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Title

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Permalink

<https://escholarship.org/uc/item/8d6725q5>

Journal

Journal of the American Geriatrics Society, 60(6)

ISSN

0002-8614

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Publication Date

2012-06-01

DOI

10.1111/j.1532-5415.2012.03962.x

Peer reviewed

Addressing the Aging Crisis in U.S. Criminal Justice Healthcare

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Abbreviated title: Older Prisoners

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Funding Sources

Dr. Williams is supported by the National Institute of Aging (K23AG033102), The Jacob & Valeria Langeloth Foundation, and The UCSF Program for the Aging Century. Dr.

Walter is supported by the National Cancer Institute R01 CA134425. These funding

sources had no role in the design and conduct of the study; collection, management, analysis, or interpretation of the data; or preparation, review, or approval of the manuscript. Drs. Williams and Walter are employees of the Department of Veterans Affairs. The opinions expressed in this manuscript may not represent those of the VA.

Abstract

The U.S. criminal justice population is aging at a significantly more rapid rate than the overall U.S. population: the population of older adults in prison has more than tripled since 1990. This increase is at the root of a prison healthcare crisis that is spilling into communities and public healthcare systems as nearly 95% of prisoners are eventually released. The graying prison population is also straining state and local budgets. In prison, older prisoners cost approximately three times as much as younger prisoners to incarcerate, largely due to healthcare costs. In the community, older former prisoners present the least risk of recidivism yet are vulnerable to serious and costly social and medical challenges such as housing instability, poor employability, multiple chronic health conditions, and health-related mortality. Older current and former prisoners, however, are largely ignored in the current geriatrics evidence base. Knowledge about the health, functional and cognitive status of older prisoners is limited, with even less known about risk factors for long term poor health outcomes during and after incarceration. This article provides an overview of aging in the criminal justice system. It then describes how geriatric models of care could be adapted to address the mounting older prisoner healthcare crisis and identifies areas where additional research is needed to explore prison-specific models of care for older adults.

Key words: prisoner, aging, health disparities

The aging of America is having a profound impact on the economy, social services and healthcare. Although there is a common misperception that prisoners are young, the criminal justice population, including those in jail, prison or on community probation or parole, is aging at a more rapid rate than the US population. The increasing number of older prisoners is at the root of a healthcare crisis in the U.S. criminal justice system that is spilling into communities and public healthcare systems. The field of geriatrics has an opportunity to help address this crisis.

Before incarceration, prisoners have high rates of behavioral health risk factors and limited healthcare access.³ Older prisoners, on average, have early onset chronic medical conditions, untreated mental illness, and unmet psychosocial needs.⁴⁻⁶ Data from the three largest state prison systems show that incarcerated older adults use more prison healthcare services than younger adults and are commonly treated in outside community hospitals for costly acute events related to chronic disease.⁷⁻⁹ As a result, aging prisoners are stressing criminal justice healthcare systems and state budgets nationwide.¹⁰

Nearly 95% of all prisoners are eventually released to the community, between 600,000 – 700,000 annually, and the mean age of parolees nationwide rose 5 years in the 1990s.¹¹ Following release, older former prisoners present the least risk of re-incarceration¹² yet prove particularly vulnerable to social and medical challenges, such as homelessness, poor employability, multiple chronic medical conditions, and mortality. As a result, emergency healthcare and hospitalization are commonplace among former prisoners. Thus, the aging prison population also has an important impact on resources

in communities challenged with reintegrating a growing number of older former prisoners.¹¹

Increasingly, criminal justice institutes, policymakers and the media view the growing older prisoner population as a health and economic crisis for both the criminal justice system and communities.⁴ Yet the current evidence base describing the health and healthcare needs of incarcerated older adults is insufficient and not widely disseminated among non-prison healthcare providers.¹⁶ As a result, effective models of geriatric care for this population remain largely unexplored. This article provides an overview of the aging crisis in the criminal justice system. It then discusses how geriatric models of care could be adapted to address this mounting healthcare crisis and ends by identifying areas of further research that are needed to better provide cost-effective quality healthcare to older prisoners.

