Published in final edited form as:
J Am Geriatr Soc. 2013 November ; 61(11): 2013–2019. doi:10.1111/jgs.12510.

Paying the Price: The Pressing Need for Quality, Cost and Outcomes Data to Improve Correctional Healthcare for Older Prisoners

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Abstract

Despite a recent decline in the U.S. prison population, the older prisoner populationis growing rapidly. U.S. prisons are constitutionally required to provide healthcare to prisoners. As the population ages, healthcare costs rise, states are forced to cut spending, and many correctional agencies struggle to meet this legal standard of care. Failure to meet the healthcare needs of older prisoners, who now account for nearly 10% of the prison population, threatens avoidable suffering in a medically vulnerable population and violation of the constitutional mandate for timely access to an appropriate level of care while incarcerated. Older prisoners who cannot access adequate healthcare in prison also affect community healthcare systems as more than 95% of prisoners are eventually released, many to urban communities where healthcare disparities are common and where acute healthcare resources are over-utilized. Yet innovations in policy and practice to improve *value* in correctional healthcare (i. e. achieving desired health outcomes at sustainable costs) have been significantly hampered by a lack of uniform quality and cost data. With their unique knowledge of complex chronic disease management, experts in geriatrics are positioned to help address the aging crisis in correctional healthcare. This manuscript delineates the basic

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Prior presentations: This paper was presented as a poster at the Annual Meeting of the Society of General Internal Medicine (SGIM), 2012.

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; the Disability Rights Legal Center; Hunton and Williams LLP; Holland and Knight 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 preparation, review, or approval of the manuscript.
Drs. Trestman, Rich, and Greifinger and Mr. Ahalt have no conflicts of interest to report.

Author Contributions: 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.

Sponsor's Role: The opinions expressed in this manuscript may not represent those of the VA. These funding sources had no role in the preparation, review, or approval of the manuscript.

health, cost and outcomes data that geriatricians and gerontologists need to respond to this crisis, identifies gaps in the available data, and anticipates barriers to data collection that, if addressed, could enable clinicians and policy makers to evaluate and improve the value of geriatric prison healthcare.

Keywords

Correctional Health; Health Disparities; Healthcare Value; Older Prisoners; Research

INTRODUCTION

Although the U.S. prison population peaked in 2009 at over 1. 6 million and now is declining slowly, the population of older prisoners is growing rapidly. Since 1990, the overall prison population has doubled, while the number of older prisoners has increased over 500%. [1,2] Older prisoners (age 55 or older) now constitute nearly 10% of the prison population. [2] In 1976, the U.S. Supreme Court ruled that all prisoners must have timely access to an appropriate level of medical care, defined as diagnosis and treatment by a physician without "deliberate indifference to serious medical needs. "[3] Since then, total annual prison spending has increased over tenfold to $77 billion, over 10% of which is for healthcare. [4,5] These rising healthcare costs are in large part due to the increasing number of older prisoners who have the highest burden of chronic health conditions and disabilities. [6–11] Yet very little data is available to examine the drivers of healthcare costs and the health outcomes of this rapidly growing population.

The optimization of geriatric prisoner healthcare is more than an economic imperative. Prison healthcare has a significant impact on communities and community-based healthcare systems. [12–15] During incarceration, there exists an opportunity for access to appropriate preventive healthcare and chronic disease management that may engender lasting benefits post-incarceration. Over 95% of all prisoners eventually return to the community, where good health is essential for establishing a social support network, stable housing, and employment, the hallmarks of a successful transition from incarceration. [16,17] Yet prisoners are often released with under treated physical and mental illnesses and/or substance misuse problems, which may lead to recidivism and generate additional costs to communities in the form of repeat incarcerations. [17–19] Older prisoners, in particular, struggle to reenroll in health benefits programs and experience high rates of homelessness, emergency services use, hospitalization and mortality during reentry. [20,21] The majority of former prisoners return to a relatively small number of low-income urban communities where health disparities are common. [14,17,22] As a result, failure to provide effective prison-based and transitional healthcare for older prisoners strains healthcare systems in communities where acute healthcare resources are already over-utilized.

