered lists and there were not enough resources to survey all 3338 "eligible" inmates. Since the only factor that we used in creating the ordered lists are the optimal sampling probabilities calculated for each stratum; once we control for these strata, we believe that these 1843 inmates could be assumed to be "missing at random".

As weights, we use the inverse of estimated probabilities of being assessed. Use of inverse probability weighting has been widely used as a solution for missing data problems, of which sampling provides an obvious illustration (Robins et al. (1995) and Rotnitzky and Robins (1995), Wooldridge (2002, 2003), Hirano et al. (2000).

We estimate the probabilities of being assessed using a logistic regression, which controls for prison and the stratum that an inmate was in. In particular, we interacted nine prison indicators with 3 strata indicators to yield 27 dummy variables and we employed them as covariates in the logistic regression. The logistic regression is specified as:

$$P(S_i = 1) = \frac{1}{1 + e^{-X_i}} \qquad \text{where } X_i \text{ is defined as} \quad X_i = \beta_0 + \sum_{c=1}^{26} \beta_c D_i^c$$

In this specification, i denotes one of the 3338 inmates who could be potentially sampled and S_i is the sampling indicator (=1 if inmate i is sampled, =0 otherwise) of inmate i. D_i^c is the dummy variable that represents the cth category formed as a result of the interaction of the prison and strata indicators. It is equal to one if inmate i falls into that category and zero otherwise. One of the 27 category dummies is not included as the reference category in the specification as we have a constant. The estimated coefficients from the this model are shown in Table A6.2. Using these estimated coefficients, we predicted each assessed inmate's probability of being selected (also called propensity scores) and used inverses of these as weights.[4]

Table A6.2 Results for Sample Weights Regression

Variable	Coefficient	Std. Err.	z	P>z	Low 95 percent CI	High 95 percent CI	Odd Ratio
sfint_1_ASP	-1.25896	0.864397	-1.46	0.145	-2.953142	0.4352318	0.283951
sfint_2_ASP	-1.55645	0.848135	-1.84	0.066	-3.218759	0.1058686	0.210884
sfint_3_ASP	-1.53504	0.822813	-1.87	0.062	-3.147723	0.077644	0.215447
sfint_2_CCI	-1.17866	0.864173	-1.36	0.173	-2.872403	0.5150928	0.307692
sfint_3_CCI	-0.53151	0.841373	-0.63	0.528	-2.180566	1.117554	0.587719
sfint_1_CCWF	-1.50408	0.912871	-1.65	0.099	-3.293272	0.2851167	0.222222
sfint_2_CCWF	-1.98959	0.868797	-2.29	0.022	-3.692395	-0.286775	0.136752
sfint_3_CCWF	-1.38174	0.835791	-1.65	0.098	-3.019859	0.2563823	0.251142
sfint_2_CEN	-1.09861	1.290994	-0.85	0.395	-3.628915	1.43169	0.333333
sfint_3_CEN	0.616186	0.893184	0.69	0.49	-1.134422	2.366795	1.851852
sfint_1_CMF	-1.56862	0.910586	-1.72	0.085	-3.353331	0.2160996	0.208333
sfint_2_CMF	-3.4012	1.329158	-2.56	0.011	-6.0063	-0.7960952	0.033333
sfint_3_CMF	-2.08959	0.82077	-2.55	0.011	-3.698273	-0.4809152	0.123737
sfint_1_HDSP	-2.43361	0.890496	-2.73	0.006	-4.178953	-0.688274	0.087719
sfint_2_HDSP	-1.30221	0.851611	-1.53	0.126	-2.971337	0.3669148	0.27193
sfint_3_HDSP	-1.94591	0.830267	-2.34	0.019	-3.573203	-0.3186178	0.142857
sfint_1_SATF	-2.14007	0.882843	-2.42	0.015	-3.870407	-0.4097257	0.117647
sfint_2_SATF	-1.30625	0.897825	-1.45	0.146	-3.065956	0.453453	0.270833
sfint_3_SATF	-1.93865	0.822027	-2.36	0.018	-3.549793	-0.3275077	0.143898
sfint_1_SOL	-1.6864	0.988827	-1.71	0.088	-3.624463	0.2516653	0.185185
sfint_2_SOL	-0.539	1.029332	-0.52	0.601	-2.55645	1.478457	0.583333
sfint_3_SOL	-1.14191	0.827037	-1.38	0.167	-2.762873	0.4790544	0.319209
sfint_1_SVSP	-2.27727	0.8651	-2.63	0.008	-3.972831	-0.5817031	0.102564
sfint_2_SVSP	-2.25129	0.881088	-2.56	0.011	-3.978192	-0.5243914	0.105263
sfint_3_SVSP	-2.12242	0.827668	-2.56	0.01	-3.744623	-0.5002236	0.119741
_cons	1.098612	0.816497	1.35	0.178	-0.5016916	2.698916	

Note: Sample size=3310. 26 inmates in medical beds were excluded from the analysis. Sfint_1_CCI is the reference category. Being in the category "sfint_1_CEN" predicts being sampled perfectly so 2 inmates in this category were excluded from this analysis and assigned a weight of 1.

[4] We estimated another regression which uses the covariates that are used in the initial low risk-high risk stratification (length of stay and physical disability interactions, and age) but we did not gain much. The coefficients on these additional covariates were not statistically significant.

Appendix 7: Development of Algorithm to Determine Appropriate Level of Care: Supporting Material and Tables

Table A7.1 Need for Long Term Care Diseases with a Significant (p_value<.05), Positive Correlation with the Need for Long Term Care*

Disease	Number of Inmates with the Disease	Pearson Correlation Coefficient**	P Value Measure of Significance
035: Dementia	42	0.18634	<.0001
037: Hx Stroke (CVA) w/resid impair	57	0.17628	<.0001
038: Hemiplegia	41	0.15865	<.0001
040: Paraplegia	41	0.14670	<.0001
015: COPD	90	0.13818	0.0002
003: Congest Heart Failure	60	0.12695	0.0006
028: Chronic renal insuff	35	0.11987	0.0012
001: Hypertension	284	0.10428	0.0050
002: Ischemic Heart Disease	96	0.10158	0.0062
005: Atrial Fibrilation	17	0.09863	0.0079
039: Quadripeligia	7	0.09772	0.0085
055: Diabetes mellitus	134	0.09432	0.0111
042: Hypertension	10	0.09337	0.0120
043: Multiple sclerosis	13	0.09212	0.0131
068: Hx Lower Limb Amp	12	0.08512	0.0220
065: Osteoporosis	5	0.08247	0.0265
046: Hearing loss	14	0.07869	0.0343
006: Longterm AntiCoags	11	0.07767	0.0367
087: MRSA (colonization)	19	0.07595	0.0410
026: Chronic constipation	41	0.07498	0.0437

* In Descending Order by the Size of the Correlation Coefficient

Table A7.2. Need for Long Term Care Diseases with a Significant (p_value<.05), Negative Correlation with the Need for Long Term Care

Disease	Number of Inmates with the Disease	Pearson Correlation Coefficient*	P Value Measure of Significance
105: Post-hospital care	58	-0.17626	<.0001
094: GI bleed (current)	13	-0.11592	0.0018
095: Nausea and vomit	25	-0.11557	0.0018
102: Jaw fracture	12	-0.10963	0.0031
085: Cellulitis (current)	15	-0.10828	0.0035
104: Pre-procedure care	31	-0.09104	0.0143
086: Herpes zoster (current)	5	-0.08432	0.0233

* In Order by the Size of the Correlation Coefficient

Table A7.3 . Nursing Needs with a Significant (p_value<.05), Positive Correlation with the Need for Long Term Care*

Nursing Need	Number of Inmates with the Nursing Need	Pearson Correlation Coefficient*	P Value Measure of Significance
44: Wheelchair	213	0.30509	<.0001
31: Diapers/Briefs	41	0.19451	<.0001
30: Urinary Incont	51	0.16430	<.0001
28: MedAdmin	91	0.15832	<.0001
56: PT and/or OT	64	0.14254	0.0001
43: Walker	72	0.13480	0.0003
01: Vital signs Daily	265	0.12064	0.0011
45: Mechanical Lift	28	0.11240	0.0025
12: Fingerstick <daily	12	0.10676	0.0040
50: Hx Recent fall	40	0.10616	0.0042
40: Fecal incont	45	0.10586	0.0044
47: Blind 2 eyes	18	0.10469	0.0048
32: Condom Cath	17	0.09863	0.0079
48: Hearing Impaired	17	0.09863	0.0079
08: Trach care	9	0.08603	0.0206
22: Oral anticoag	35	0.08123	0.0289
51: Hx fall in past >90day	25	0.08113	0.0291
37: Gastro PEG tube	11	0.07767	0.0367
06: Nebulizer Tx	39	0.07690	0.0386

* In Descending Order by the Size of the Correlation Coefficient

Table A7.4. Need for Long Term Care Nursing Needs with a Significant (p_value<.05), Negative Correlation with the Need for Long Term Care

Nursing Need	Number of Inmates with the Nursing Need	Pearson Correlation Coefficient*	P Value Measure of Significance
18: Cont. IV	86	-0.25168	<.0001
26: SurgSite/Drain daily	86	-0.20899	<.0001
02: Vital signs Qshift	375	-0.12479	0.0008
27: SurgSite/Drain <daily	13	-0.11592	0.0018
17: Intermitt. IV	54	-0.09777	0.0085
23: SQ anticoag	31	-0.09104	0.0143

* In Order by the Size of the Correlation Coefficient

Table A7.5. Predicting the Probability Of Current LTC Need Among Inmates In Medical Beds.

RHS Variable	Coef	Std. Err	Z	P>z	[95 percent Conf. Interval]	
Any Permanent PADL	0.94	0.20	4.71	0.00	0.55	1.33
Nursing Needs associated with short-term care	-0.35	0.09	-3.68	0.00	-0.53	-0.16
Diagnoses associated with short-term care	-0.64	0.20	-3.27	0.00	-1.03	-0.26
Diagnoses associated with long-term care	0.25	0.07	3.51	0.00	0.11	0.39
Nursing Needs associated with long-term care	0.31	0.08	3.86	0.00	0.15	0.47
Any cognitive problem	0.56	0.22	2.59	0.01	0.14	0.99
Constant	-0.87	0.19	-4.61	0.00	-1.24	-0.50

Logistic regression: Number of obs = 724, Outcome Variable: LTC (1= yes, 0=no), LR chi2(5)=227.65, Prob > chi2 =0, Log likelihood = -387.9713, Pseudo R2 =0.2268

Table A7.6 Multinomial Logistic Model for Estimating Level Of Long-Term Care*

Nursing Need	Coef	Std Err	z	P>|z|	95 percent CI	
LEVEL = LOW-ACUITY						
Vitals Q shift	0.91	0.29	3.10	0.00	0.33	1.48
Continuous IV	1.11	1.20	0.92	0.36	-1.25	3.47
Surg. site/ drain daily care	1.35	0.74	1.82	0.07	-0.10	2.81
Medication administration	0.54	0.43	1.27	0.21	-0.30	1.38
Routine/frequent disimpaction/enemas	23.16	1.19	19.49	0.00	20.83	25.49
Fecal incontinence	1.58	0.86	1.84	0.07	-0.10	3.25
Mechanical Lift	22.12	.	.	.	.	.
Blind both eyes	-1.81	1.10	-1.64	0.10	-3.98	0.35
Monitoring I/O	1.14	0.49	2.34	0.02	0.19	2.10
COPD	-0.76	0.41	-1.84	0.07	-1.56	0.05
Lymphoma, Hodgkins or Leukemia	21.35	.	.	.	.	.
Herpes zoster	0.20	0.99	0.20	0.84	-1.75	2.14
Pre-procedure care	0.49	0.98	0.50	0.62	-1.42	2.40
_Constant	-1.30	0.22	-5.93	0.00	-1.73	-0.87
LEVEL = HIGH-ACUITY						
Vitals Q shift	1.42	0.36	3.90	0.00	0.71	2.13
Continuous IV	2.51	1.12	2.25	0.03	0.32	4.70
Surg. site/ drain daily care	1.66	0.78	2.13	0.03	0.13	3.18
Medication administration	1.57	0.44	3.60	0.00	0.72	2.43
Routine/frequent disimpaction/enemas	21.91	.	.	.	.	.
Fecal incontinence	2.28	0.84	2.71	0.01	0.63	3.94
Mechanical Lift	25.62	1.08	23.61	0.00	23.49	27.74
Blind both eyes	-1.16	1.13	-1.02	0.31	-3.39	1.06
Monitoring I/O	1.18	0.53	2.22	0.03	0.14	2.22
COPD	0.21	0.42	0.49	0.62	-0.61	1.03
Lymphoma, Hodgkins or Leukemia	22.46	0.94	23.85	0.00	20.62	24.31
Herpes zoster	1.52	0.89	1.71	0.09	-0.23	3.27
Pre-procedure care	1.89	0.88	2.16	0.03	0.17	3.61
_Constant	-2.64	0.34	-7.81	0.00	-3.30	-1.98

*Comparison level is SPECIAL GP

Appendix 8: Estimating the Number of Inmates with Current Long-term Care Need

In order to generalize the findings for the nine sampled prisons to the unsampled prisons and generate estimates of the total number of each level of long-term care bed needed, we follow the procedure described in this Appendix.

There are P prisons: p = 1,2…9. The first, CMF, has a medical mission. The next eight -- p=2… 9 appear in the sample. The rest, p = 10…33, comprise the unsampled prisons.

Inmates were partitioned into 4 strata based on whether or not they were nominated by correctional officers (COs) and whether they were in the high-risk or low-risk group according to the risk model discussed in Appendix 5.

There are 4 strata: h – 1,2,3, and 4.

h=1 denotes nominated (by guards) and high risk group
h=2 denotes not-nominated and high risk group
h=3 denotes nominated and low risk group
h=4 denotes not-nominated and low risk group

The index j denotes individual prisoners

n_{ph} number of prisoners sampled from stratum h in prison p. of course, n_{p4}=0.
N_{ph} number of prisoners in stratum h in prison p
Y_{phj} response variable = 1 if inmate has long-term care need (LTC) and = 0 otherwise for the jth offender in stratum h and prison p.

First, we will estimate the number of inmates needing LTC in strata 1 and 2. These are the high risk offenders.

[1] $$\hat{Q}_{p,h=1or2} = \frac{N_{p1}\hat{Q}_{p1} + N_{p2}\hat{Q}_{p2}}{N_{p1} + N_{p2}}$$

where $\hat{Q}_{ph} = \frac{\sum_{j=1}^{n_{ph}} y_{ph}}{n_{ph}}$ is the stratum mean where y_{ph}

[2] $$Var(\hat{Q}_{p,h=1or2}) = \left[\frac{N_{p1}}{N_{p1} + N_{p2}}\right]^2 Var\left(\hat{Q}_{p1}\right) + \left[\frac{N_{p2}}{N_{p1} + N_{p2}}\right]^2 Var\left(\hat{Q}_{p2}\right)$$

where $Var\left(\hat{Q}_{ph}\right) = \frac{\hat{Q}_{ph}\left(1 - \hat{Q}_{ph}\right)}{n_{ph}}$

[3] $$\hat{\bar{Q}}_{p,h=1or2} = \frac{\sum_{\rho=2}^{9} \hat{Q}_{p,h=1or2}}{8}$$

[4] $$\left(\hat{\bar{Q}}_{p,h=1or2}\right) = \frac{1}{8^2} \sum_{\rho=2}^{9} Var\left(\hat{Q}_{p,h=1or2}\right)$$

[5] $$V = \frac{\sum_{\rho=2}^{9} (\hat{Q}_i - \hat{\bar{Q}}_{p,h=1or2})^2}{8}$$

For the sampled prisons, the best estimate for the number of inmates needing LTC in strata h=1 and h=2 is:

[6] $$\hat{C}_{s,h=1or2} = \sum_{\rho=1}^{9} \left(N_{p1} + N_{p2}\right) \hat{Q}_{p,h=1or2}$$

The variance term requires using a finite sample adjustment factor $f_{ph} = 1 - \frac{n_{ph}}{N_{ph}}$ so that

$$Var\left(\hat{Q}_{ph}\right) = f_{ph} \frac{\hat{Q}_{ph}\left(1 - \hat{Q}_{ph}\right)}{n_{ph}}$$

Substitute this variance into [2] gives a new expression for $Var(\hat{Q}_{p,h=1or2})$ <u>which applies only to the sample</u>. The resulting variance for inmates needing LTC in the sampled facilities is

[7] $$Var\left(\hat{C}_{s,h=1or2}\right) = \sum_{\rho=1}^{9} \left(N_{p1} + N_{p2}\right)^2 Var\left(\hat{Q}_{p,h=1or2}\right)$$

For the non-sampled facilities, the estimates are

[8] $$\hat{C}_{U,h=1or2} = \hat{\bar{Q}}\, N_U$$

Where N_u is the total number of offenders in strata 1 and 2 in the prisons that were not sampled.