The aging prison population

The age that a prisoner is considered to have reached the “older” or “geriatric” threshold varies by jurisdiction.¹² In general the age cutoff is lower than for non-prisoners because of the common perception that many incarcerated persons experience “accelerated aging”. “Accelerated aging” takes into account the high prevalence of risk factors for poor health that are common in incarcerated persons, such as a history of substance abuse, head trauma, poor healthcare, and low educational attainment and socioeconomic status. While empirical studies of accelerated aging in prisoners are lacking, research shows that incarcerated individuals age 50 or older are significantly more likely to suffer from one or more chronic health conditions or disability than their community-dwelling counterparts. Further, evidence suggests that correctional

authorities witness accelerated aging: at least 20 state departments of correction and the National Commission on Correctional Health Care now set the age cutoff for “older” prisoners at 50 or 55.¹² This article, to be consistent with the data reported by the Bureau of Justice Statistics, uses 55 years as the definition of an “older” or “geriatric” prisoner.

While the population of older adults in the U.S. grew by more than half from 1990 to 2009 and the overall prison population doubled, the population of older adults in prison more than tripled, Figure 1. This population increase has been attributed to many factors including mandatory minimum sentencing laws, increased older adult arrests, reintroduction of indeterminate and life sentences and third-strike legislation. The aging trend has been observed in both prisons, which generally house persons serving more than 1-year sentences, and jails, which are designed for those awaiting trial, on probation or parole violation, or with short-term sentences. Moreover, the aging trend has accelerated in recent years. From 2000 to 2010, the number of older U.S. prisoners increased 181%, while the overall prison population increased only 17%.¹ For many state prison systems, the demographic shift towards significant populations of older prisoners has been dramatic. There are now 28 states that hold over 1,000 older prisoners, compared to just 2 in 1990, Figure 2.

The increasing number of older prisoners has had significant economic consequences. In 2008, approximately \$50 billion dollars was spent on the criminal justice system accounting for 1 in every 15 dollars of state spending.¹⁰ Older prisoners are the most expensive subset of prisoners – mostly due to healthcare costs. Two of the nation’s three largest state prison systems report that per capita healthcare costs for older prisoners

are 3.5 times what they are for younger prisoners. The third state, California, does not make healthcare cost estimates per prisoner publically available but, in 2008, reported spending over \$470 million on outside contract medical care and reported that older inmates were the most expensive prisoners on average.⁷

Given that older adults have more medical needs than younger adults, research is needed to identify risk factors for high medical expenditures among older prisoners and to test interventions designed to decrease medical care costs while improving or maintaining healthcare quality. The first step towards identifying cost-effective quality care for older prisoners is to align the research agenda for older prisoners with models of geriatric care already developed and tested in the fields of geriatrics and gerontology, Table 1.

Geriatric care models, the research agenda and older prisoner health care

Multimorbidity

On average, older prisoners nationwide have three chronic medical conditions¹² and a substantially higher burden of chronic conditions like hypertension, diabetes and pulmonary disease than both younger prisoners and older non-prisoners.¹⁷ In Texas, prisoners age 55 or older account for 46.7% of those with three or more chronic conditions²¹ and are prescribed an average of 7.3 classes of chronic medications.²²

These surpass averages for non-incarcerated older Americans.

The reported prevalence of serious mental illness in older prisoners is similar to that in older non-prisoners, 15%-20%.²³ However studies also suggest that psychiatric conditions are commonly underdiagnosed and undertreated in older prisoners. Notably, the prevalence of co-occurring mental and physical health conditions among older prisoners has not been comprehensively studied.

Given the high prevalence of comorbidity and healthcare use among older prisoners, the multimorbidity model of geriatric care²⁴ is well-suited for the older prisoner population. The multimorbidity model advocates for shifting care from a focus on single diseases to a model of care that emphasizes prioritizing the chronic medical conditions that most affect health status and quality of life for the individual patient.²⁴ The model incorporates care coordination, education, and shared decision-making for every potential intervention. Quality standards for the management of comorbidity in older adults are still being optimized in the non-incarcerated population. In the criminal justice system, the National Commission on Correctional Health Care (NCCHC) sets standards for healthcare but more knowledge is needed about the coexistence of mental and physical illness, polypharmacy risk, and barriers to chronic disease management among older prisoners so that multimorbidity models, once optimized, can be integrated into NCCHC care standards.