With their unique knowledge of complex chronic disease management, experts in geriatrics and gerontology are well-positioned to help address the aging crisis in correctional healthcare. [1] With rising healthcare costs and steadily growing numbers of older prisoners, many prison administrators struggle to provide all prisoners with timely access to an appropriate level of medical care. [6,10,23] This suggests a pressing need to optimize geriatric prisoner health care *value*. Healthcare *value* (defined as quality over cost, or "the health outcomes achieved per dollar spent"), is reached when high quality care is delivered at sustainable costs and is measured by tracking patient outcomes and costs longitudinally. [24,25] Because older prisoners are generally in worse health, come into more contact with the correctional healthcare system, and generate higher healthcare costs than younger prisoners, they represent a critical population in which to optimize healthcare value.

Yet there remains a profound lack of data that can be used to evaluate and improve geriatric prison healthcare value. This manuscript identifies gaps in the available data; delineates the basic health, cost and outcomes data that experts in geriatrics and gerontology need to respond to this crisis; and anticipates barriers to data collection that, if addressed, could enable the evaluation and improvement of geriatric prison healthcare value.

Missing Data: A Critical Obstacle to Evaluating and Improving Value in Geriatric Correctional Healthcare

The growing number of older prisoners affects every state in the U.S. (Table 1)[26,27] and generates high healthcare costs. [6–11] Yet the precise costs, and the reasons for these high costs, are unknown. For example, a commonly cited figure in policy and government reports estimates that older prisoners cost "two to three times more" than younger inmates to incarcerate, primarily due to differences in healthcare spending. [7,11,28] However, references for these cost figures trace to investigative articles published in the lay press; an oft-cited 2004 report from the National Institute of Corrections[11] estimating the healthcare cost difference between older and younger prisoners references a 1999 article from the Nation magazine. [29] Moreover, estimates of the overall cost of prison healthcare are generally based on publically reported Department of Corrections' annual budgets, yet cost data are only reported by 37 states and the Federal Bureau of Prisons (which run Federal prisons)(Table 2). Two recent investigative reports synthesized data from special reports about older prisoners issued by a small collection of states between 2005 and 2011 and found that older prisoners cost three to nine times as much as younger prisoners to incarcerate. [9,10] But even these numbers are hard to interpret because states differed both in the age cutoff used to define "older prisoners" and in how they defined "healthcare costs".

Improving older prisoner healthcare value requires data about cost, quality of care and health outcomes. Prisoners of all ages, however, are excluded from most of the nation's major health data sets[30] and quality measures used by prisons vary across systems and facilities. [31] Even if the collection of common quality and outcomes measures were implemented, currently thirteen states (26%) do not publically report any annual correctional healthcare cost data and only 7 states report data on healthcare spending by age group (Table 2). This lack of data hampers policy reforms proposed to address the rapidly aging correctional population, such as expanding early release opportunities for older prisoners[7,9,10] and investing in prison-based quality enhancement and cost effectiveness initiatives, [31–34] by limiting policymakers' ability to assess how policy changes affect healthcare cost and patient outcomes.

Specific Data Needed to Assess and Improve Older Prisoner Healthcare

Uniform collection and mandatory reporting of limited healthcare data by age group in three critical areas could enable a more precise estimation of geriatric prisoner healthcare costs, lead to important value comparisons across prisons, and inform evidence-based clinical care innovations to improve geriatric correctional healthcare value. Those areas are: 1. *Healthcare costs and outcomes by chronic medical condition; 2. Healthcare costs and outcomes by healthcare delivery site; and 3. Healthcare costs and outcomes by sentence.*

A vital first step in this process is to define a uniform age for "older prisoners. " Correctional health experts typically define the prison population as "older" at the age of 50 or 55 due to "accelerated aging",[10,11] evidenced by the disproportionately high rates of medical and functional limitations found in prisoners at younger ages than in community-dwelling older adults. [28] Yet, there is no uniform age cutoff to define "older prisoners" that is used across correctional systems and healthcare data is generally not collected by older

age groupings (e. g. 55–59 year olds versus 60–64 year olds versus 65–69 year olds). [35] To adequately account for state to state differences in the age cutoff used for older prisoners and for the rapid changes in health status that can occur with aging, data collection should occur in 5-year age cohorts starting at age 50. These critical data should include cost and health outcomes by chronic health condition, healthcare delivery site, and sentence as discussed below.