The sampling variance is [4]

[9] $$Var\left(\hat{C}_{h=1or2}\right) = N_{U,h=1or2} \left[Var\left(\hat{\bar{Q}}_{h=1or2}\right) + \frac{V}{33-9} \right]$$

To get estimates from across all prisons for offenders in the first two strata, we added the estimates for the sampled prisons and the unsampled prisons.

To get the estimate for offenders in the last two strata (h = 3 and 4):

[A] Assume initially that there are no inmates with LTC need in stratum h=4. Equivalently, assume $\hat{Q}_{p4} = 0$ and $Var\left(\hat{Q}_{p4}\right) = 0$

[B] Repeat all the calculations [1] through [8] setting $n_{p4} = N_{p4}$, an innocuous assumption since $\hat{Q}_{p4} = 0$ by assumption. Add all the estimates together.

[10] $\hat{C} = \hat{C}_{s,h=1or2} + \hat{C}_{U,h=1or2} + \hat{C}_{s,h=3or4} + \hat{C}_{U,h=3or4}$

[11] $Var\left(\hat{C}\right) = Var\left(\hat{C}_{h=1or2}\right) + Var\left(\hat{C}_{h=3or4}\right)$

The 95 percent confidence interval around $\hat{C}$ is [12].

[12] $\hat{C} \pm 1.96\sqrt{Var\left(\hat{C}\right)}$

A8.1 Adjusting for Low Sensitivity of Nominations

In the estimates calculated above, we assumed that no inmates in the 4th stratum (low-risk and not nominated) needed long-term care. In other words, we assumed that the nomination procedure would identify all inmates needing long-term care. However, an analysis of the CO nominations among the inmates in our sample indicates that the nomination exercise was not very sensitive (Table A4-1). From our sample, we estimated 329 inmates need long-term care and 80 (24 percent) of them had been nominated by COs.

In order to get an estimate of the number inmates with long-term care needs among the inmates in the unsampled stratum of non-nominated low-risk inmates, we used the proportion of inmates from the medical bed census who were in the low-risk group in the nine sampled prisons (33/164 = 20 percent). Assuming that the distribution of inmates with LTC need across the low and high risk groups is the same for the inmates in general population as it was for the inmates in medical beds, then, had there been no nominations, the number of inmates needing LTC that we calculated above, $\hat{C}$, would be an underestimate that can be corrected by multiplying by the adjustment factor, R = 164/(164-33) = 1.25. The confidence interval can be corrected by multiplying the $Var\left(\hat{C}\right)$ by R^2. This is the adjustment factor we used in reporting our main results. Because the sensitivity of the nominations in our project was 24 percent, the adjustment factor could be reduced to 164/(164-(33*0.8)) = 1.19. However, we expected that in the general population inmates LTC need may be somewhat less correlated with risk group than it is among inmates in medical beds, and therefore, we choose to use the adjustment factor of 1.25 to account for the extrapolation from medical bed inmates to the general population inherent in the application of the adjustment factor.

Table A8.1. Results of Correctional Officer Nominations

Prison Facility	ASP	CCI	CCWF	CEN	CMF	HDSP	SATF	SOL	SVSP
Number of Nominations	54	30	27	4	11	42	187	12	28
Number not Nominated but Sampled	159	67	59	56	203	65	162	113	75
Percent with Functional or Cognitive Limitations	78	67	67	50	91	40	92	75	64
Relative Risk	1.5	2.2	1.02	0.62	5.62	1.05	4.2	2.86	1.76
pLTC | Nominated	0.49	0.39	0.44	0.41	0.61	0.41	0.55	0.52	0.43
pLTC | Not nominated	0.42	0.36	0.43	0.39	0.45	0.38	0.47	0.43	0.43
Expected number with LTC among Nominated	26	12	12	2	7	17	103	6	12
Expected number with LTC among non-nominated	67	24	25	22	92	25	76	49	33
Percent of Nominated that needed LTC	49 percent	39 percent	44 percent	41 percent	61 percent	41 percent	55 percent	52 percent	43 percent
Percent of non Nominated that needed LTC	42 percent	36 percent	43 percent	39 percent	45 percent	38 percent	47 percent	43 percent	43 percent
RR of LTC for Nominated vs Non-nominated	1.16	1.10	1.03	1.04	1.35	1.07	1.17	1.19	0.99
Nominations in Low-risk strata	31	24	17	2	1	31	13	7	12
Percent of Nominated Low Risk that Needed LTC	47 percent	36 percent	41 percent	39 percent	35 percent	35 percent	45 percent	49 percent	36 percent
Number of High-risk group that were nominated	23	10	10	2	10	11	12	4	16
Percent of high-risk nominated that needed LTC	51 percent	49 percent	49 percent	43 percent	64 percent	58 percent	66 percent	56 percent	49 percent

Table A8.2.

Stratification of General Population Inmates		Statistical model	
		High-risk group	**Low-risk group**
Correctional officer nominations	Nominated 107	Sampled (n=95, N=288)	Sampled (n=138, N=360)
	Not Nominated 413	Sampled (n=959, N=2690)	Not Sampled (N=42,185)

Exhibit F

Abt Associates Inc.

Update to the California Prison Long-term Care Needs Assessment: Impact of Prison Population Reductions

Analysis Brief

Cambridge, MA
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June 13, 2008

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I. Introduction

The Receivership plans to construct new long-term care (LTC) facilities for inmates with chronic illness and physical impairment. To assure that building plans were consistent with needs, the Receivership contracted with Abt Associates to estimate and project LTC needs over a ten-year time horizon. Abt Associates based prevalence estimates on a census of inmates in medical beds in all 33 California prisons and a probability sample of other inmates in nine of these prisons. According to that study, in 2007, nearly 3000 California inmates needed LTC (Table 1). Relying on California Department of Corrections and Rehabilitation (CDCR) projections of inmate population by age category, Abt Associates projected that demands for long-term care would increase steadily to nearly 5300 inmates by 2017.

The aging of the inmate population and the strong association between age and long-term care need (Figure 1) were identified as the underlying drivers of the projected growth in long-term care need among the prison population in the next 10 years.

Table 1: Original Estimates of Need for Long-Term Care Beds in the California State Prison System in 2007*

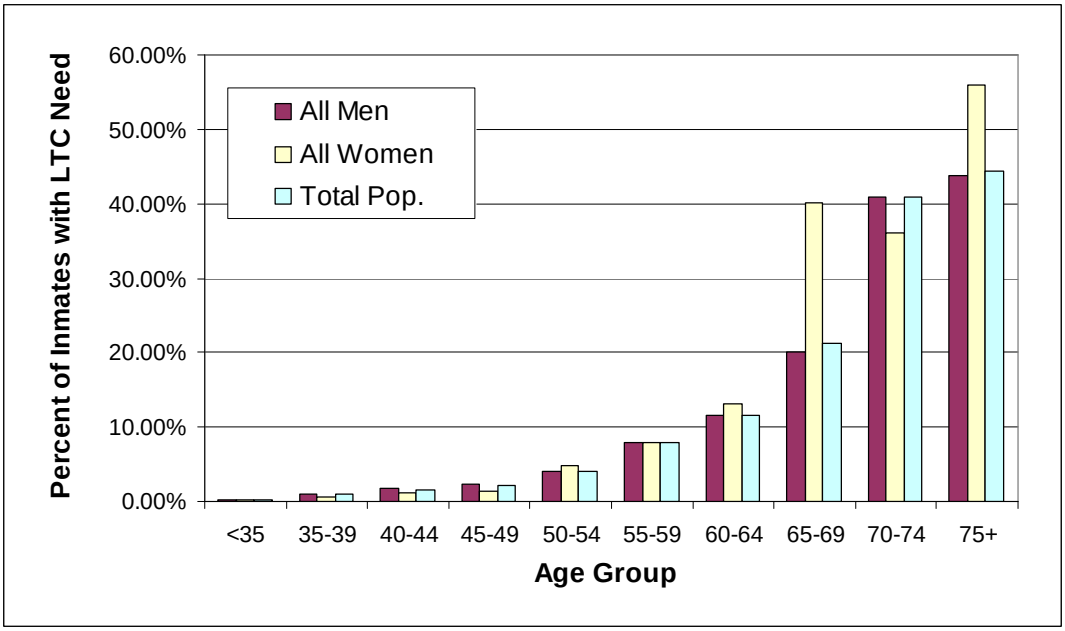
Sub-population	Level of Long-term Care**			
	Specialized GP (number of inmates)	Low Acuity (number of inmates)	High Acuity (number of inmates)	TOTAL (number of inmates)
Medical Beds - all prisons	183	92	91	366
California Medical Facility	173	43	18	233
8 other sampled facilities	567	125	46	738
24 unsampled facilities	934	208	77	1,219
TOTAL- All prisons , unadjusted	1,856	469	232	2,557
Adjustment Factor for unsampled stratum				1.19
TOTAL – All prisons, adjusted for LTC need within unsampled stratum	**2174**	**541**	**259**	**2974**
†95 percent confidence Interval (Lower Bound, Upper Bound)				(2713, 3233)

*Based on a population of 135,863 that does not include ~28,000 inmates in reception centers or ~7500 in community corrections. *See original report for methodological detail*

**Levels of care: From lowest to highest level of care, these are 1) specialized general population (equivalent to sheltered housing or congregate living), 2) low acuity medical beds (equivalent to assisted living), and 3) high-acuity medical beds (equivalent to skilled nursing beds).

†95% CI = E(X) +/- 1.96 * SQRT (Var(X)) where X is the estimated number of beds needed

Figure 1. Long-term Care Need by Age and Sex in General Population of Nine Sampled Prisons



The CDCR recently reduced its five-year projections of inmate population growth. Moreover, pending legislation aims to reduce populations substantially beyond what CDCR projects. One such proposal would release 22,000 individuals convicted of non-violent offences. Such sharp reductions in prison population are likely to impact the need for LTC in prisons. However, the impact on LTC need will depend on the LTC need among inmates who are released and the rate at which released inmates return to custody.

In this Analysis Brief, we present updates to the original report that account for custody level in the projection model, incorporate CDCR Spring 2008 population projections, and consider the impact of a "mass release scenario." Specifically, we conducted the following analyses.

- We post-stratified the sample by custody level and developed estimates of LTC need that are specific to each custody level stratum. This provided new estimates of LTC needs that did not differ greatly from previous estimates that did not post-stratify by custody level. This is discussed in Section II.
- We updated the analysis using new population projections from CDCR that were not available at the time of the original study. This is discussed in Section III.
- We tested a policy that releases a large number of non-violent offenders who were confined at the lowest two custody levels to see how this would affect the need for LTC. This is discussed in Section IV.

II. Accounting for Custody Level

CDCR inmates are classified into custody levels I, II, III, and IV, based on security risk. Among the entire prison population in our original cohort 75%, 5%, and 20% of females were housed at level I, II, and III. Likewise, 14%, 29%, 35%, and 22% of males were houses at level I, II, III, and IV. However, our sample of female inmates only included inmates at custody level I and the distribution of inmates in the eight male institutions we sampled was

6%, 36%, 32%, and 26% for the four custody levels, I, II, III, and IV, respectively. Because the custody level distribution of our sample is different from the overall population, our estimates of LTC need may be biased if they are not adjusted for custody level. Moreover, proposed policies to release large numbers of inmates generally set criteria for release that restrict eligibility to inmates that are low security risks (e.g. nonviolent offenders with custody level of I or II). If LTC need is greater among inmates at high custody levels, the release of inmates at low custody levels may have a little impact on LTC need. Conversely, if LTC need is greater among low custody levels, the release of these inmates will have a greater impact on LTC need.

In order to control for variation in the prevalence of LTC need across custody level, we augmented the projection model to explicitly consider custody level as a factor when estimating LTC need. Specifically, we calculated LTC need separately for the inmate population at each custody level, and generalized from the nine sampled facilities to the 24 unsampled facilities within each custody level group. In this way we account for variation in the prevalence of LTC need across custody level and the difference in the distribution of inmates across custody levels in our sample compared to the full population.

In the original study, general population inmates were partitioned into low- and high-risk groups based on age, prior hospitalizations, and known physical disabilities. Generalization from the sampled facilities to the unsampled facilities was carried out separately within each risk group. In the new analysis, the risk groups and corresponding generalizations are further broken out by custody level.

Table 2 show the LTC need among general population inmates by risk group and custody level. Excluding reception centers and community corrections and after adjusting for the unsampled stratum (see original report for details of sample design), we estimate that 1.73% of the general population inmates are in need of some level of LTC. The prevalence of LTC need is lowest among Level I inmates (1.18 %) and highest for Level II and IV inmates (about 2.01%). About 1.54% of Level III inmates needed LTC.

Table 2: Long-term Care Need Among General Population Inmates by Custody Level

LOW RISK GROUP			
Custody Level	**LTC Prevalence**	**Population***	**Inmates with LTC Need**
I	0.41%	22,468 (17.7%)	92.3
II	0.24%	35,610 (28.0%)	86.9
III	0.16%	38,133 (30.0%)	60.4
IV	0.15%	30,893 (24.3%)	47.5
All	0.23%	127,104 (100%)	287.1
HIGH RISK GROUP			
Custody Level	**LTC Prevalence**	**Population***	**Inmates with LTC Need**
I	23.99%	570 (10.0%)	136.8
II	33.25%	1,634 (28.5%)	543.4
III	26.39%	1,716 (30.0%)	452.8
IV	27.78%	1,804 (31.5%)	501.1
All	28.55%	5,724 (100%)	1634
TOTAL			
Custody Level	**LTC Prevalence**	**Population***	**Inmates with LTC Need**
I	0.99%	23,038 (17.3%)	229.1
II	1.70%	37,244 (28.0%)	630.2
III	1.29%	39,849 (30.0%)	513.2
IV	1.68%	32,697 (24.6%)	548.6
All	1.45%	132,828 (100%)	1921.1
ADJUSTED TOTAL			
Custody Level	**LTC Prevalence****	**Population***	**Adjusted Estimate of LTC Need****
I	1.18%	23,038 (17.3%)	231.2
II	2.02%	37,244 (28.0%)	630.2
III	1.54%	39,849 (30.0%)	742.9
IV	2.00%	32,697 (24.6%)	549.9
All	1.73%	132,828 (100%)	2154.3

*Not including reception centers, community corrections, or medical beds. 366 inmates needing LTC are currently in medical beds.
**Adjusted for unsampled stratum by multiplying unadjusted estimates by 1.19

When accounting for variation in LTC need by custody level of general population inmates, our mean estimate of current (Year 2007) LTC need is reduced by 42 specialized general population (SGP) beds and three low-acuity beds compared to the original analysis so that the total current need for LTC beds declines 1.5% from 2974 to 2930 (Table 3).