Functional impairment

Functional impairment is a strong predictor of high healthcare costs, morbidity and mortality in older adults. The few studies of functional impairment in older prisoners suggest that it is common and likely to occur at a younger age than in non-prisoners. Yet functional impairment is hard to measure in prisoners. The traditional measure of function - Basic Activities of Daily Living (ADL: eating, bathing, toileting, dressing, and transferring) – identifies profoundly disabled persons. In community-dwelling older adults, moderate impairment is typically assessed using Instrumental Activities of Daily Living (IADL – e.g., ability to shop, cook, do laundry, take transportation, balance a checkbook), measures with limited application for incarcerated individuals.²⁵

Given that optimal care for functionally impaired older adults includes decreasing the mismatch between their functional abilities and the functional requirements of their

environment, limitations in the application of IADL measures in prison could impede functional assessment and accommodation for older prisoners. One study identified new Activities of Daily Living for Prison (such as ability to climb onto one's assigned bunk, drop to the floor for alarms, and hear orders from staff) that could be used to identify moderate functional impairment in prisoners.²⁵ However, activities that are necessary for independence may differ by institution, and to be most effective, more research is needed to identify measures with the greatest utility in the most settings. Future studies might also incorporate the perspective of guards (correctional officers and deputies) to better understand the unique nature of functional impairment in prisoners.⁶

Geriatric Syndromes

Geriatric syndromes, common conditions associated with aging, are defined by the interplay between a person and their health and environment. These syndromes (e.g., visual or hearing impairment, incontinence, falls) can profoundly impact quality of life, medical management, healthcare use, and morbidity. Studies about geriatric syndromes in older prisoners, while limited in number, have found that rates of vision and hearing impairment, incontinence and falls are high.

Because of the strong association between geriatric syndromes, adverse health outcomes and high healthcare costs, research is needed to understand the prevalence and nature of geriatric syndromes among older prisoners, as well as the unique risks that such syndromes can cause. For example, addressing hearing impairment in community-dwelling elders can decrease isolation and depression. Could addressing hearing impairment in older prisoners decrease rule violations related to failing to hear staff orders? More research is needed to understand how modifying the prison environment could improve common geriatric syndromes (such as frequent falls) or

unique adverse outcomes associated with geriatric syndromes (such as vision or hearing impairment).

Cognitive impairment

The most common and costly geriatric syndrome is cognitive impairment.

Substance abuse, PTSD and a history of traumatic brain injury, all common in prisoners, further increase the risk of cognitive impairment. Cognitive impairment can be associated with poor judgment and changes in personality, and persons with dementia are at high risk for victimization, yet research about cognitive impairment in older prisoners is sparse. One study found that 40% of prisoners aged 55 or older carried a diagnosis of cognitive impairment in their medical records, a prevalence far higher than found in community-dwelling older adults of the same age distribution.²² In another study, correctional officers identified cognitively impaired prisoners at nearly five times the rate of prison officials.⁶ Others have explored the philosophical tension related to incarcerating profoundly demented persons who may no longer be capable of understanding punishment or posing a threat to society.²⁷

Optimal care for older prisoners with dementia is limited by lack of knowledge about the prevalence of dementia as well as the ways that dementia puts older prisoners at risk for adverse outcomes. Therefore, more research is needed to understand the prevalence of dementia in older adults who are arrested and incarcerated, including which screening and diagnostic tests are most effective, the optimal role of correctional officers in keeping prisoners with dementia safe, and the unique ethical concerns that arise when incarcerating older persons. Addressing these basic questions will help inform strategies to manage health and risks for older prisoners with cognitive impairment and dementia.

Transitional care

Geriatric medicine focuses on the period of transition from one clinical setting to another. Models have been developed that successfully decrease re-hospitalization, morbidity and mortality through careful discharge planning, close primary care follow up, case management and medication reconciliation and planning.²⁴ Transitions between correctional institutions and the community have a great impact on public health³ and on older former prisoners.¹⁴ Nearly 700,000 prisoners are released to the community each year,¹⁵ and older prisoners are far less likely than younger prisoners to be re-incarcerated,¹² making the transition period from incarceration for older prisoners vitally important for both individuals and public health.