1. Healthcare costs and outcomes by chronic medical condition

The public health opportunities of optimal geriatric prison healthcare are considerable. [12,19] Chronic conditions (e. g. diabetes, hypertension, liver disease) and serious mental disorders are more prevalent among prisoners than non-prisoners[19,36] and more common in older prisoners than in younger prisoners. [36,37] Because many older prisoners come to prison with a history of inadequate healthcare access, prisons often provide the initial treatment of chronic health conditions. Additionally, prison-based systems to assess the prevalence and enhance the monitoring and treatment of communicable diseases (e. g. , hepatitis C, HIV) in older prisoners are critical to public health. Development of strategies to optimize correctional healthcare for older prisoners requires the collection of basic health status and outcomes data to understand which conditions are most prevalent and in need of targeted care strategies and quality improvement. Because older prisoners are at heightened risk for acute healthcare services use and mortality following release,[23] sharing basic disease prevalence data between correctional and community-based providers could also help community healthcare systems plan for the needs of returning older prisoners and enabling innovations to minimize costly acute care use.

2. Healthcare costs and outcomes by healthcare delivery site

Prisons are primarily designed to incarcerate, not to cost-effectively prevent or treat disease. [19] However, analysis of the costs and outcomes associated with different healthcare delivery strategies could improve prison healthcare efficiency and quality, most notably for older prisoners with complex chronic medical conditions and/or serious illnesses. States often cite the high cost of off-site medical care as a significant driver of rising prison healthcare spending,[8,9] yet value comparisons of different care delivery sites are lacking (e. g. , in-prison dialysis versus transportation to an outside dialysis facility). Cost-effectiveness may differ by site(e. g. , community hospital versus specialized prison medical facility) according to factors such as the medical condition treated, the safety profile oft he prisoner, or the correctional institution’s geographic remoteness from community-based services. Nationwide data to identify cost-effective solutions to such complex delivery site questions could be used to improve value system-wide.

3. Healthcare costs and outcomes by sentence

Healthcare cost according to older prisoners’ level of offense (e. g. , misdemeanor, serious crime) and sentence is of increasing interest to taxpayers, policymakers and legislators. Nearly half of all prisoners are serving sentences for non-violent offenses,[5] leading some states to reexamine strict sentencing and parole policies to reduce costs. [38] Older age is often the only non-criminal justice characteristic factored in parole decisions as older adults are less likely to be rearrested and, when they are, these arrests are more likely to be for minor, non-violent crimes. [7,10] In California, where annual prisoner healthcare spending exceeded $2 billion in 2009, the State Auditor estimated that prisoners serving long sentences under “three-strikes laws” for misdemeanor convictions would cost $7. 5 billion during the course of their incarceration and that a small number of older and sicker prisoners accounted for a significant proportion of prison healthcare spending overall. [8] This information was used by policy makers to introduce legislation curtailing the use of “three strikes” in California, which passed statewide referendum in 2012. Nationwide, similar documentation of

healthcare costs and outcomes for older prisoners by offense and sentence is critical for policy analysts and political leaders who aim to examine multiple factors – public safety, state spending, and healthcare quality – in criminal justice reform.

Barriers to Older Prisoner Healthcare Data Collection in Correctional Settings

While the benefits of public reporting of common data for older prisoners' healthcare costs and out comes would be considerable to public health, the health of medically vulnerable individuals, and local and state economies struggling to keep pace with rising correctional costs, barriers to this vision are significant. Limited fiscal resources for data collection, lack of trained staff, and uncertainty regarding what data are worthy of collection may all serve as meaningful barriers to effective action. There may also be concern that improved data for quality comparison and cost-effectiveness studies would not necessarily translate to improved value. To address these concerns, efforts in two key areas are needed: funding and design/implementation.

The challenge of funding correctional healthcare data collection for older prisoners could be addressed by: (1) replicating existing prison healthcare data collection models with manageable funding requirements; and (2) better leveraging existing funding opportunities. An example of what is possible is found in Australia. In response to public health challenges associated with rising incarceration rates, researchers there have generated a wealth of useful data using time-limited, representative data collections complemented by data-linking to administrative and national health data sources. [39,40] Ultimately, the Australian National Prisoner Health Indicators project will map prisoner health to a national health performance framework, including measures of healthcare value in Australia's prisons. [41]

Based on these proven methods, a coordinated short-term data collection of a random sample of older prisoners in the U.S. could produce the data needed to significantly improve correctional healthcare value. Analyses of healthcare value would require national longitudinal data, which are currently not available. Collection of these data is feasible at reasonable cost. For example, follow up for those who remain in prison could be achieved by chart review while healthcare utilization and health outcomes data for older adults who are released could be conducted via Medicare and Medicaid claims data. To significantly expand the data available to study the relationships between incarceration and health among older adults, nationally representative longitudinal datasets could also introduce questionnaire items that ask participants about their histories of incarceration,[30] as the Health and Retirement Study did recently in its 2012 Participant Lifestyle Questionnaire. [42]