Table 3: Updated Estimates of Need for Long-Term Care Beds in the California State Prison System in 2007*

Sub-population	Level of Long-term Care			
	Specialized GP (number of inmates)	Low Acuity (number of inmates)	High Acuity (number of inmates)	TOTAL (number of inmates)**
Medical Beds - all prisons	183	92	91	366
CMF	173	43	18	233
8 other sampled facilities	566	126	46	739
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TOTAL- All prisons , unadjusted**	1,821	467	232	2,520
Adjustment Factor for unsampled stratum				1.19
TOTAL – All prisons, adjusted for LTC need within unsampled stratum	**2,132**	**539**	**259**	**2,930**

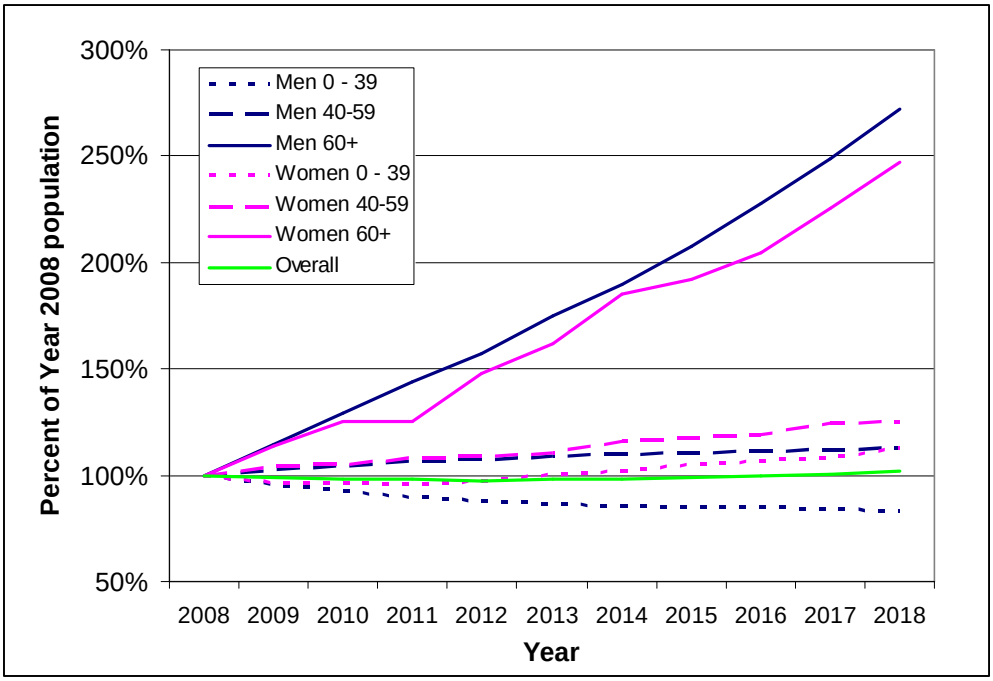
III. Accounting for New CDCR Population Projections

According to CDCR projections at the time of the 2007 study, the total CDCR inmate population was expected to increase by 8 percent through 2012, and the over-60 age group was expected to increase by 80 percent. We extrapolated the CDCR's official projections for an additional five years (through 2017) by fitting a curve to the growth rates within age strata and projecting the change in population within these age groups. To generate projections of LTC bed need, we partitioned the current inmates needing LTC into 10 age groups. Then we applied age-group-specific prevalence of LTC need to the CDCR's age-structured population projections. The resulting projections indicated a steady rise in LTC need from 2974 inmates in 2007 to 5294 in 2017.

CDCR's most recently published semiannual update of its 5-yr prison population projections indicates that a modest *decline* in prison population is expected. According to the CDCR report, the change in the projections from Spring 2007 to Spring 2008 is "largely due to a decrease in new admissions from court and a decrease in parole violators returned to custody." Although CDCR only releases 5-year population projections to the public, their model can forecast population trends beyond that time horizon. Using the Spring 2008 modeling assumptions, CDCR generated age- and sex-stratified projections through 2018 for Abt Associates to use in updating estimates of LTC need. In Figure 2, the expected population growth for male and female inmates by age category are shown. The updated trends reflect a modest decline in the overall population (green line) over the

next 5 years, followed by an equivalent increase in the subsequent 5 years[1]. As in the original analysis, the population of older inmates (age 60 and older) is expected to grow while the youngest age group is expected to decline.

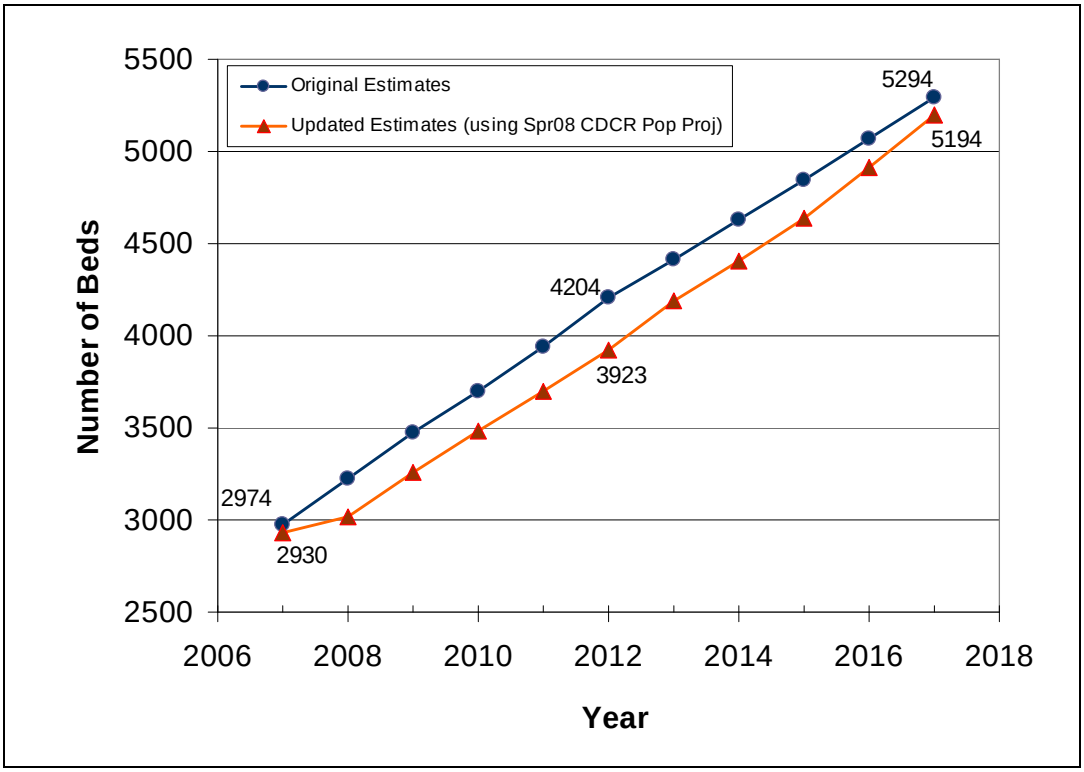
Figure 2: Revised Estimate of Population Growth by Age Category



Recalculating age-group specific LTC prevalence estimates and applying these estimates to the updated age- and sex- structured population projections yielded new estimates of future LTC need that are somewhat lower than originally reported. Starting from a lower level (due to the revised model that accounts for custody level as discussed in Section I above), LTC need grows over the next 6-7 years at a slightly slower rate than predicted in the original model (Figure 3). By 2012, LTC need reaches 3923 beds, as compared to 4204 beds in the original analysis. By 2017, LTC need is projected to reach 5194—100 fewer beds than originally predicted.

[1] CDCR Population Projection unit only publicly reported Spring 2008 projections through 2013. The extended Spring 2008 projections (through 2018) were provided to the Receivership by CDCR for this updated analysis. In the original analysis, we extrapolated the CDCR 5-year Spring 2007 projections by fitting curves to the projected trends. In this update, we used the extended Spring 2008 projections from CDCR population projection model directly.

Figure 3: Projected Need for Long-term Care Beds (2007-2017) Using CDCR Spring 2008 Population Projections



IV. Impact of a one-time mass release policy

Specification of Release Policy

Using the updated model, we consider the impact of a one-time release of 20,000 Custody Level I and II inmates. Because of the differences in LTC need across custody level, *ceteris paribus*, releasing Level I inmates can be expected to have less impact on LTC need than releasing inmates at higher custody levels. Likewise, releasing Level II inmates will reduce LTC need the most.

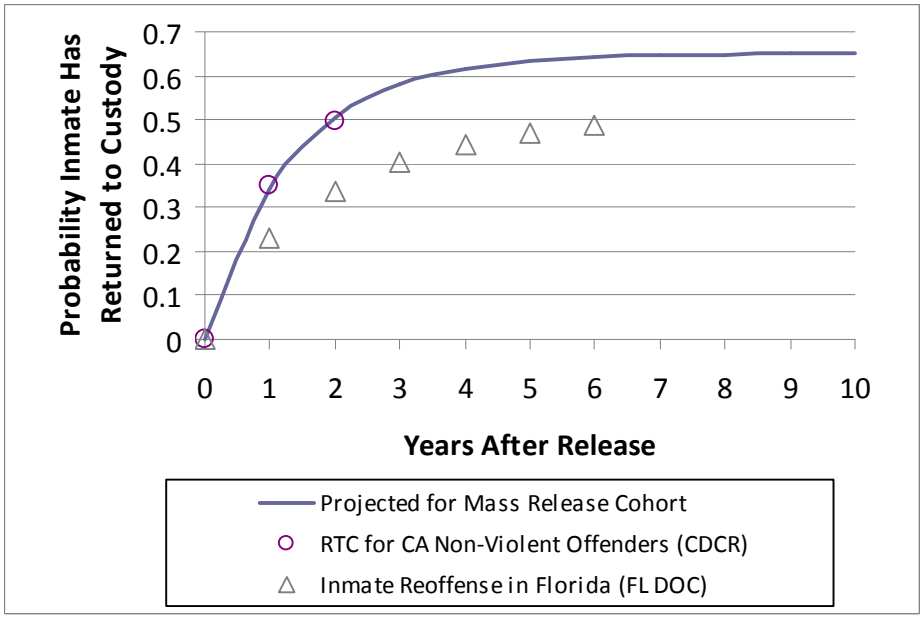
We assumed that any inmate at Custody Level I or II had an equal chance of being released under the proposed policy. If, in fact, Level I inmates are more likely to be released, then the reduction in LTC need may not be as large as we predicted. Likewise, if, within each custody level, *younger* inmates are more likely to be released under the proposed policy, then our assumption may cause us to further overestimate the reduction in LTC need.

It is likely that some portion of the cohort of released inmates will return to custody during the time horizon of the analysis. CDCR data on 1- and 2-year recidivism rates shows that 35% and 50% of inmates whose principal commitment offense is non-violent[2] were returned

[2] We assumed the following offenses were non-violent: forgery/fraud, other property, controlled substance (CS) possession, CS possession for sale, CS sales, CS manufacture, CS other, hashish possession, marijuana possession, marijuana possession for sale, marijuana sales, marijuana other.

to custody within 1 and 2 years, respectively. Data from Florida[3] and other states indicate that recidivism can occur after 2 years following release. We assumed that 65% of the released inmates would return to custody within 10 years at a rate of 0.75 per released inmate per year. At this rate, the 1- and 2-year recidivism rates match those observed for non-violent California paroles with non-violent primary commitment offenses. If, in fact, fewer inmates from the mass cohort are returned to custody, or these inmates return to custody at a slower rate, then our assumption will cause us to underestimate the reduction in LTC need due to the mass release.

Figure 4: Probability of Returning to Custody



For convenience, we assumed the mass release occurs in the first year of our time horizon (i.e. 2007).

Results

A one-time release policy targeting inmates at Custody Level I and II can be expected to reduce the number of LTC beds roughly in proportion to the reduction in the overall population size. The reduction of 20,000 inmates represents 15.1 percent of the general population not in reception centers, community corrections or medical beds. The predicted reduction in LTC need by 340 inmates represents 13.3 percent of the LTC need among this population (Table 4).

[3] http://www.dc.state.fl.us/pub/recidivism/2001/exec.html

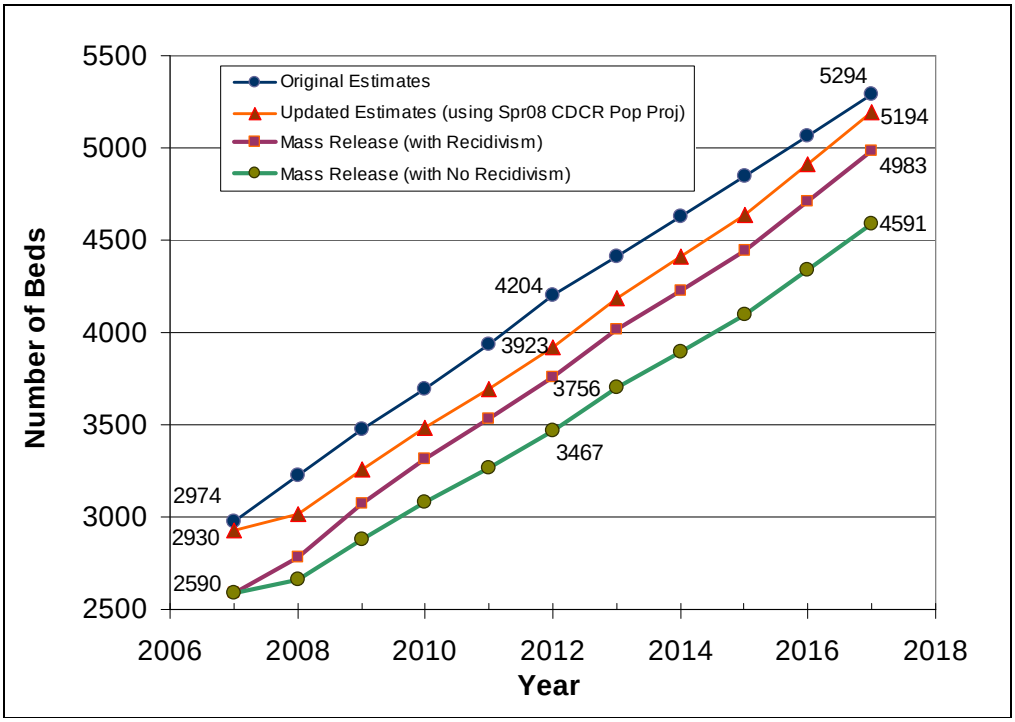
Table 4: Reduction in Current Long-Term Care Bed Need Due to a One-time Mass Release of 20,000 Custody Level I and II inmates from General Population*

Custody Level	Population			LTC Need**		
	Original	Reduction	Remaining	Original	Reduction	Remaining
I	23,038	7,643	15,395	275	91	184
II	37,244	12,357	24,887	750	249	501
TOTAL	60,282	20,000	40,282	1,025	340	685

*Not including reception centers, community corrections, or medical beds. 366 inmates needing LTC are currently in medical beds.
**Adjusted for unsampled stratum by multiplying unadjusted estimates by 1.19

To assess the impact over a 10-year time horizon, we assumed that 65% of the released cohort of 20,000 inmates would eventually return to custody at a rate of 0.75 per person per year. We also assumed that LTC would develop with age among the mass release cohort at the same rate experienced by the unreleased inmates. Under these assumptions, the current LTC need would be reduced by 340 from 2930 to 2590 (Figure 5). Each year, the level of LTC would be lower than if no mass release occurred. However, the rate of growth in LTC would be significantly higher in the first few years as a portion of the release cohort returns to custody. After the first 5 years, LTC need will be approximately 200 beds lower under the mass release scenario compared to the updated estimates with no mass release. To illustrate the impact of recidivism, we also show, in Figure 5, the trend for LTC bed need under the assumption that no inmates from the mass release cohort return to custody. In this scenario, by 2017, LTC need is reduced to 4591, or 603 less than projected if there were no mass release.