Yet the transition period out of prison can be particularly complex for older adults. In the US, prisoners generally are disenrolled from public health benefit programs (Medicare, Medicaid, SSI, Veterans Health Administration) upon incarceration. After release, there generally exists a substantial lag time, frequently several months, until benefits are reinstated.¹⁴ During this time, former prisoners may experience health decline and rely on costly and inefficient use of emergency services for health care. A survey of returning prisoners of all ages showed that one-third of those with physical or mental health conditions used emergency room care and one-fifth were hospitalized within a year of release.¹⁵ Further, because most state correctional departments provide only a 1-2 week supply of medication,¹⁴ many former prisoners have little or no access to medication while they await their initial health care appointment. A study of former prisoners in Washington State found that older adults were considerably more susceptible than younger adults to health-related mortality in the two weeks following release from prison.¹³ The transitional period may additionally be particularly problematic for older adults with cognitive impairment and/or mental illness.¹⁵

Given the high prevalence of chronic and communicable diseases, as well as serious mental illness among older prisoners, research is needed to develop and test interventions that improve transitional healthcare among newly released older inmates.³ Successful geriatric models have primarily focused on preparing the individual for the transition using a “transition coach” (generally a nurse or advance practice nurse) to provide healthcare and self-care education as well as training in communication strategies.²⁴ Studies are needed to determine if a similar coach model in concert with timely linkage to community-based healthcare for older former prisoners could decrease costly emergency service use and improve health, resulting in a positive impact on public health and lower healthcare costs borne by the community.

Palliative medicine

Longer prison sentences combined with an aging population have resulted in the deaths of many older prisoners during incarceration. From 2001 to 2007, the death rate for prisoners over age 55 (2,123 per 100,000) was nearly four times that for prisoners age 45 -54 (559 per 100,000); and in 2007, 1,550 state prisoners aged 55 or older died while in state custody, amounting to 45.7% of all state prison deaths that year.²⁸

The field of geriatrics promotes the palliative care framework which emphasizes optimization of symptom control and advanced care planning at an earlier stage than end-of-life hospice care. Yet, despite high mortality rates among older prisoners, little is known about the optimization of symptom control or the relief of suffering in older prisoners. Prison hospices are still few in number. Additionally, barriers to optimal palliative care exist in many prisons, including limitations in the use of opioid analgesics and significant patient-provider mistrust. While innovative hospice and palliative care programs are emerging in the criminal justice setting,²⁹ few have engaged prisoner-patients in the assessment of such programs and little is known about the subjective

nature of suffering among prisoners with serious medical illness. Moreover, little is known about whether the improved care and lower costs found in community-based palliative-care programs is replicable in prisons.

Conclusion

Demographic trends over the last two decades have led to a crisis in which the number of incarcerated older adults exceeds the criminal justice system's capacity to provide sufficient, cost-effective healthcare. Communities simultaneously struggle with incorporating formerly incarcerated older adults in overburdened social services and healthcare infrastructures. Research and policymaking initiatives have failed to keep pace with the mounting problem, leaving providers and healthcare systems ill-equipped to meet these challenges. This paper proposes applying widely-cited geriatric models and principles to improve geriatric prison-based and transitional healthcare and call for more health-related research on the health and healthcare needs of older prisoners.

Aging research has developed models to address multimorbidity, functional health and person-environment mismatch, geriatric syndromes, transitional and palliative care. Each of these issues is of paramount significance to prisoners who age in an environment designed for much younger inhabitants, with unusual functional requirements (such as climbing onto the top bunk or dropping to the floor for alarms), 95% of whom will transition out of this setting back to community healthcare systems.¹¹ Applying the use of geriatric care models to this population would likely provide better patient outcomes while having the potential to lower lifetime costs of care, and positively improve post-release housing and employment prospects. Here the fields of geriatrics and gerontology have an unparalleled opportunity to inform this critical health policy and economic issue.

To guide the implementation of these geriatric care models in prisons, more aging research in the criminal justice system is needed. Knowledge about the health of older prisoners is limited, and even less is known about risk factors for poor health outcomes in prison. This knowledge gap exists in large part because of a historical dearth of prisoner health research and a profound lack of good national data about prisoner health.¹⁶ Many factors contribute to this research and knowledge vacuum. Probably most importantly, prisoners are a hidden and frequently unsympathetic population. Additionally, Human Research guidelines can be daunting to investigators, there is no clear NIH funding commitment, and there may be an understandable reluctance of correctional administrations to examine the system given potential legal complications and the general scarcity of resources.