Sufficient funding for such an effort likely already exists. In recent years, the National Institutes of Health have significantly increased funding for health disparities research,[43] the Agency for Healthcare Research and Quality has funded efforts to address current and former prisoner health through its Health Care Innovation Exchange Program,[44] and private organizations have shown increasing interest in the health of older prisoners as reflected in reports by Human Rights Watch,[9] the American Civil Liberties Union,[10] the Vera Institute of Justice,[7] and others. This growing focus on the healthcare of older prisoners as a critical link between correctional and public health, suggests that the opportunity to fund a targeted prison-based health data collection is currently under-realized.

With adequate funding, a coordinated design and implementation effort could be achieved through partnerships among many interested parties including universities, the National Commission on Correctional Health Care, and the Bureau of Justice Statistics, and others. In some states, universities have already successfully partnered with correctional agencies to

improve prison health care[45] and are experienced at applying for grant funding. The National Commission on Correctional Health Care publishes standards and guidelines for correctional health services[46] and has begun designing data collection tools for disease outcomes in correctional populations. [47] The Bureau of Justice Statistics already collects important criminal justice data from local, state, and federal correctional agencies (including limited data on health outcomes and expenditure). [4,48,49] Together, these three institutions contain the geriatrics healthcare expertise and experience to design and implement a short-term data collection with follow-up based on data linkages for the medically vulnerable and costly population of older prisoners. Meanwhile, greater political leadership, increased advocacy from the correctional health and medical communities, and a broader public discussion of the need to understand the public health and economic costs associated with poor value in correctional healthcare are also required to galvanize and direct action on the part of state governments and correctional institutions.

A Worthwhile Investment

Though barriers exist, collection of data for evidence-based innovation and policy change represents a critical yet surmountable obstacle to the optimization of geriatric prisoner healthcare value. [13,15] Evidence-based prison healthcare reform is urgently needed as timely access to an appropriate level of medical care is a constitutionally required component of incarceration with profound public health ramifications. The older prisoner population (55 years of age and older) constitutes a critical group in which to target correctional healthcare data collection in three critical areas: (1)chronic medical conditions,(2) delivery site, and (3) prisoner sentence. With leadership from experts in geriatrics and gerontology, collecting such data would provide a vital first step towards improving value in geriatric correctional healthcare by enabling the identification of quality and cost deficiencies in need of evaluation and innovation. Correctional healthcare research leading to clinical and policy innovations would reduce the flow of prisoners into community healthcare facilities shortly following their release from jails and prisons and would generate knowledge that is transferable to community-based care settings, particularly in urban centers where health disparities are high, acute healthcare resources are strained, and the need for better value in healthcare is greatest. Policymakers and legislators have already signaled their political will to engage in criminal justice and correctional healthcare reform. [6,38] With their knowledge of systems for complex chronic disease management, experts in geriatrics and gerontology can help address the aging crisis in correctional healthcare. [1] A critical first step is to collect comparable quality and cost data across prison healthcare systems. Such an effort would have a broad impact on public health of older adults in low-income communities and would help policy makers assess and respond to the price we pay for our correctional policies.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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. Rich is supported by the National Institute of Drug Abuse (K24DA022112). Drs. Williams is an employee of the Department of Veterans Affairs.

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Table 1

Older prisoner

populations increased dramatically in every state from 1990 to 2009[26,27]

State Prison System	Prisoners Age 55 and Older 1990	Prisoners Age 55 and Older 2009	Change
All U.S. States	15,757	95,281	505%
Alabama	696	2448	252%
Alaska	83	254	206%
Arizona	417	2293	450%
Arkansas	159	997	527%
California	1653	12458	654%
Colorado	155	1498	866%
Connecticut	117	591	405%
Delaware	66	317	380%
Florida	948	7742	717%
Georgia	626	3583	472%
Hawaii	12	363	2925%
Idaho	66	480	627%
Illinois	521	2350	351%
Indiana	223	1569	604%
Iowa	46	573	1146%
Kansas	152	567	273%
Kentucky	255	1323	419%
Louisiana	569	2799	392%
Maine	63	244	287%
Maryland	322	1221	279%
Massachusetts	210	982	368%
Michigan	732	4269	483%
Minnesota	88	488	455%
Mississippi	222	1125	407%
Missouri	306	1970	544%
Montana	51	384	653%
Nebraska	62	315	408%
Nevada	231	1120	385%
New Jersey	49	320	553%
New Hampshire	154	1303	746%
New Mexico	79	275	248%
New York	925	3874	319%
North Carolina	482	2317	381%
North Dakota	14	68	386%
Ohio	884	3414	286%