Figure 5: Projected Need for Long-term Care Beds (2007-2017) after a one-time release of 20,000 Custody Level I & II Inmates



V. Discussion

Accounting for custody level in the estimation of current LTC need has a small impact, reducing our original estimate by 1.5% from 2974 to 2930. Updating the CDCR population projections on which LTC projections are based has a more substantial impact. The Spring 2007 CDCR Projections used for the original analysis predicted an increase of 1.5% to 1.75% per year. In contrast, the Spring 2008 CDCR projections show 4.5% decrease in prison population by 2012, followed by a rise back to 2007 levels by 2017. We estimate that these reductions in projected overall prison population growth rate may reduce LTC need by 281 beds in the next 5 years compared to our original estimates.

Because the overall population decline is due to fewer intakes, primarily among younger inmates, then the "stock" of people already in prison is going to continue to age. LTC need will decline only modestly over the medium term (10 year time horizon) in response to lower rate of intakes. Of course, those that eventually get released may have a lower probability of being re-incarcerated, but the effect on LTC need will be small.

This logic also applied to the mass release policy. If the release criteria is only based on custody level, then the impact on LTC will be roughly proportional to the reduction in overall population size, as we have shown. However, if older or sicker inmates are more likely to be release under the policy—either by coincidence or by design--then the impact on LTC need could be substantial larger.

Finally, in order to have a lasting impact on LTC need, released inmates must not return to custody. If released inmates return to custody at rates that have been observed historically, the prison population reduction may be largely transient.

A mass release of 20,000 Level I and II released inmates may reduce LTC by about 340 beds. But, assuming that released inmates return to custody at rates that are consistent with those observed historically by CDCR, most of the initial drop in LTC need would only be temporary. The released cohort would continued to develop chronic disease and functional impairment as they age, and over 10-years, LTC need in the cohort would grow to 603 persons. If 65% of the released cohort returns to custody over a 10-year period, we estimated the total LTC bed need in the prison system will rise to 4983—just 211 beds less than would have been needed if no mass release occurred.

Even after accounting for differences in LTC prevalence by custody level and updating the underlying CDCR population projections to reflect newly anticipated population trends, the burden of LTC among California inmates remains high. Current need still remains over 2900 beds and is expected to increase to 3923 by 2012 and 5194 by 2017. A one-time mass release of 20,000 Level I and II inmates might reduce total LTC need further--by as much as 11.6% in the short-term. But, over a 10-year time horizon, recidivism among the released cohort would diminish the magnitude of the reduction to about 4.1%. Even if none of the inmates in the released cohort returned to custody, LTC need in 2017 would remain over 4500 beds.

Exhibit G

Abt Associates Inc.

Update to the California Prison Long-term Care Needs Assessment: Impact of Prison Population Reductions

Analysis Brief

Cambridge, MA
Lexington, MA
Hadley, MA
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Chicago, IL

January 5, 2009

Prepared for
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Chief Executive Officer for Medical Services
California Prison Health Care Receivership
1731 Technology Drive, Suite 700
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Prepared by
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I. Introduction

The Receivership plans to construct new long-term care (LTC) facilities for inmates with chronic illness and physical impairment. To assure that building plans were consistent with needs, the Receivership contracted with Abt Associates to estimate and project LTC needs over a ten-year time horizon. Abt Associates based prevalence estimates on a census of inmates in medical beds in all 33 California prisons and a probability sample of other inmates in nine of these prisons. According to that study, in 2007, nearly 3000 California inmates needed LTC (Table 1). Relying on California Department of Corrections and Rehabilitation (CDCR) projections of inmate population by age category, Abt Associates projected that demands for long-term care would increase steadily to nearly 5300 inmates by 2017.

The aging of the inmate population and the strong association between age and long-term care need (Figure 1) were identified as the underlying drivers of the projected growth in long-term care need among the prison population in the next 10 years.

Table 1: Original Estimates of Need for Long-Term Care Beds in the California State Prison System in 2007*

Sub-population	Level of Long-term Care**			
	Specialized GP (number of inmates)	**Low Acuity (number of inmates)**	**High Acuity (number of inmates)**	**TOTAL (number of inmates)**
Medical Beds - all prisons	183	92	91	366
California Medical Facility	173	43	18	233
8 other sampled facilities	567	125	46	738
24 unsampled facilities	934	208	77	1,219
TOTAL- All prisons , unadjusted	1,856	469	232	2,557
Adjustment Factor for unsampled stratum				1.19
TOTAL – All prisons, adjusted for LTC need within unsampled stratum	**2174**	**541**	**259**	**2974**
†95 percent confidence Interval (Lower Bound, Upper Bound)				(2713, 3233)

*Based on a population of 135,863 that does not include ~28,000 inmates in reception centers or ~7500 in community corrections. *See original report for methodological detail*

**Levels of care: From lowest to highest level of care, these are 1) specialized general population (equivalent to sheltered housing or congregate living), 2) low acuity medical beds (equivalent to assisted living), and 3) high-acuity medical beds (equivalent to skilled nursing beds).

†95% CI = E(X) +/- 1.96 * SQRT (Var(X)) where X is the estimated number of beds needed

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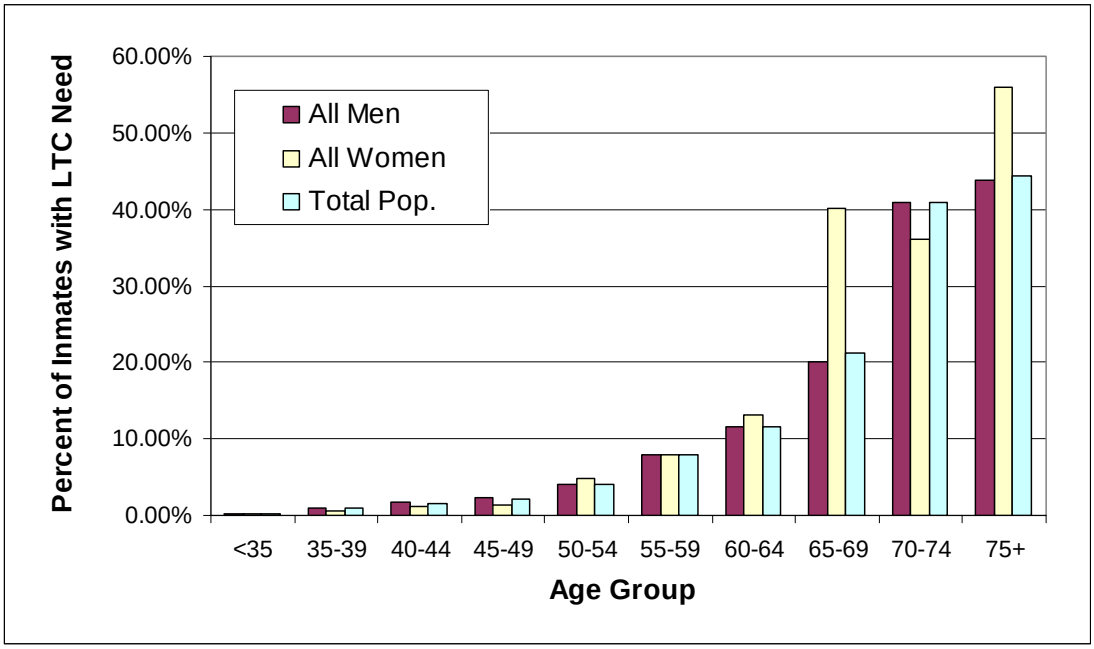

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All	1.73%	132,828 (100%)	2286.1

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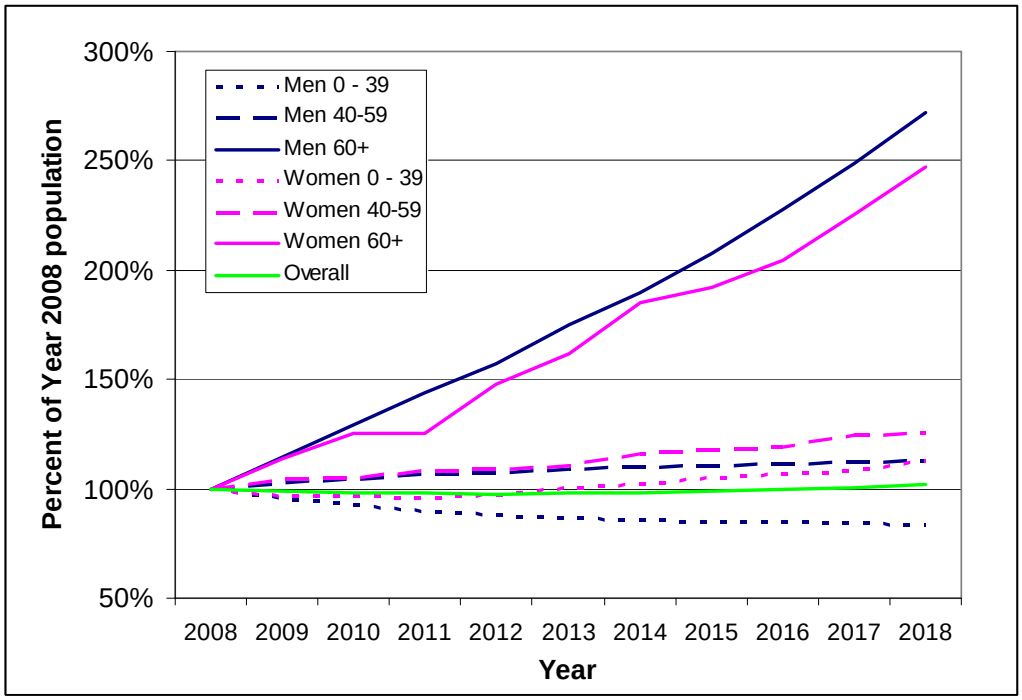
of older inmates (age 60 and older) is expected to grow while the youngest age group is expected to decline.

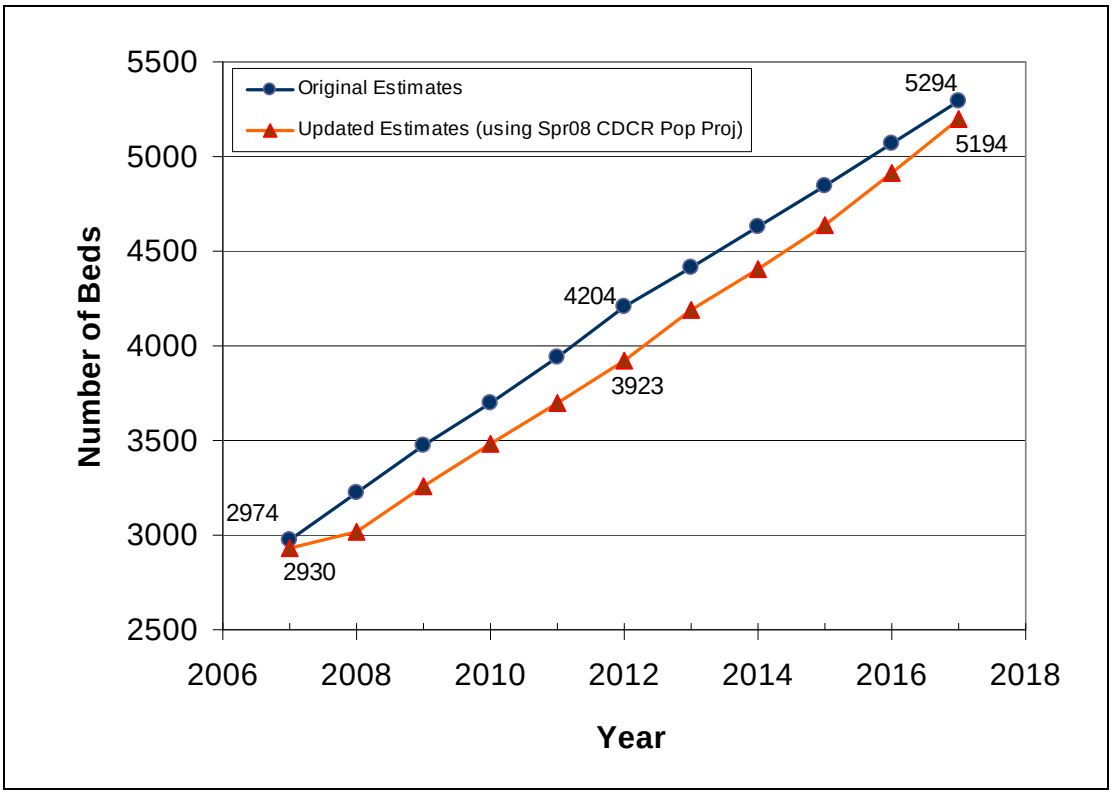
Figure 2: Revised Estimate of Population Growth by Age Category



Recalculating age-group specific LTC prevalence estimates and applying these estimates to the updated age- and sex- structured population projections yielded new estimates of future LTC need that are somewhat lower than originally reported. Starting from a lower level (due to the revised model that accounts for custody level as discussed in Section I above), LTC need grows over the next 6-7 years at a slightly slower rate than predicted in the original model (Figure 3). By 2012, LTC need reaches 3923 beds, as compared to 4204 beds in the original analysis. By 2017, LTC need is projected to reach 5194—100 fewer beds than originally predicted.

projected trends. In this update, we used the extended Spring 2008 projections from CDCR population projection model directly.

Figure 3: Projected Need for Long-term Care Beds (2007-2017) Using CDCR Spring 2008 Population Projections



IV. Impact of a one-time mass release policy

Specification of Release Policy

Using the updated model, we consider the impact of two alternative policies for the one-time release of Custody Level I and II inmates in 2009. The policies only differed in the number of inmates released; either 20,000 or 50,000.

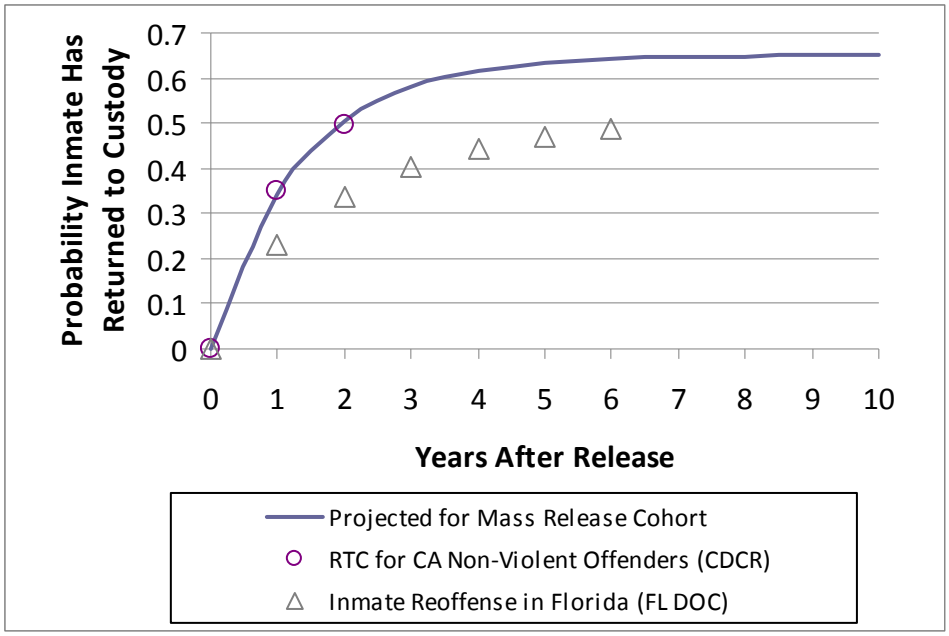
Because of the differences in LTC need across custody level, *ceteris paribus*, releasing Level I inmates can be expected to have less impact on LTC need than releasing inmates at higher custody levels. Likewise, releasing Level II inmates will reduce LTC need the most. We assumed that any of the approximately 60,000 inmates at Custody Level I or II had an equal chance of being released under the proposed policy. If, in fact, Level I inmates are more likely to be released, then the reduction in LTC need may not be as large as we predicted. Likewise, if, within each custody level, *younger* inmates are more likely to be released under the proposed policy, then our assumption may cause us to further overestimate the reduction in LTC need.