Recently, academic and state correctional health programs affiliations have led to increased research and innovative interventions that may improve quality and cost of care.³⁰ Such collaborative approaches should be a priority in addressing the current prison health crisis. Incorporation of a geriatric approach to health care that includes evaluation of geriatric syndromes and functional impairment in the context of the prison environment could enable prisons to better risk stratify older prisoners and perhaps to more efficiently house those at highest risk for adverse health events in facilities with greater access to assistance, supervision, and healthcare. Achieving such efficiencies is no longer a small matter as the aging prison population continues to generate increasing costs. Ultimately, developing a greater understanding of older prisoners' health and health care needs will have clinical and public health relevance that extends far beyond prison walls.

Acknowledgments

Authorship statement

All persons who have made substantial contributions to the work reported in this manuscript are included here as authors and all listed authors meet authorship criteria.

Author Contributions:

Study concept and design: Williams, Goodwin, Baillargeon, Walter

Acquisition of subjects and/or data: Williams, Ahalt

Analysis and interpretation of data: Williams, Goodwin, Baillargeon, Ahalt, Walter

Preparation and critical review of manuscript: Williams, Goodwin, Baillargeon, Ahalt, Walter

Conflict of Interest

Dr. Williams has served as an expert witness and as a court consultant in legal cases related to conditions of confinement for prisoners in an effort to improve healthcare in prisons and jails. These relationships have included: the ACLU of Southern California; the Disability Rights Legal Center; Hunton and Williams LLP; The University of Denver Student Law Office and The Office of the Independent Medical Monitor, MI. These relationships had no role in the decision to write this manuscript and did not influence the collection, management, analysis, or interpretation of the data; or preparation, review, or approval of the manuscript. No other authors have conflicts of interest to report. Detail provided in the table here:

Elements of Financial / Personal Conflicts	BAW		JSG		JB		CA		LCW	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Emplymnt/ Affiliation		X		X		X		X		X
Grants / Funds		X		X		X		X		X
Honoraria		X		X		X		X		X
Speaker Forum		X		X		X		X		X
Consultant	X			X		X		X		X
Stocks		X		X		X		X		X
Royalties		X		X		X		X		X
Expert Testimony	X			X		X		X		X
Board Member		X		X		X		X		X
Patents		X		X		X		X		X
Pers. Relationship		X		X		X		X		X

Sponsor's Role

Dr. Williams is supported by the National Institute of Aging (K23AG033102), The Jacob & Valeria Langeloth Foundation, and The UCSF Program for the Aging Century. Dr. Walter is supported by the National Cancer Institute R01 CA134425. These funding sources had no role in the design, methods, data collections, analysis or preparation of paper. Drs. Williams and Walter are employees of the Department of Veterans Affairs. The opinions expressed in this manuscript may not represent those of the VA.

References

Table 1. A Geriatric-Focused Research Agenda for Understanding and Improving Older Prisoner Health and Health Care

Geriatric Focus	Current Knowledge Limitations and Suggested Research Agenda Item
Health care cost	<ul style="list-style-type: none"> <li data-bbox="477 432 1328 527">□ What are risk factors for high medical expenditures among older prisoners? <li data-bbox="477 569 1414 663">□ <u>Which interventions can be developed and tested to decrease medical care costs while improving or maintaining quality?</u> <li data-bbox="477 705 1382 863">□ <u>What are the financial (and other) pros and cons of integrating older inmates within the general inmate population versus cohorting them separately?</u>
Multimorbidity	<ul style="list-style-type: none"> <li data-bbox="477 873 1442 968">□ What is the prevalence of co-existing chronic mental and physical health conditions in older prisoners? <li data-bbox="477 1010 1442 1104">□ What are barriers to optimal chronic disease management in the criminal justice system? <li data-bbox="477 1146 1382 1304">□ What are risk factors for adverse health outcomes (polypharmacy, disability, hospitalization, falls, mortality) for incarcerated older adults with chronic medical or mental illness? <li data-bbox="477 1346 1442 1566">□ <u>What longitudinal changes commonly occur among inmates with personality disorders (or other mental health diagnoses) as they age and how might these changes have an impact on parole or probation success?</u>
Functional impairment	<ul style="list-style-type: none"> <li data-bbox="477 1577 1442 1671">□ Which activities of daily living have the greatest utility in most settings for measuring functional impairment in prison? <li data-bbox="477 1713 1442 1873">□ <u>How do prison/jail guards (correctional officers and deputies) think about prisoner functional impairment? How should they adapt their practices for older prisoners with functional impairment?</u>