State Prison System	Prisoners Age 55 and Older 1990	Prisoners Age 55 and Older 2009	Change
Oklahoma	315	1838	483%
Oregon	157	1379	778%
Pennsylvania	688	3795	452%
Rhode Island	40	168	320%
South Carolina	351	1405	300%
South Dakota	91	240	164%
Tennessee	268	1871	598%
Texas	1176	11842	907%
Utah	82	527	543%
Vermont	22	99	350%
Virginia	353	2835	703%
Washington	297	1263	325%
West Virginia	72	316	339%
Wisconsin	176	1411	702%
Wyoming	31	398	1184%

Table 2

Publically Available Prison Healthcare Cost Data in the U.S., 2010*

Department of Corrections	Reported Prison Healthcare Cost (2010, millions)	Estimated Cost Per Prisoner	Expenditure Categories Reported (#)	Cost Data by Age Reported since 2000
Alabama	$116. 1	$3,655		
Alaska	$32. 0	$5,717	√(2)	
Arizona	$149. 8	$3,732	√(7)	
Arkansas	Not Reported			
California	$2,034. 7	$12,327	√(4)	√
Colorado	Not reported			
Connecticut	$92. 0	$4,762	√(5)	
Delaware	$48. 0	$7,275	√(3)	
Federal Prisons	$452. 4	$2,157		
Florida	$414. 7	$3,976		√
Georgia	$217. 6	$4,426		
Hawaii	$18. 8¶	$3,226		
Idaho	$22. 6	$3,054		
Illinois	Not reported		√(1)§	
Indiana	$80. 5	$2,872	√(1)	
Iowa	Not Reported		√(1)§	
Kansas	$46. 3	$5,104		
Kentucky	$63. 8‡‖	$3,106	√(1)	
Louisiana	$48. 1	$1,219		
Maine	Not Reported			
Maryland	$57. 4	$2,535		
Massachusetts	$94. 4	$8,345		
Michigan	$322. 4‖	$7,309	√(3)	√
Minnesota	$61. 6	$6,288		
Mississippi	$52. 0	$2,175		
Missouri	$128. 0	$4,180		
Montana	$18. 9	$5,086	√(5)	
Nebraska	$30. 9	$6,736		
Nevada	$47. 6	$3,762	√(3)	
New Hampshire	$11. 6	$4,201		
New Jersey	Not Reported			
New Mexico	$53. 7	$8,064		
New York	$360. 5	$6,363	√(3)	
North Carolina	$258. 0	$6,431		√
North Dakota	$4. 7	$3,161	√(5)	

Department of Corrections	Reported Prison Healthcare Cost (2010, millions)	Estimated Cost Per Prisoner	Expenditure Categories Reported (#)	Cost Data by Age Reported since 2000
Ohio	$225. 8	$4,366	√ (5)	
Oklahoma	$61. 4	$2,339		√
Oregon	$197. 4	$14,086	√ (6)	
Pennsylvania	$243. 0	$4,740		
Rhode Island	$17. 8¶	$5,302		
South Carolina	Not Reported			
South Dakota	Not Reported			
Tennessee	Not Reported			
Texas	$475. 0	$2,735	√ (6)	√
Utah	$24. 2¶	$3,555		
Vermont	Not Reported			
Virginia	$102. 8¶	$2,748	√ (6)	√
Washington	Not Reported			
West Virginia	$23. 1¶	$3,458		
Wisconsin	Not Reported			
Wyoming	Not Reported			

* Figures based on a review of all publically available annual and statistical reports from fiscal year 2010 and all special reports related to prison healthcare and/or the elderly prison population dating from 2000 issued by State Departments of Corrections. Where Departments of Corrections did not report healthcare spending, state budget documents were also reviewed. See the online appendix to this article for a complete list of resources by state. Sources last accessed August, 2012.

§ States reported one category of prison healthcare expenditure but did not report the overall cost of prison healthcare.

‡ FY 2008

|| FY 2009

¶ FY 2011