It is likely that some portion of the cohort of released inmates will return to custody during the time horizon of the analysis. CDCR data on 1- and 2-year recidivism rates shows that 35% and 50% of inmates whose principal commitment offense is non-violent[2] were returned to custody within 1 and 2 years,

[2] We assumed the following offenses were non-violent: forgery/fraud, other property, controlled substance (CS) possession, CS possession for sale, CS sales, CS manufacture, CS other, hashish possession, marijuana possession, marijuana possession for sale, marijuana sales, marijuana other.

respectively. Data from Florida[3] and other states indicate that recidivism can occur after 2 years following release. We modeled each policy with and without recidivism among the mass release cohort. For the recidivism scenario, we assumed that, irrespective of long-term care need, 65% of the released inmates would return to custody within 10 years at a rate of 0.75 per released inmate per year. At this rate, the 1- and 2-year recidivism rates match those observed for non-violent California paroles with non-violent primary commitment offenses. If, in fact, fewer inmates from the mass cohort are returned to custody, or these inmates return to custody at a slower rate, then our assumption will cause us to underestimate the reduction in LTC need due to the mass release.

Figure 4: Probability of Returning to Custody



Results

A one-time release policy targeting inmates at Custody Level I and II can be expected to reduce the number of LTC beds roughly in proportion to the reduction in the overall population size. The reduction of 20,000 inmates in 2009 represents 15.5 percent of the estimated general population not in reception centers, community corrections or medical beds. The predicted reduction in LTC need by 390 inmates represents 12.0 percent of the LTC need among this population (Table 4). Likewise, the reduction of 50,000 inmates in 2009 represents 38.8 percent of the estimated general population not in reception centers, community corrections or medical beds. The predicted reduction in LTC need by 939 inmates represents 28.8 percent of the LTC need among this population (Table 4).

[3] http://www.dc.state.fl.us/pub/recidivism/2001/exec.html

Table 4: Reduction in Population and Long-Term Care Inmates Due to a One-time Mass Release of Custody Level I and II inmates from General Population in 2009*

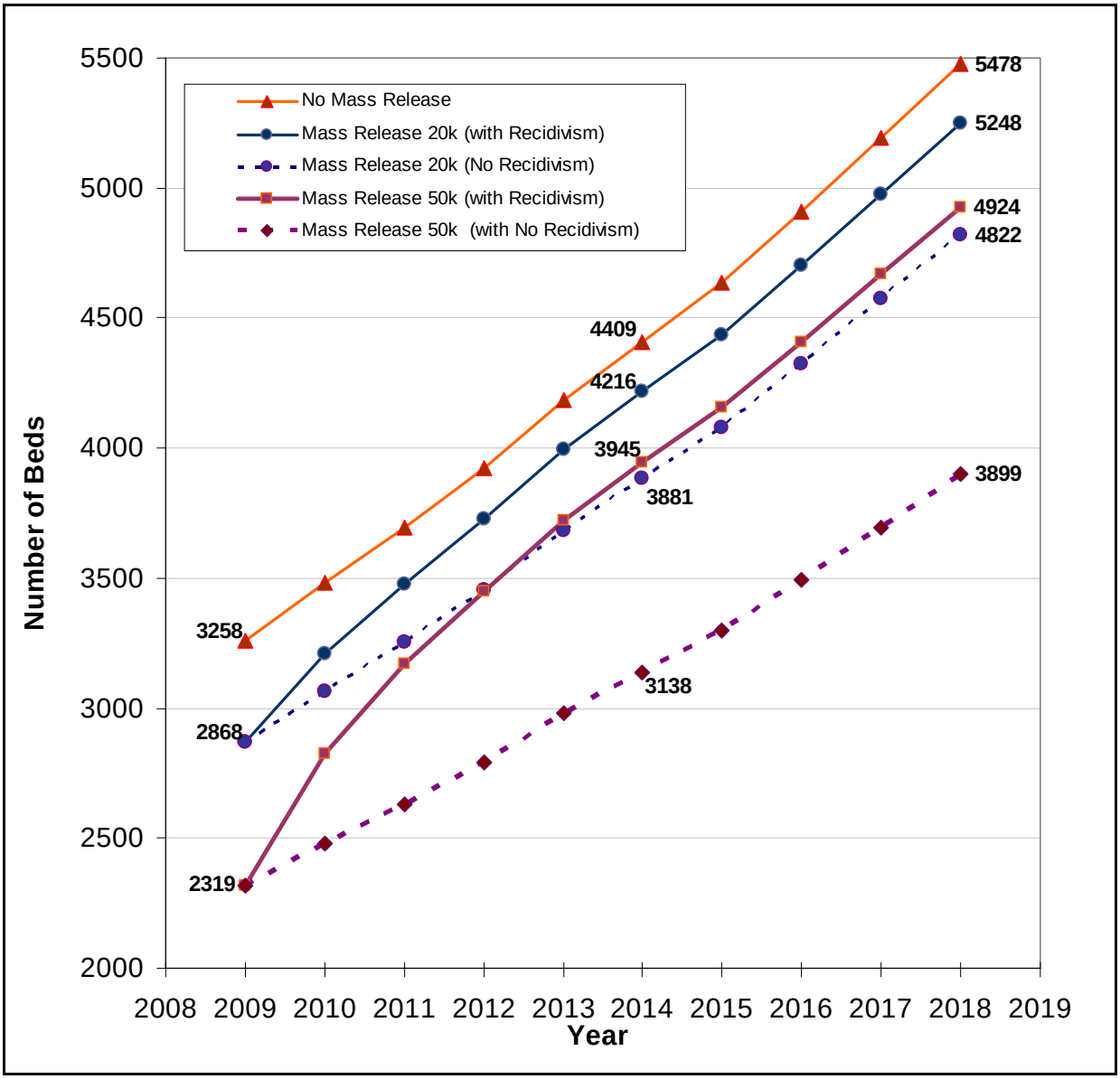
RELEASE OF 20,000						
	Population			LTC Need		
Custody Level	Projected w/o Release*	Reduction	Remaining	Projected w/o Release*	Reduction	Remaining
I	22,358	7,643	14,715	306	105	201
II	36,145	12,357	23,789	834	285	549
Total Level I&II	58,504	20,000	38,504	1,140	390	750
All Levels	128,910	20,000	108,910	3,258	390	2,868
RELEASE OF 50,000						
Custody Level	Population			LTC Need		
	Projected w/o Release*	Reduction	Remaining	Projected w/o Release*	Reduction	Remaining
I	22,358	19,109	3,929	306	252	54
II	36,145	30,891	6,353	834	687	147
Total Level I&II	58,504	50,000	10,282	1,140	939	200
All Levels	128,910	50,000	78,910	3,258	939	2,319

*Total population in 2009 not including reception centers or community corrections is estimated to be 128,910.

To assess the impact over a 10-year time horizon beginning in 2009 under the recidivism scenario, we assumed that 65% of the released cohort of inmates would eventually return to custody at a rate of 0.75 per person per year. We also assumed that LTC would develop with age among the mass release cohort at the same rate experienced by the unreleased inmates. Under these assumptions, if 20,000 inmates were mass released in 2009, LTC need would be reduced by 390 from 3258 to 2868 (Figure 5). Each subsequent year, the level of LTC would be lower than if no mass release occurred. However, the rate of growth in LTC would be significantly higher in the first few years as a portion of the release cohort returns to custody. After the first 5 years, the number of inmates needing LTC will be approximately 200 beds lower under the mass release scenario compared to the updated estimates with no mass release. To illustrate the impact of recidivism, we also show, in Figure 5, the trend for LTC bed need under the assumption that no inmates from the mass release cohort return to custody. In this scenario, by 2018, LTC need is reduced to 4822, or 656 less than projected if there were no mass release.

If 50,000 inmates were released, then in 2009, the number of inmates needing LTC would drop by 939 from 3258 to 2319. If none of the mass released inmates returned to custody, then by 2018 there would be nearly 1600 fewer inmates needing LTC. However, if the release cohort returns to custody as described above, the number of inmates needing LTC over a 5-10 year horizon will only be about 550 fewer than if there had not been a mass release.

Figure 5: Projected Need for Long-term Care Beds (2009-2018) after a one-time release of Custody Level I & II Inmates



V. Discussion

Accounting for custody level in the estimation of current LTC need has a small impact, reducing our original estimate by 1.5% from 2974 to 2930. Updating the CDCR population projections on which LTC projections are based has a more substantial impact. The Spring 2007 CDCR Projections used for the original analysis predicted an increase of 1.5% to 1.75% per year. In contrast, the Spring 2008 CDCR projections show 4.5% decrease in prison population by 2012, followed by a rise back to 2007 levels by

2017. We estimate that these reductions in projected overall prison population growth rate may reduce LTC need by 281 beds in the next 5 years compared to our original estimates.

The overall population decline is due to fewer intakes, primarily among younger inmates. As a result, LTC need will decline only modestly over the medium term (10 year time horizon) in response to lower rate of intakes. The "stock" of people already in prison is going to continue to age. Of course, those that eventually get released may have a lower probability of being re-incarcerated, but the effect on LTC need will be small.

This logic also applied to the mass release policy. If the release criteria is only based on custody level, then the impact on LTC will be roughly proportional to the reduction in overall population size, as we have shown. However, if older or sicker inmates are more likely to be release under the policy—either by coincidence or by design--then the impact on LTC need could be substantial larger.

Finally, in order to have a lasting impact on LTC need, released inmates must not return to custody. If released inmates return to custody at rates that have been observed historically, the prison population reduction may be largely transient.

A mass release of 20,000 Level I and II released inmates may reduce LTC by about 390 beds and a mass release of 50,000 inmates may reduce LTC by about 940 beds. But, assuming that released inmates return to custody at rates that are consistent with those observed historically by CDCR, most of the initial drop in LTC need would only be temporary. The released cohort would continue to develop chronic disease and functional impairment as they age. Over 10 years, LTC need in the 20,000 inmate cohort would grow to 655 persons and LTC need in the 50,000 inmate cohort would grow to 1579 persons. If 65% of the released cohort returns to custody over a 10-year period, much of the reduction in demand for LTC in prisons will be transient. However, a release of 20,000 inmates can be expected to permanently reduce the need for LTC beds by at least 200 and a release of 50,000 can be expected to permanently reduce the need for LTC beds by about at least 500.

It is reasonable to expect that individuals needing LTC need are less likely to return to custody because functional impairment limits their ability or desire to commit crimes. However, there is no data available to estimate the relationship between health status and recidivism. Therefore, we chose estimate a “with recidivism” case in which individuals in the mass release cohort had the same probability of returning to custody regardless of their health status. This case was compared to a scenario in which there was no recidivism among the released cohort. If individuals needing LTC need are less likely to return to custody (e.g. because functional impairment limits the ability or desire to commit crimes) then the impact of the mass release policies on the demand for LTC need in prison will likely fall somewhere between the “with recidivism” and “without recidivism” cases we modeled. For example, if one were to assume that no individual from the mass release cohort with LTC need will be re-incarcerated, then the projected number of inmates needing LTC would be very close to the “without recidivism” case. In that case, the only individuals from the mass release cohort who would eventually need LTC in prison would be those who return to custody *before* they develop LTC need. However, if a portion of individuals from the mass release cohort do commit new crimes despite their functional impairments or are re-incarcerated for technical violations or new convictions for crimes committed before they needed LTC, then the demand for LTC in prison will be higher.

Even after accounting for differences in LTC prevalence by custody level and updating the underlying CDCR population projections to reflect newly anticipated population trends, the burden of LTC among California inmates remains high. Current need still remains over 2900 beds and is expected to increase to 3923 by 2012 and 5194 by 2017. A one-time mass release of 20,000 Level I and II inmates might reduce total LTC need further--by about 12 percent in the short-term. But, over a 10-year time horizon, recidivism among the released cohort may diminish the magnitude of the reduction to as little as 4 percent. Even if none of the inmates in the released cohort who need LTC returned to custody, the demand for LTC in prison in 2018 would remain over 4800 beds. A one-time mass release of 50,000 Level I and II inmates would reduce total LTC need substantially--by 29 percent in the short-term. But, over a 10-year time horizon, recidivism among the released cohort may diminish the magnitude of the reduction to as little as 10 percent. Even if none of the inmates in the released cohort who need LTC returned to custody, LTC need in 2018 would by 3900 beds.

Exhibit H

Analysis of Year 2007 Death Reviews

November 3, 2008

Kent Imai, MD

California Prison Receivership

Table of Contents

I. INTRODUCTION 3

II. DEATH REVIEW PROCESS 3

A. Definitions 5

B. Taxonomy for Lapses in Care 6

C. Limitations of the Death Review Process 6

D. Impact of Preventability 7

III. FINDINGS 8

A. Preventability 8

B. Non-Preventable Deaths 9

C. Possibly Preventable Deaths 10

D. Preventable Deaths 12

IV. DISCUSSION 14

A. Lapses in Care and Preventable Death 14

B. Trends in Death Rate and Preventability 16

C. Trends in the Attribution of Preventability 18

D. Interventions to Decrease Preventable Deaths 18

E. Other Areas of Potential Improvement 24

F. Conclusion 26

I. Introduction

The mortality rate per 100,000 California prison inmates has decreased from 248.6 in 2006 to 230.3 in 2007 to 218.2 in January-June 2008. The decrease is even more impressive when taking normal seasonal variation into account. The January-June rates were 270.5 in 2006, 245.4 in 2007, and 218.2 in 2008. The number of clearly preventable deaths has also decreased.

The major clinical impact felt throughout the system since the beginning of the Receivership has been from improvements in the number and caliber of healthcare professionals. About half of the primary care physicians and over a third of the nurses working for California Prison Health Care Services (CPHCS) have been recently recruited. Most of the Receiver's other interventions that aim to improve the quality and cost-effectiveness of healthcare services are still in early, pilot, or planning stages.

The year 2007 death reviews also revealed at least 292 extreme departures from the standard of care. Refinements to the death review process focused on classifying these standard-of-care departures into a taxonomy of 14 lapses in care. Use of the taxonomy has begun to inform responses to individual provider error as well as systemic improvement strategies. This report concludes with interventions that could mitigate each of these 14 lapses in care.

II. Death Review Process

Clinician members of the Clinical Support Unit (CSU), all of whom have been trained in the process of death review, prepare initial Death Review Summaries of each death in the California Department of Corrections and Rehabilitation (CDCR). CSU physicians are all either board-certified in internal medicine or family medicine. Mid-level reviewers (nurse practitioners or physician assistants) also participate; their reviews are closely examined and approved by one of the physician members of the unit.

Each Death Review Summary is based on a reading of the patient's available CDCR medical record, which may include discharge summaries, specialist reports, and other documentation generated outside the institution. Using a standardized template, the reviewer assesses the patient's last 12 months of medical care during his/her period of incarceration. (For suicides, the reviewer assesses the entire patient record.) The purposes of this extensive review of each inmate's death are to:

- Determine the cause of death, using autopsy findings when available;
- Determine the preventability or non-preventability of the death;
- Identify significant departures from the community standard of care attributed to an individual provider;
- Identify significant health care system lapses in care; and
- Refer for appropriate action, situations in which individual or systemic lapses are noted.

Every completed Death Review Summary is presented by the reviewing clinician to the Death Review Committee (DRC), a multidisciplinary group chaired by one of the three Regional Medical Directors. The DRC is multidisciplinary. Members of the DRC are the Statewide Medical Director, the three Regional Medical Directors, the three Regional Directors of Nursing, the Chief Medical Officers of the Clinical Support Unit, other healthcare administrators, nursing consultants and correctional officers.

The DRC may make referrals to several areas. For facility systemic lapses, referral is usually made to the local healthcare manager. For nursing lapses, referral is made to the Department of Nursing. In the case of individual provider lapses occurring while the patient is an outpatient, the case may be referred to the CPHCS Peer Review Subcommittee or directly to the Professional Practices Executive Committee (PPEC), the parent peer review committee for CPHCS. Non-CPHCS specialty consultants are notified of adverse peer review findings or asked to explain their decision-making. Occasionally another specialist may be asked to review the care provided. For lapses in care occurring in community hospital settings, cases may be referred to the Chief of Staff of the hospital in question for consideration within their internal peer review process.