- Is there a role for formal training in disability assessment for guards (correctional officers/deputies)?
- What environmental modifications could best mitigate the functional requirements of prison/jail?
- What are the pros and cons of integrating programs for older inmates with programs for inmates with disabilities?
- Geriatric syndromes What is the prevalence and nature of geriatric syndromes among older prisoners?
- Do geriatric syndromes pose special risks to older prisoners in comparison to non-incarcerated older adults?
- How might traditional models of care (e.g., assistive devices that could be used as weapons) pose safety hazards in the prison setting, and how can they be adapted?
- Cognitive Impairment What is the best way to screen for cognitive impairment or dementia in older prisoners?
- What is the prevalence of dementia in older adults who are arrested and in those who are incarcerated?
- What role should correctional officers (guards) play in recognizing early signs of dementia and in keeping prisoners with dementia safe?
- What programs are needed for persons with dementia upon release from prison?
- Transitional Care What interventions can successfully link older persons to community health resources upon release?
- Can transitional healthcare programs be created that are cost-effective?
- Can transitional healthcare programs improve community health as well as the health of former prisoners?

Palliative Care

- What are barriers to optimal care of dying prisoners and how can these barriers be overcome?
 - What are the elements of a successful prison-based palliative care or hospice program for patients?
 - What is the nature of suffering among seriously ill prisoners and what are the best ways to address this suffering?
 - Can prison-based palliative care programs improve care while lowering costs?
-

Figure 1. The Older Prisoner Population Has Grown Faster than the Total Prison Population and the Population of Non-Incarcerated Older Americans

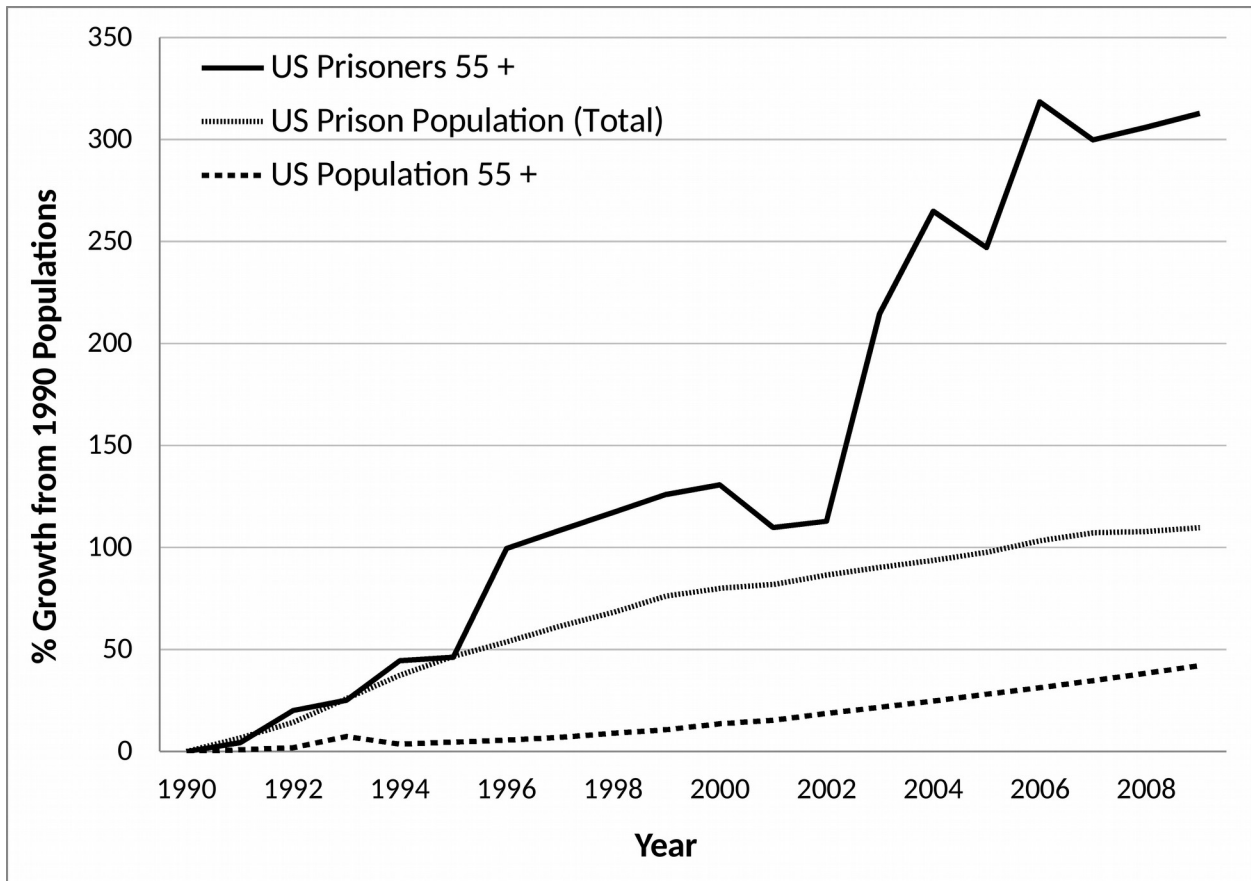


Figure 1. Legend

While the population of older adults in the U.S. grew by more than half from 1990 to 2009 and the overall prison population doubled, the population of older adults in prison more than tripled, Figure 1