Since the creation of the Receivership in 2005, the death review process has focused on identifying and sanctioning unsafe individual practitioners. Through July 2008, PPEC has taken adverse action on a total of 85 practitioners. The majority of these actions were initiated by a death review.

The Receiver has also increased salaries and diligently recruited new healthcare professionals. CPHCS hired 172 new primary care physicians between August 1, 2007 and July 31, 2008; all are board-certified in internal medicine or family medicine as required by the new credentialing criteria. This figure represents 47 percent of the 366 authorized positions in the physician pool. During this same period (August 1, 2007 through July 31, 2008), CPHCS added 488 registered nurses and 533 licensed vocational nurses to the prison healthcare delivery system. Of the total pool of authorized nursing classifications, 35% were hired during this 12-month period.

When the Death Review Committee refers an individual provider to PPEC in response to practice concerns, PPEC may choose to conduct a pattern of practice (POP) review to evaluate the performance of the provider. This POP review is a detailed assessment using a large sample of patients and health care interactions (usually 30-50 patient charts, including the index death case and any other deaths in which the clinician may have been involved). The POP review evaluates adherence to a community standard of care. After considering evidence from this and other sources (such as the Chief Medical Officer, Chief Physician and Surgeon, and the provider), PPEC will take one of several actions, including, but not limited to:

1. Summary suspension of some or all clinical privileges;
2. Temporary restriction of practice, pending an even more complete review of the clinician's pattern of care;
3. A program of remediation (for example, taking a course in an area of clinical deficiency, followed by a period of monitoring); or
4. No further action.

Beginning in late 2006, each death was assessed for three levels of preventability: possibly preventable, preventable, or non-preventable. The death review template was revised to direct reviewers to assess and assign preventability whenever possible. The "Analysis of CDCR Death Reviews 2006," with assessment of preventability now available, offered a number of recommendations to reduce preventable deaths.

The death review process is also intended to identify significant lapses in the processes of care occurring in each death. Significant lapses in care have been identified in all types of deaths, whether preventable or non-preventable. In late 2007, a taxonomy was developed for these lapses (or departures from the standard of care), so that reviewers might be able to use a common "language" when discussing preventable deaths and develop plans of action designed to mitigate such lapses in care. Beginning in 2008, this taxonomy for lapses in care was incorporated into the Death Review Template. The Receiver and CPHCS leadership have begun to use the taxonomy to systematically address the deficiencies in care, with the ultimate goal of reducing the burden of preventable deaths and unnecessary suffering.

Also in 2008, the death review process began to incorporate the principles of "just culture."
Just culture assessments distinguish "knowing violations" from three classes of human fallibility: human error (inadvertent), at-risk conduct (taking shortcuts leading to increased risk), and reckless conduct (choosing to put someone in harm's way). The overarching recommendation from last year's deaths analysis remains compelling: "The CDCR must create a culture of patient safety in which clinicians readily identify mistakes and system vulnerabilities and in which all staff share in the responsibility for optimal patient outcomes."[1]

A. Definitions

Non-preventable: In the judgment of the reviewer, the medical health care system and individual practitioners probably would not have been able to prevent the patient's death. (The majority of "natural – expected" deaths fall in this category. Most homicides, suicides, and drug overdoses, although theoretically preventable, are, for purposes of this analysis, placed in the "non-preventable" category).

Preventable: In the judgment of the reviewer, better medical management or a better system of care would likely have prevented the patient's death.

Possibly preventable: In the judgment of the reviewer, better medical management or a better system of care may have prevented the patient's death.

Extreme departure from the standard of care: A lapse in care that a reasonable and competent clinician would not render under the same or similar circumstances.

Simple departure from the standard of care: A lapse in care that a reasonable and competent clinician might render under the same or similar circumstances

[1] Imai K. Analysis of CDCR Death Reviews 2006. August 20, 2007. Found at: www.cphcs.ca.gov/resource.aspx

B. Taxonomy for Lapses in Care

The Death Review Committee assigns extreme departures from the community standard to one of the following 14 lapses in care:

1. Failure to recognize important symptoms/signs. Failure to recognize, evaluate and treat clinical "red flags." Examples include acute chest pain in high risk patients, shortness of breath, abdominal pain, dizziness, abnormalities of vital signs, low oxygen saturation, acute confusion, weight loss, and increased frequency of medication use.
2. Failure to follow clinical guidelines. Failure to follow established guidelines for the screening, evaluation, monitoring and/or management of specific conditions, such as asthma, hepatitis C, diabetes, and chronic pain.
3. Delay in access to care. Delays in access to care of sufficient duration to result in harm to the patient. These may occur in any of the following areas or functions: triage, same day, primary care clinic, chronic care or specialty care/procedure.
4. Failure to identify/follow-up abnormal test results.
5. Failure of appropriate provider-to-provider communication, including specialty consultation, patient transfers between different levels or sites of care and other handoffs including shift changes.
6. Fragmentation of care. Episodic care provided in the absence of a primary care system; important elements of the patient's clinical picture are missed and the individual provider does not take responsibility for the patient's outcome.
7. Surgical or procedural complications resulting in iatrogenic injury.
8. Medication prescribing error. This includes failure to prescribe the indicated medication for a clinical condition, to do appropriate monitoring, or to recognize drug interactions.
9. Medication delivery error. Delays in patients receiving critical medications, or patients receiving the wrong medication.
10. Practicing outside the scope of one's professional competence.
11. Failure to supervise mid-level (nurse practitioner or physician assistant) care. This includes failure of assigned supervisors/mentors to be readily available, as well as managerial failure to arrange appropriate supervision.
12. Failure to communicate effectively with the patient.
13. Patient non-adherence with suggestions for optimal care.
14. Delay/failure in emergency response. Includes failure to follow emergency response protocol as well as delays in activation.

C. Limitations of the Death Review Process

Reviewers face significant limitations on their ability to conduct high quality death reviews, including:

Medical record. CPHCS does not have electronic medical records. The typical patient health record is not easily navigated and not well organized. The physician portion of the record includes handwritten progress notes that may suffer from brevity, poorly documented reasoning and illegible handwriting. The health record is often incomplete, missing critical recommendations from consultants or records of off-campus procedures, emergency room visits and hospitalizations. These challenges plague CPHCS health care providers during the process of care.

Autopsies. The majority of deaths, as in the non-CPHCS world, do not trigger autopsies. This makes clinical closure elusive, especially in cases of sudden cardiac arrest. Nevertheless, knowledge of the cause of death should not alter recognition of and response to serious lapses in care. Furthermore, autopsies may only help to determine whether that lapse led to an adverse outcome.

Preventability. As discussed in last year's deaths analysis, there are limitations in attributing preventability. In one published study, for example, investigators in the Veteran's Administration had fourteen board certified internal medicine specialists, trained in implicit chart review, analyze 383 hospital deaths. In this study, 88 or 23% of the deaths were rated as possibly preventable by optimal care, and another 23 or 6% were rated as preventable. Inter-rater reliability for these ratings, however, was quite low at 0.34. The authors of the study noted that, to a large extent, "preventability is in the eye of the beholder."[2]

D. Impact of Preventability

In this 2007 deaths analysis, there was no attempt to estimate the impact of preventability in terms of life expectancy. The preventable death of a young asthmatic, for example, may be more consequential in terms of years of life lost than the preventable death of an 80-year-old patient with multiple chronic illnesses.

In mid-2008, the death review committee began asking reviewers to answer three additional questions intended to add nuance to their judgments.

1. How likely was it that the patient's death could have been prevented or delayed by more optimal health care?
2. How likely was it that the patient's death was caused by or hastened by health care interventions?
3. How much longer would the patient likely have lived if the death had been prevented or delayed?

[2] Hayward RA, Hofer TP. Estimating Hospital Deaths Due to Medical Errors: Preventability Is in the Eye of the Reviewer. *JAMA*. 2001, 286; 4, 415.

III. Findings

A. Preventability

In 2007 there were 397 California inmate deaths. For purposes of this report, two reviews were unavailable, leaving 395 subject to analysis here. The vast majority of deaths, 83 percent (327 cases) were identified as non-preventable (Figure 1). Table 1 shows preventability by the type of death.

Figure 1. California inmate deaths, 2007

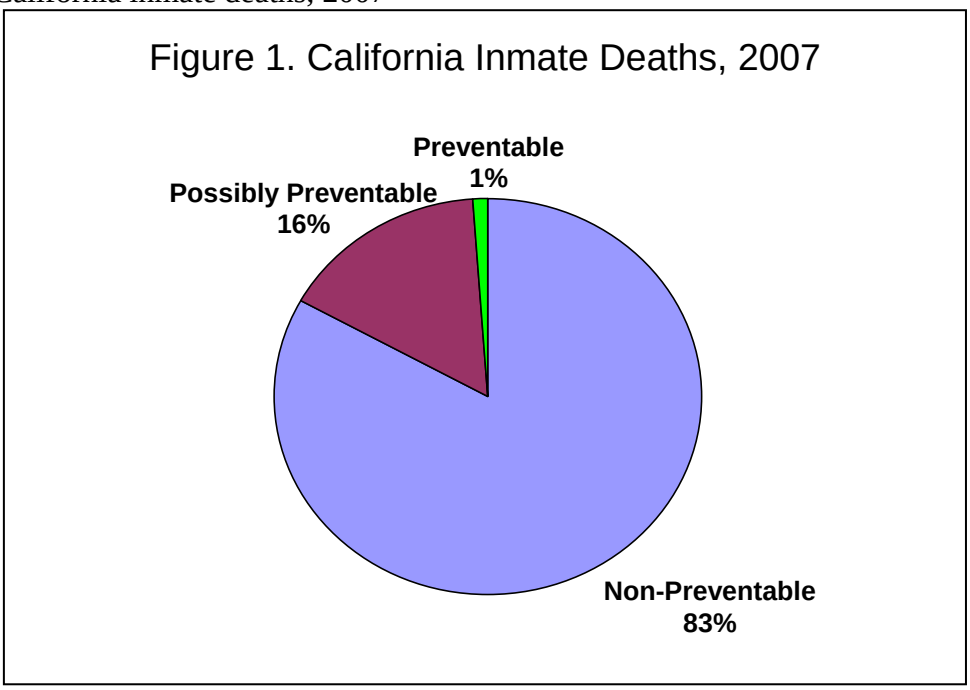


Table 1. Type of death and preventability.

	Non-Preventable	Possibly Preventable	Preventable
Suicide	33	1	-
Homicide	21	1	-
Accidental injury to self	9	2	-
Natural – expected	198	19	1
Natural – unexpected	66	42	2
Totals	327 (83%)	65 (16%)	3 (1%)

B. Non-Preventable Deaths

Table 2 shows the causes of non-preventable death among California inmates in 2007. Cancer and end stage liver disease (all but a few secondary to chronic hepatitis C) together were responsible for 158 (48 percent) of the 327 cases.

Table 2. Causes of non-preventable death.

Cases	Cause of Death
104	cancer
54	end stage liver disease
33	suicide
22	sudden cardiac arrest
22	homicide
12	AIDS
9	stroke
9	drug overdose
7	pneumonia
7	acute myocardial infarction
7	congestive heart failure
5	end stage renal disease
3 each	coccidioidomycosis (valley fever), chronic obstructive pulmonary disease , dementia, pulmonary fibrosis
2 each	bowel infarction, cardiomyopathy, endocarditis, Parkinson disease, sepsis, urosepsis
1 each	amyotrophic lateral sclerosis, aortic aneurysm, coronary artery disease, cerebellar degeneration, pancreatitis, pulmonary embolism, systemic lupus erythematosis, subdural hematoma
4	unable to be determined
327	**Total**

Table 3 shows the number of extreme-departure lapses in care for non-preventable deaths using the 14-lapse taxonomy. In 161 (49 percent) of these 327 non-preventable deaths, no serious departures in care were noted. Many of these cases were cited for excellent and compassionate care. In the remaining 166 deaths, however, there were 172 lapses identified. Note that 1) a patient could suffer from more than one type of lapse and 2) if a specific type of lapse occurred more than once for a patient, it was counted only once.

Table 3. Types of lapses in care (extreme departures) for non-preventable deaths.

Lapses	Types of Lapses in Care (Extreme Departures)
52	#1 - Failure to recognize, identify or adequately evaluate important symptoms or signs
19	#2 - Failure to follow established guidelines for evaluation and/or management of specific condition
31	#3 - Delay in access to care sufficient to result in harm to the patient
13	#4 - Failure to adequately pursue abnormal test results
4	#5 - Failure of provider-to-provider communications including botched handoffs
10	#6 - Fragmentation of care such that individual responsibility for patient is waived
1	#7 - Surgical/procedural complication resulting in iatrogenic injury
14	#8 - Medication prescribing error
5	#9 - Medication delivery error
4	#10 - Practicing outside the scope of one's capabilities
6	#11 - Unsupervised mid-level (nurse practitioner or physician assistant) care
0	#12 - Failure of communication with patient
5	#13 - Patient non-adherence with recommendations for care
3	#14 - Delay in emergency response or failed to follow emergency response protocol
5	Other (including unavailability of medical record)
172	**Total number of extreme departure lapses (many cases had more than one extreme departure)**

C. Possibly Preventable Deaths

In 2007, 65 deaths were identified as possibly preventable. Table 4 shows the causes of death and Table 5 shows the lapses in care noted in these 65 cases.

Table 4. Causes of possibly preventable deaths.

Cases	Cause of Death
14	sudden cardiac arrest
7	cancer
6	end-stage liver disease
5	stroke
3 each	pulmonary embolism, sepsis
2 each	AIDS, aneurysm (aortic), congestive heart failure , coccidioidomycosis, pneumonia, suicide
1 each	acute myocardial infarction , bowel perforation, coronary artery disease (CAD), cardiomyopathy, colitis, chronic obstructive pulmonary disease (COPD), diabetic ketoacidosis , drug overdose, ependymoma, homicide, metabolic acidosis, spinal stenosis, ulcer, urosepsis, volvulus
65	**Total**

Table 5. Types of lapses in care (extreme departures) for possibly preventable deaths.

Lapses	Types of Lapses in Care (Extreme Departures)
43	#1 - Failure to recognize, identify or adequately evaluate important symptoms or signs
6	#2 - Failure to follow established guidelines for evaluation and/or management of specific condition
20	#3 - Delay in access to care sufficient to result in harm to the patient
5	#4 - Failure to adequately pursue abnormal test results
5	#5 - Failure of provider-to-provider communications including botched handoffs
7	#6 - Fragmentation of care such that individual responsibility for patient is waived
3	#7 - Surgical/procedural complication resulting in iatrogenic injury
7	#8 - Medication prescribing error
3	#9 - Medication delivery error
1	#10 - Practicing outside the scope of one's capabilities
3	#11 - Unsupervised mid-level (nurse practitioner or physician assistant) care
0	#12 - Failure of communication with patient
0	#13 - Patient non-adherence with recommendations for care
4	#14 - Delay in emergency response or failed to follow emergency response protocol
2	Other (including unavailability of medical record)
109	**Total number of extreme departure lapses (many cases had more than one extreme departure)**

D. Preventable Deaths

In 2007, three cases were identified as preventable. Table 6 shows the causes of death and Table 7 lists the eleven lapses in care observed in the three cases.

Table 6. Causes of preventable death.

Cases	Cause of Death
1	drug induced hepatitis
1	adrenal insufficiency, disseminated cocci
1	pulmonary embolism
3	**Total**

Table 7. Types of lapses in care (extreme departures) in preventable deaths.

Lapses	Types of Lapses in Care (Extreme Departures)
1	#1 - Failure to recognize, identify or adequately evaluate important symptoms or signs
3	#2 - Failure to follow established guidelines for evaluation and/or management of specific condition
1	#3 - Delay in access to care sufficient to result in harm to the patient
1	#4 - Failure to adequately pursue abnormal test results
1	#5 - Failure of provider-to-provider communications including botched handoffs
0	#6 - Fragmentation of care such that individual responsibility for patient is waived
0	#7 - Surgical/procedural complication resulting in iatrogenic injury
1	#8 - Medication prescribing error
2	#9 - Medication delivery error
0	#10 - Practicing outside the scope of one's capabilities
0	#11 - Unsupervised mid-level (nurse practitioner or physician assistant) care
1	#12 - Failure of communication with patient
0	#13 - Patient non-adherence with recommendations for care
0	#14 - Delay in emergency response or failed to follow emergency response protocol
11	**Total**

It is instructive to look at each of these cases in some detail. As seen in the case examples below, more than one extreme departure lapse occurred in each of the cases. A single lapse was not enough to result in a patient's death, but multiple lapses lined up to produce an adverse outcome.

Case 1. Drug-induced hepatitis.

A 40-year-old Spanish-speaking patient was prescribed isoniazid (INH) for a poorly documented "positive" tuberculin skin test (**medication prescription error).** Baseline liver functions were ordered but apparently not done (**failure to follow clinical guidelines**). One month later, a liver function panel showed elevation of the liver enzyme ALT to 4 times normal. This report was not noted until two months later (**failure to identify abnormal lab result**), when the patient presented with dark urine and jaundiced eyes that had been present for at least one month (**failure to communicate effectively with patient about the warning signs of INH hepatitis**). The patient died three weeks later of INH-induced hepatitis (several notations indicated the patient was "Spanish speaking only" yet another note indicated "patient understands English").

Case 2. Acute adrenal insufficiency in a patient on high dose continuous steroids.

A 62-year-old patient died after abrupt cessation of high dose dexamethasone which he had been receiving continuously for 4 ½ months. On 4/3/07, he had a 48-hour delay in evaluation for high fever, chest pain and night sweats (**delay in access to care**). The

initial evaluation consisted of chart orders without a clinical note, and he was then seen several times in clinic with abnormal chest x-rays, shortness of breath, and low oxygen saturation (88-91%) but was managed as an outpatient (**failure to properly evaluate/manage "red flag' symptoms and signs**). Coccidioidomycosis pneumonia and pneumothorax were diagnosed on 4/09/07 and he was started on antifungal therapy. He was in hospital continuously and had lumbar laminectomy on 5/25/07. High dose dexamethasone was prescribed post operatively for severe pain and weakness, and this dose was not tapered (**failure to follow clinical guidelines for prescribing steroids for pain**). He remained in the hospital for 4 ½ months after the laminectomy because of post-operative staphylococcal wound infections. During his prolonged hospital stay, a cardiologist evaluated another patient with the same last name and for several days the patient received medication, atenolol, intended for the other patient (**medication delivery error**) without adverse consequence. When discharged back to prison on 10/09/07, neither the transfer note nor the phone conversation between the discharging physician and the accepting physician indicated his prolonged course of high dose dexamethasone (**failure of provider-to-provider communication at time of handoff).** He did not receive dexamethasone on return to prison on 10/9/07. Two days later he developed hypotension and tachycardia, was hospitalized (at a different hospital from which he had been discharged), intubated, received vasopressors and high dose antibiotics but no corticosteroids and died as a consequence of unrecognized acute adrenal insufficiency.

Case 3. Pulmonary embolism.

A 39-year-old patient died of preventable pulmonary embolism. He was placed in 5-point restraints after ingesting razor blades. Restraints were ordered because he was having auditory hallucinations directing him to hurt himself. The patient reported he had failed to receive his antipsychotic medication for a few days (**medication delivery error**). The restraints were re-ordered for five days continuously despite indication that the patient was quiet and cooperative during this period (**failure to follow clinical guidelines - medically non-indicated restraints per restraint protocol**). Range of motion (therapy) was ordered but not documented to have been given at the ordered frequency. The patient had sudden cardiac arrest and autopsy showed massive pulmonary embolus at the bifurcation of the pulmonary artery.

IV. Discussion

A. Lapses in Care and Preventable Death

Predictability and preventability are two different concepts. It is difficult for even trained, highly qualified physicians to determine that a death is *preventable* using retrospective case review. To a large extent, "preventability is in the eye of the beholder." It is easier to identify *predictable* deaths, based on cause of death (patients with certain types of conditions such as metastatic or high grade cancer, congestive heart failure, or multiple chronic diseases, commonly believed to shorten life expectancies).

In the CPHCS death review process, reviewers are asked to identify all lapses in care, and to grade each lapse as either a "simple departure" or a "serious (extreme) departure" from the standard of care. Simple departures are much more common than serious departures, and there are often disagreements in committee over each designation. For this review, only the serious (extreme) departures have been collected and tabulated.

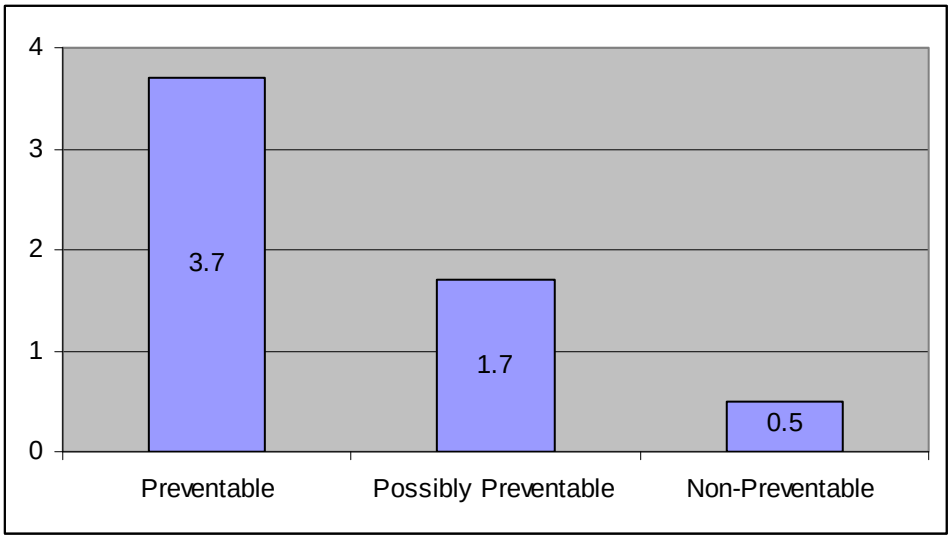
There has been strong support for the 14-category taxonomy of lapses. The list has been reviewed and accepted by all of the members of the Clinical Support Unit who conduct the death reviews. Three other nominees for inclusion did not make the final list. These were "failure to address addiction," "failure to identify and treat serious psychiatric conditions" and "failure to address spiritual emptiness."

Lapses in care occurred in all three types of deaths—preventable, possibly preventable, and non-preventable—but lapses occurred most frequently for the preventable cases (Table 8 and Figure 2). Preventable deaths had an average of 3.7 lapses per death, possibly preventable deaths had an average of 1.7 lapses and non-preventable deaths had an average of 0.5 lapses. These findings support the idea that adverse outcomes, in general, are a consequence of multiple errors: the Swiss cheese model of adverse events in which multiple "holes" in the system all line up.

Table 8. Number of lapses by preventability.

Preventability	Lapses	Deaths	Lapses per Death
Preventable	11	3	3.7
Possibly preventable	109	65	1.7
Non-Preventable	172	327	0.5

Figure 2. Average number of lapses per death by preventability.



B. Trends in Death Rate and Preventability

Tables 9-11 show significant declines in the CDCR death rate from the first quarter of 2006 through the second quarter of 2008.

Table 9. Death rates per quarter and annualized among California inmates, 2006-2008.

Quarter	Number of Deaths	Number of Inmates	Quarterly Rate per 100,000 inmates	Annualized Rate per 100,000 Inmates
Q1 2006	124	170,475	72.7	290.9
Q2 2006	108	172,561	62.6	250.3
Q3 2006	103	173,101	59.5	238.0
Q4 2006	93	172,528	53.9	215.6
Q1 2007	112	172,284	65.0	260.0
Q2 2007	100	173,312	57.7	230.8
Q3 2007	91	172,645	52.7	210.8
Q4 2007	94	171,444	54.8	219.3
Q1 2008	99	169,949	58.3	233.0
Q2 2008	87	170,983	50.9	203.5

Table 10. Change in the death rate among California inmates, 2006 to 2007.

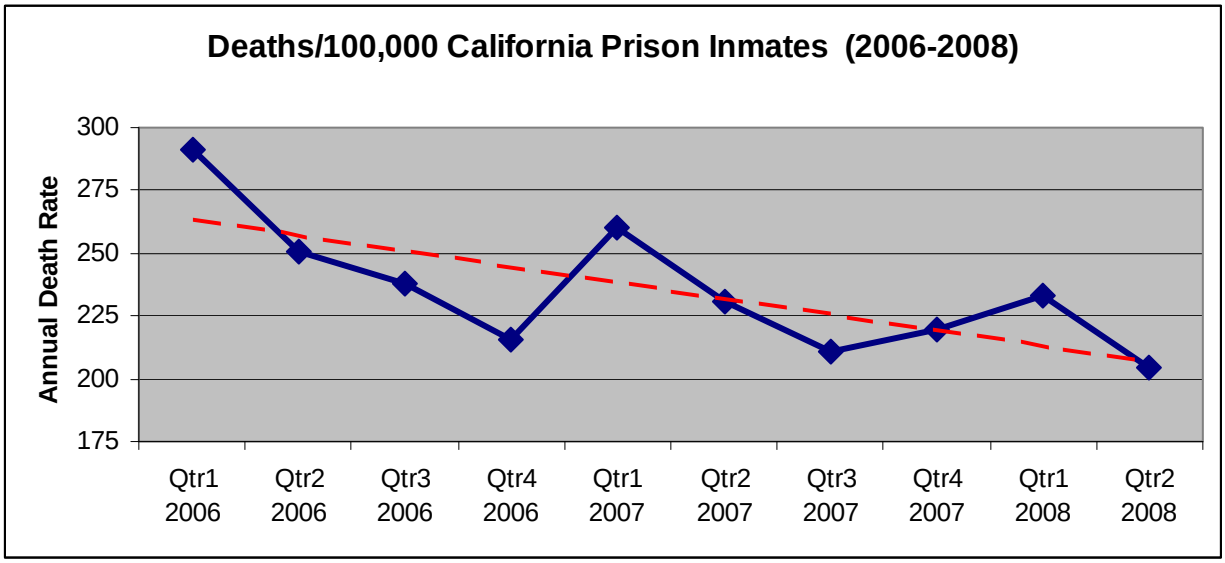
Year	Number of Deaths	Number of Inmates	Annualized Rate per 100,000 Inmates	Change
2006	428	172,166	248.6	-
2007	397	172,421	230.3	-7.4%

Table 11. Change in the death rate among California inmates by prior year quarters 1 and 2 combined, 2006-2008.

Quarter	Annualized Rate per 100,000 Inmates	Change
Q1-2 2006	270.5	-
Q1-2 2007	245.4	-9.3%
Q1-2 2008	218.2	-11.1%

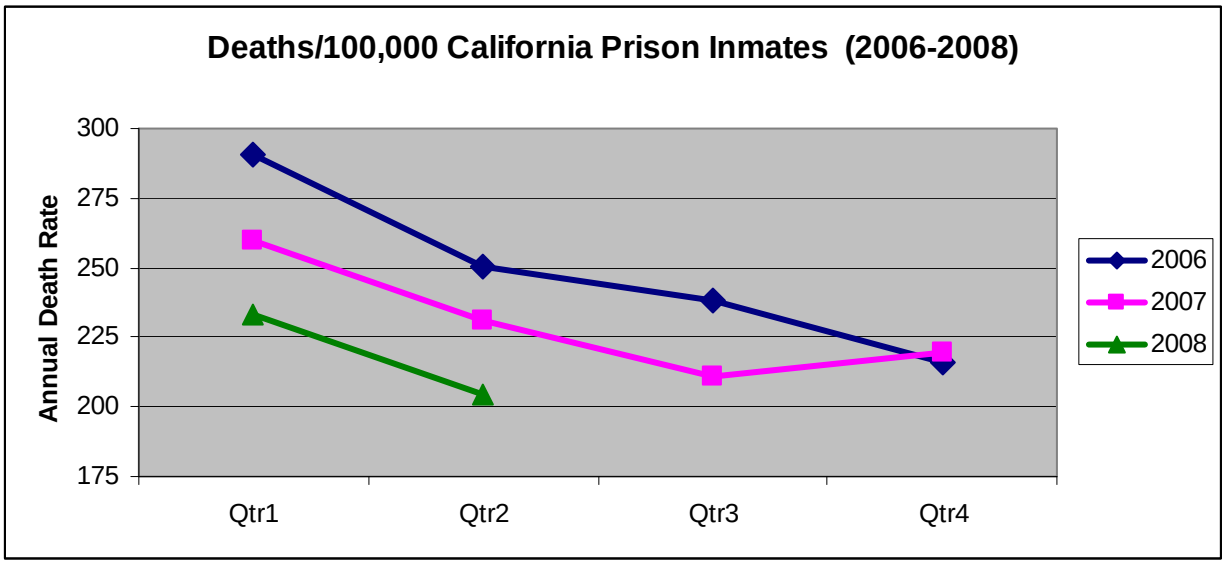
Figure 3 displays the decreasing trend in overall mortality from January 2006 through June of 2008 as well as the calculated linear regression line.

Figure 3. Trend in annualized mortality rate per 100,000 inmates, 2006-2008.



Displaying the same data in lines one-year long demonstrates the seasonal variation pattern, correlating with circulation of winter viruses, that is usually seen in population-based mortality studies (Figure 4).

Figure 4. Trend in annualized mortality rate per 100,000 inmates, 2006-2008, displayed by year.



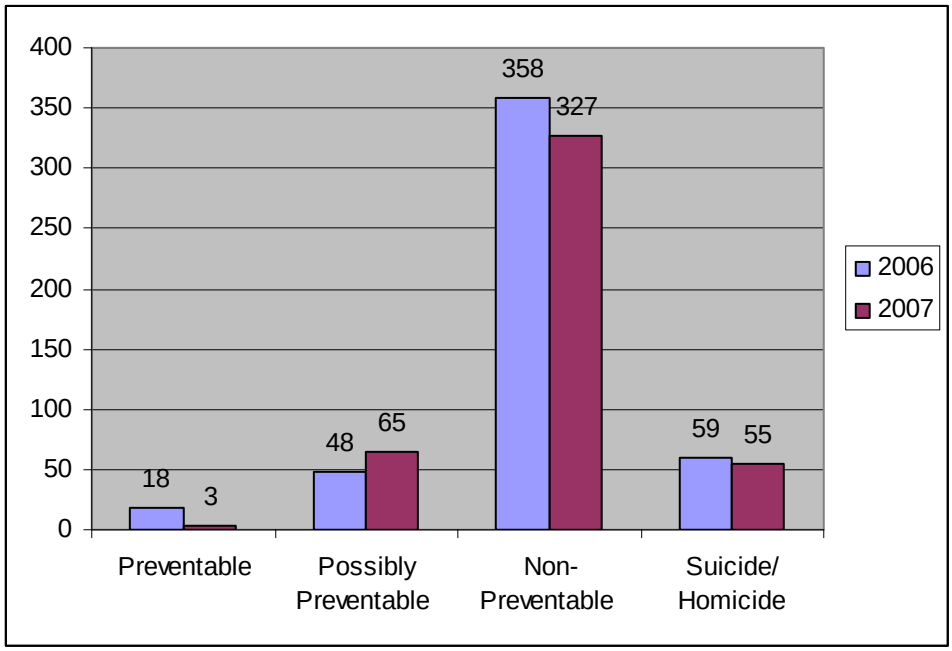
C. Trends in the Attribution of Preventability

Compared to 2006,[3] in 2007 there were far fewer cases identified as preventable and more that were identified as possibly preventable (Table 12 and Figure 5). Because the death review process was less standardized in 2006, it is likely that the total number of preventable deaths was under-estimated in the analysis of the year 2006 deaths.