Figure 2. Increasing Number of U.S. State Prisoners Age 55 or Older, 1990-2009

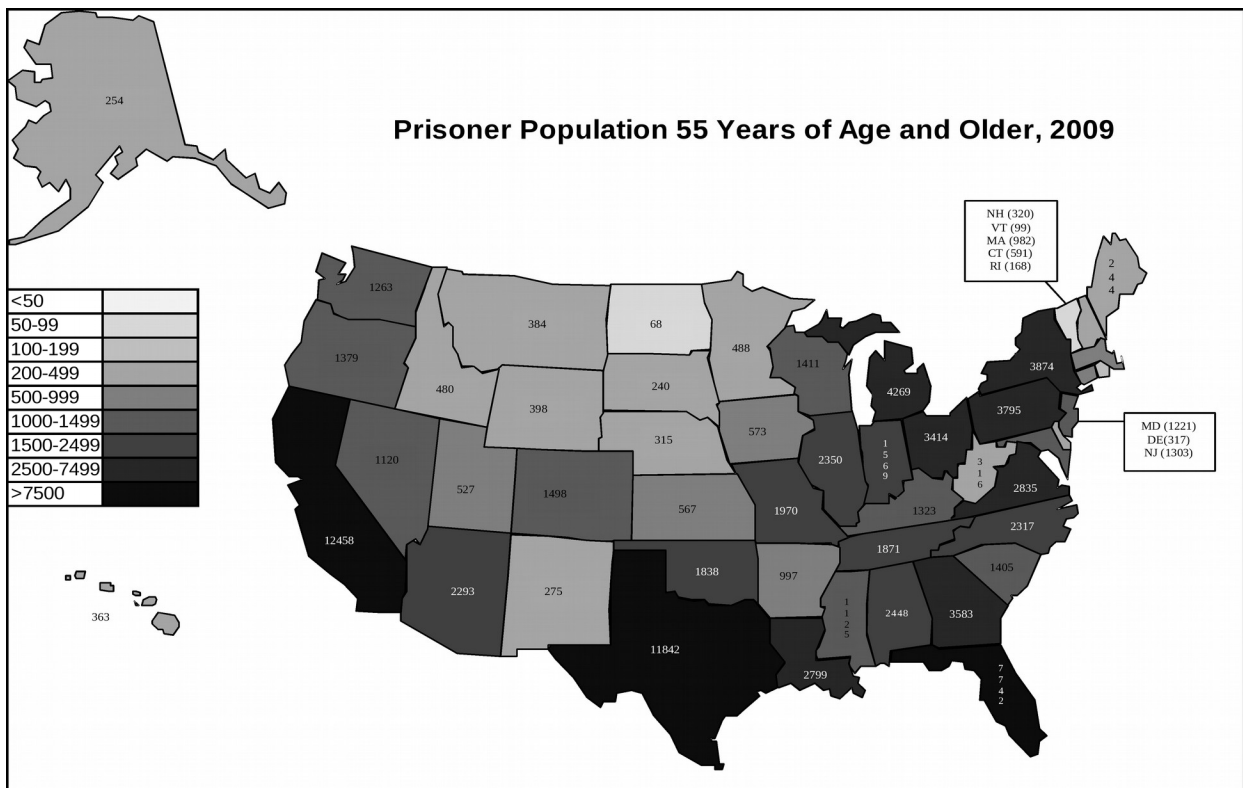
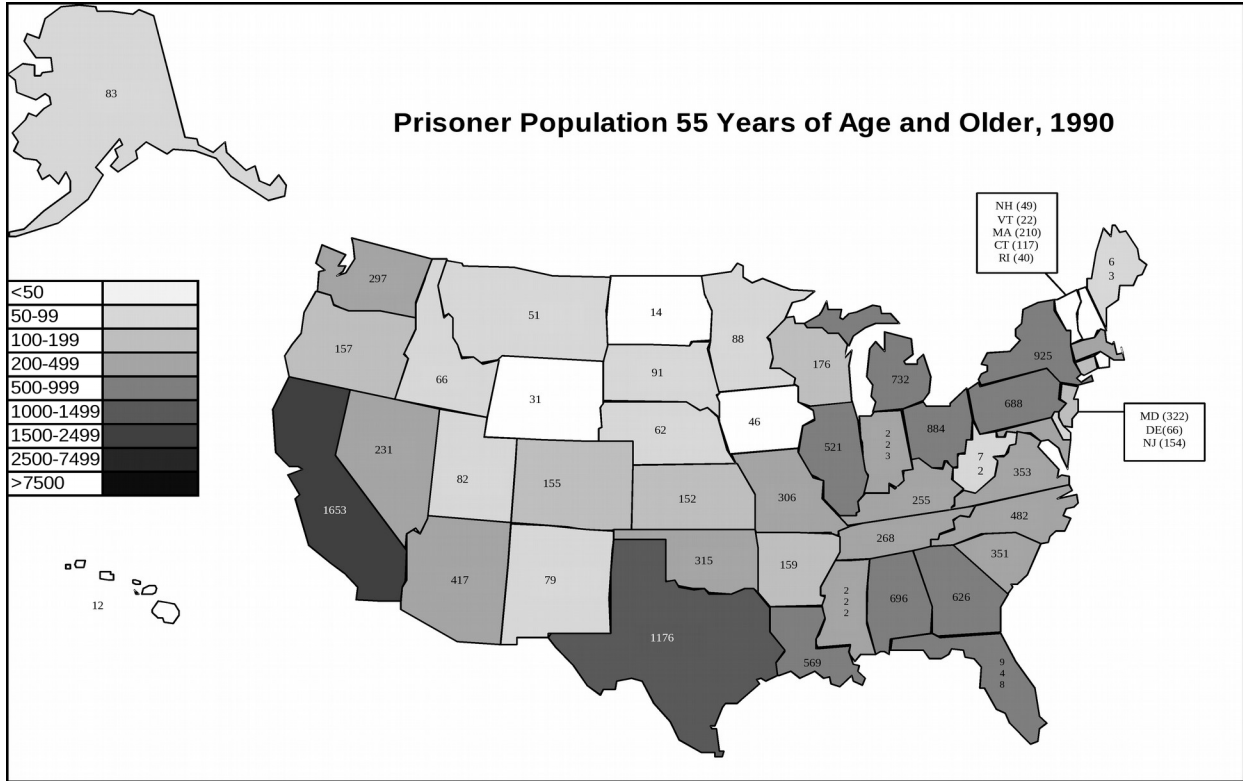


Figure 2. Legend

For many state prison systems, the demographic shift towards significant populations of older prisoners has been dramatic. There are now 28 states that hold over 1,000 older prisoners, compared to just 2 in 1990.