Table 12. Types of preventability of deaths among California inmates, 2006 and 2007.

Year	Preventable	Possibly Preventable	Non-Preventable	Suicides / Homicides
2006	18	48	358	43 / 16 (total 59)
2007	3	65	327	33 / 22 (total 55)

Figure 5. Number of deaths by preventability, 2006 and 2007. The suicides and homicides are included as non-preventable deaths and shown separately as well.



D. Interventions to Decrease Preventable Deaths

The vast majority of lapses in care do not lead to death, but in cases of preventable death, there were a higher number of lapses per case. Strategies to decrease or mitigate lapses, if successful, will decrease the number of unnecessary deaths. Table 13 shows the total number of lapses in care identified an all 396 death review cases.

[3] Imai K. Analysis of CDCR Death Reviews 2006. August 20, 2007. Found at: www.cphcs.ca.gov/resource.aspx

Table 12. Summary of lapses of care (extreme departures), 2007.

Lapses of Care Types (Extreme Departures)	# of Lapses in the 327 Non Preventable Deaths	# of Lapses in the 65 Possibly Preventable Deaths	# of Lapses in the 3 Preventable Deaths	Total # of Lapses
#1 - Failure to recognize, identify or adequately evaluate important symptoms or signs	52	43	1	96
#2 - Failure to follow established guidelines for evaluation and/or management of specific condition	19	6	3	28
#3 - Delay in access to care sufficient to result in harm to the patient	31	20	1	52
#4 - Failure to adequately pursue abnormal test results	13	5	1	19
#5 - Failure of provider-to-provider communications including botched handoffs	4	5	1	10
#6 - Fragmentation of care such that individual responsibility for patient is waived	10	7	0	17
#7 - Surgical/procedural complication resulting in iatrogenic injury	1	3	0	4
#8 - Medication prescribing error	14	7	1	22
#9 - Medication delivery error	5	3	2	10
#10 - Practicing outside the scope of one's capabilities	4	1	0	5
#11 - Unsupervised mid-level (nurse practitioner or physician assistant) care	6	3	0	9
#12 - Failure of communication with patient	0	0	1	1
#13 - Patient non-adherence with recommendations for care	5	0	0	5
#14 - Delay in emergency response or failed to follow emergency response protocol	3	4	0	7
#15 - Other	5	2	0	7
Total	**172**	**109**	**11**	**292**

The most frequent lapse was the failure to recognize, evaluate and treat important signs and symptoms. Fully one-third of all identified lapses (96/292 or 33%) occurred in this category. In fact, lapses numbers 1, 2, and 3 together account for 60% of all identified lapses. The Receiver and CPHCS have already begun many steps intended to reduce lapses in care in the California prison system and more are planned. The following lists interventions to be taken to address each of the 14 lapses.

#1. Failure to recognize or evaluate important signs and symptoms.

The majority of these lapses involved patients presenting for non-routine care with chest pain, shortness of breath, abdominal pain, severe headache, dizziness, acute confusion, new neurological symptoms, weight loss, and abnormal vital signs including low oxygen saturations. Many of these cases occurred after clinic hours, at night and on weekends, when healthcare staff are most isolated.

a. Strengthening hiring criteria. New criteria for employment have been adopted, which includes board certification or demonstrated competence in a primary care specialty. As of August 2008, 85 providers have left employment or been suspended and these have been replaced with providers who meet the new criteria. As the committee continues to meet, the number of poorly qualified providers has significantly declined.

b. Redesign of on-call policy and system. The PPEC will soon revisit the on-call policy to address the issue of after-hours evaluation of red flag symptoms.

c. Reducing provider isolation. Renovation of clinical areas in existing prisons and creation of the Receiver's seven new healthcare facilities will reduce the current physical isolation of providers. Unlike providers in community hospitals and clinics who can readily consult with colleagues, CPHCS providers often find themselves making decisions in professional solitude.

d. Access-to-Care Initiative. A comprehensive redesign of the "sick call" (access to primary care) process is underway.

e. Provider case conferences and continuing medical education (CME).. The Clinical Support Unit now conducts regular case-based educational meetings at the individual prisons. Many are based on death review cases. Focused CME will be presented on the management of red flag symptoms.

f. Quarterly newsletter. A quarterly newsletter of the Peer Review Department began in September 2007. The newsletter contains articles on evaluation of critical clinical problems and highlights lessons from death reviews.

g. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#2. Failure to follow clinical guidelines.

These lapses involved failure to follow evidence-based guidelines of care for asthma, diabetes, chronic hepatitis C, suspected unstable coronary disease, congestive heart failure, and chronic pain management.

a. Access-to-Care Initiative. The Receivership and CPHCS have recently begun the Access-to-Care Initiative, which will create standardized, measurable, reliable, and sustainable access-to-care processes in the four domains of 1) reception, 2) sick call and primary care, 3) chronic disease care, and 4) specialty, infirmary and acute care. The first chronic disease initiative involves asthma, which was responsible for six preventable deaths in 2006 and two more in 2008. The changes created by this initiative will fundamentally change the way that medicine is practiced in CPHCS and should dramatically reduce lapses in these areas.

b. Promotion of disease guidelines. The Pharmacy and Therapeutics Committee continues to publish medication guidelines for common conditions. The chronic hepatitis C guidelines have recently been updated and will be rolled out in 2008-09. The pain management guidelines will be adopted and rolled out in 2009.

c. Availability of decision support at the time of care. Providers and nurses with access to web-connected computers now have access to UpToDate, the leading medical online reference resource, but continued deployment of health information technology will enable additional supports. Renovation of clinics and the Receiver's new healthcare facilities, as noted above, will also increase availability of support from colleagues.

d. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#3. Delays in access to care.

These lapses occurred throughout the spectrum of care, including lapses in triage, acute care, primary care, specialty care and higher levels of care (hospital and emergency department).

a. Access-to-Care Initiative. The Access-to-Care Initiative will generate practice changes in all of these major settings of care, especially the nursing triage, acute care, primary care, and specialty care domains.

b. Health Care Access Units. The Receiver has begun to establish dedicated health care access custody teams at each of the 33 prisons to ensure the availability of custody escorts.

c. Specialist and hospital provider network. The Receiver's initiatives in contracting and utilization management will improve availability and responsiveness of specialists and community hospitals. Cohorting chronically ill and disabled patients in the Receiver's seven new healthcare facilities will improve availability and quality of specialty and hospital care.

d. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#4. Failure to identify and pursue abnormal test results.

a. Primary care system redesign. A primary care system redesign will address this area, including creation of a culture of accountability.

b. Health information technology. The clinical data repository will begin to be available to providers with computer connectivity in 2009.

c. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#5. Provider-to-provider communication.

These occur during handoffs of care, especially those involving specialty consultations, patient transfers from prison to prison, and transfers from prison to hospital or emergency department and back again.

a. Transfer communication. Contracted hospitals and specialists must be required to provide timely written and verbal communication at the time of transfer.

b. Primary care system redesign. A primary care system redesign will address this area, including creation of a culture of accountability.

c. Reducing provider isolation. Renovation of clinical areas in existing prisons and creation of the Receiver's new healthcare facilities will reduce the current physical isolation of providers and facilitate communication.

d. Redesign of on-call policy and system.

e. Health information technology. Computer connectivity and electronic records can help mitigate this lapse.

f. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#6. Failure of provider to assume responsibility for the patient.

This occurs when a system of care is fragmented and episodic, as is the case in the majority of the 33 prisons.

a. Primary care system redesign. A primary care system redesign will address this area, including creation of a culture of accountability.

b. Redesign of on-call policy and system.

c. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#7. Surgical/procedural complication.

a. Competency of specialists. If poor quality specialists are identified, their contracts should be pulled and new pools of specialists and hospitals should be found.

b. Specialist and hospital provider network. The Receiver's initiatives in contracting and utilization management will improve availability and responsiveness of specialists and community hospitals. Cohorting chronically ill and disabled patients in the Receiver's new seven healthcare facilities will improve availability and quality of specialty and hospital care.

#8. Medication prescribing error.

a. Pharmacy system redesign. An electronic pharmacy system with embedded reminders and clinical guides is being rolled out (Maxor Guardian).

b. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#9. Medication delivery error

a. Pharmacy system redesign. An electronic pharmacy system with embedded reminders and clinical guides are being rolled out (Maxor Guardian).

b. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#10. Practicing outside the scope of one's capabilities

a. Redesign of privileging policy. New credentialing policies include "tiered credentialing," a privileging system in which providers are only privileged to work in settings where they have demonstrated competence.

b. Reducing provider isolation. Renovation of clinical areas in existing prisons and creation of the Receiver's new healthcare facilities will reduce the current physical isolation of providers and facilitate ready assistance for providers.

c. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#11. Failure to supervise mid-level providers (nurse practitioners and physician assistants)

a. Regular mentor/supervisor. All mid-level practitioners were assigned a regular physician mentor / supervisor in the 4th quarter of 2007.

b. Redesign of mid-level care. Initiatives in progress include primary care redesign, chronic care initiative, and creation of tiered credentialing.

c. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#12. Failure to communicate effectively with patient

a. Primary care system redesign. Redesign of primary care will support trust in physicians by patients (and vice-versa) and will enhance the roles of RNs and other members of the care team in communication, including patient education.

b. Local work with Men's Advisory Councils (MACs) and Women's Advisory Councils (WACs).

#13. Patient non-adherence with recommendations for optimal care without appropriate effort by providers to educate or convince the patient

a. Primary care system redesign.

b. Access-to-Care Initiative. The Access-to-Care Initiative is promoting the chronic care model and care management initiatives.

c. Patient peer education. The Access-to-Care Initiative includes peer education as one component of the chronic care model.

d. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

#14. Delay in emergency response or failure to follow emergency response protocol.

a. Emergency Medical Response Initiative. The Emergency Medical Response Initiative will touch every prison in the coming months.

b. Nursing practice review. The nursing staff have recently implemented new procedures for nursing practice review.

c. Local peer review. These and all other types of lapses should be discussed at a local level and incorporated into the local peer review processes.

E. Other Areas of Potential Improvement

Death reviews focus attention on a range of lapses in the processes of care in specific cases by specific clinicians. Valuable as this is, it is important to remember that medical record reviews shed only limited light on system contributions to errors and poor outcomes. Regarding hand hygiene, for instance, universally recognized as important to patient health outcomes, medical records reflect neither individual compliance with accepted practice nor the availability of necessary facilities and supplies. The CDCR has been notorious for its lack of hand-washing facilities in clinical areas.

The interventions mentioned above include a number of system strategies that go beyond individual provider recruitment and education. In addition, the interventions below highlight several of the more important "macro" interventions that will be necessary to facilitate reliable patient care.

1. Creating/redesigning the primary care system.

The current system of care is episodic and characterized by patient-physician relationships that are often adversarial and symptom-driven. It should be possible to decrease serious lapses in care by changing to a primary care model that is characterized by an ongoing patient-physician relationship with built-in advocacy for patients and accountability for outcomes. Poorly trained and poorly motivated providers should continue to be replaced with providers who are competent to deliver primary care. Primary care physicians should help create and lead interdisciplinary patient management teams designed to manage panels or populations of patients.

2. Creating a chronic disease care model of care.

The practice of medicine in many, if not most, of the prisons continues to be episodic and focused on acute symptoms rather than patient-centered continuity, prevention, and chronic disease management. With better health information technology, it will be

possible to identify patients at risk for preventable death based on age, functional status, and/or diagnoses. These patient groups have more chronic diseases, take more medication, and are subject to more testing, more hospitalizations, more specialist visits, and more medical handoffs. The chronic care model has proven effective in preventing unnecessary morbidity and mortality, producing measurable improvements in overall care, and reducing waste through implementation of care management, redesigned team-based processes, patient education, and decision support.

3. **Improving supports for good primary care practice.**

   The medical record system is still paper-based. Individual records, if available, are often in shambles, and essential patient medical information is often missing. The new pharmacy processes are far from fully implemented, so medication dispensing and administration are still fraught with potential for delays and errors. Even when California's largely rural prisons can recruit adequate numbers of physicians and nurses, specialists and ancillary services staff are often unavailable.

4. **Facility upgrades and seven new facilities (10,000 bed project).**

   The CPHCS clinical staff has been working in clinical areas that are dirty, cramped, crowded, noisy, and poorly equipped. Efficient team care, as called for in the chronic care model, is physically impossible where the requisite team members cannot fit in the clinical space, as is true for the majority of CDCR's yard clinics. The volume of care often far exceeds capacity, as at Avenal State Prison, where the 7525 inmates get care in spaces designed for 2320. Crowded patient care areas promote errors and prohibit confidentiality. Recruitment and retention of professional staff will be problematic so long as clinic environments are isolating and flagrantly unprofessional. There are plans to improve and enlarge the clinical areas in existing prisons, but these clinic remodels have only just started, and they will not address the challenge of providing adequate care in rural areas to large populations of patients heavily burdened with chronic disease. The 10,000 bed project will cohort sicker patients in urban or near-urban facilities, increase access to care, and dramatically improve efficiencies in care.

5. **Redesigning the ways in which patient information is handled at care transitions.**

   The inmate patient population is challenging. There is a high prevalence of dual diagnoses (serious mental illness coexisting with physical illness), chronic hepatitis, HIV infection, and drug and alcohol addiction. Depression is endemic. The extraordinary rate of transfers in the California prison system creates opportunities for botched handoffs and the loss of critical bits of clinical information at the point of transfer. The development of health information technology and the 10,000 bed project will decrease the number of botched transitions in care.

6. **Collaboration with custody.**

   Security issues complicate both access to care and provision of care in prisons. Taking patients for care outside the prison is a remarkably complex process. Cell searches can result in confiscation of regular medication, and lags in replacement may lead to lapses in

delivery of necessary medications. A strong relationship between custody and the medical department is essential when redesigning almost any aspect of care in CDCR.

F. Conclusion

Death rates in the CDCR are significantly decreasing in part because the high-quality CPHCS peer review process has resulted in the replacement of 85 potentially dangerous providers with new well-qualified providers.

The death review process offers an important but narrow window on the quality of healthcare delivery systems. There are inherent limitations on the information provided by this process. It focuses largely on physician practice as documented in the medical record. It does not reveal the adequacy of staffing; the performance of the interdisciplinary team working with the provider; the provision of information to support planned care rather than episodic care; the availability of decision support during patient encounters; the performance of supervisors, managers, and executives; the organization's commitment to education and training; or the adequacy of equipment and the physical environment.

In its continued examination of the causes of poor outcomes in American healthcare, the Institute of Medicine (IOM) has noted the need for "fair and just systems of safety that acknowledge both the individual and system contributions to successful as well as adverse events while emphasizing the systems approach to error reduction."[4] Healthcare systems must distinguish human errors from willful negligence and intentional misconduct, but they must also build strong defenses into the work environment. The IOM report quotes safety expert James Reason, "We cannot change the human condition, but we can change the conditions under which humans work."

In his Turnaround Plan of Action, the Receiver has committed to establishing the array of prerequisites to care that is safe, effective and efficient. The IOM has repeatedly pointed out that "piecemeal approaches will not be successful."[5] Recruiting new providers will not yield sustainable improvements in mortality if those providers are left practicing in the cramped yard clinics of existing CDCR prisons. The clinic upgrades and 10,000 bed project, together with computer connectivity and health information technology, will make it possible to achieve critical clinical redesigns with concomitant improvements in quality and cost-efficiency. Without them, care will continue to be wasteful and unsafe.

Patient safety requires creation of a culture in which clinicians readily identify mistakes and system vulnerabilities and in which all staff share in the responsibility for optimal patient outcomes. Given appropriate supports, such a culture should be possible in California's prison healthcare system. Sustaining and continuing improvements in lapses in care, unnecessary deaths, suffering, and waste will depend upon continuing progress of the Receiver's multifaceted interventions.

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[4] Institute of Medicine. *Keeping Patients Safe: Transforming the Work Environment of Nurses.* Washington, DC: National Academy Press; 2004.
[5] *Ibid.*