Article

Journal of Correctional Health Care
1-9

DOI: 10.1177/1078345820915920
journals.sagepub.com/home/jcx
SAGE

Physical Health and Disability Among U.S. Adults Recently on Community Supervision

Tyler N. A. Winkelman, MD[1,2,3], Michelle S. Phelps, PhD[3,4], Kelly Lyn Mitchell, JD, MPP[3], Latasha Jennings, MPH[2], and Rebecca J. Shlafer, PhD, MPH[3,5]

Abstract

Estimates of chronic conditions and disability among individuals on community supervision in the United States are lacking. We used 2015–2016 data from the National Survey on Drug Use and Health ($N = 78{,}761$) to examine the prevalence of chronic conditions and disability among nonelderly adults who had been on probation or parole in the past year, compared to adults without community supervision in the past year. The weighted sample was representative of 4,594,412 adults on community supervision and 191,156,710 adults without community supervision in the past year. Compared to the general population, adults recently on community supervision were significantly more likely to report fair or poor health, chronic obstructive pulmonary disease, hepatitis B or C, one or more chronic conditions, and any disability. Collaboration between health and criminal justice systems is needed to accommodate the health needs and supervision requirements for individuals with community supervision.

Keywords

community supervision, probation, parole, chronic disease, disability

Chronic conditions and disability are more prevalent among adults who are incarcerated or have a history of incarceration compared to the general population (Binswanger et al., 2009; Bronson et al., 2015; Schnittker & John, 2007; Wang & Green, 2010; Wang et al., 2017). However, adults in jail and prison comprise only one third of the correctional population in the United States (US). In 2016, more than 4.54 million (or 1 in 55) U.S. adults were on community supervision compared with 2.16 million who were incarcerated (Kaeble, 2018; Kaeble & Cowhig, 2018). Over 80% of adults under

[1] Division of General Internal Medicine, Department of Medicine, Hennepin Healthcare, Minneapolis, MN, USA
[2] Hennepin Healthcare Research Institute, Minneapolis, MN, USA
[3] Robina Institute for Criminal Law and Criminal Justice, Law School, University of Minnesota, Minneapolis, MN, USA
[4] Department of Sociology, University of Minnesota, Minneapolis, MN, USA
[5] Department of Pediatrics, Medical School, University of Minnesota, Minneapolis, MN, USA

Corresponding Author:
Tyler N. A. Winkelman, MD, Hennepin County Medical Center, 701 Park Ave., S2.309, Minneapolis, MN 55415, USA.
Email: tyler.winkelman@hcmed.org

community supervision are on probation (i.e., court-ordered community supervision for a misdemeanor or felony-level offense) and the remainder are on parole (i.e., postrelease supervision following a period of incarceration in prison for a felony-level offense; Kaeble & Glaze, 2016).

Under both forms of community supervision, individuals are tasked with remaining arrest-free while meeting a series of supervision demands including regular meetings with probation or parole officers, drug and alcohol screens, travel and curfew restrictions, and work and programming requirements (Doherty, 2015; Klingele, 2013). Failure to meet these demands is a key driver of rising incarceration rates (Harding et al., 2017; Phelps, 2018a). The overlap between incarcerated and community correctional populations is substantial; just under half of adults in jails and prisons were under community supervision at the time of their arrest (Phelps, 2018b). Although health may play an important role in one's ability to meet the conditions of community supervision, little is known about the physical health and disability of this population, with the exception of one analysis from 2009 that found U.S. community supervisees have higher odds of asthma and sexually transmitted infections (Vaughn et al., 2012).

Individuals on community supervision may be at increased risk of poor health for a number of reasons. First, justice system involvement is concentrated among the most economically and socially disadvantaged, populations known to be at risk of poor health outcomes (Chetty et al., 2016). Probation, for example, is most prevalent among young African American and Hispanic men with low levels of formal schooling (Phelps, 2018b). In the early 2010s, one in six African American men aged 20 to 34 years without a high school diploma was under probation supervision in the past year (Phelps, 2018b). Second, the demands of probation may interfere with one's ability to access needed health care, generate stress and anxiety, or create barriers to certain health promoting behaviors (e.g., exercise). Third, adults on probation and parole, especially the disproportionate number of young African American men in this population, are vulnerable to failing on probation and cycling in and out of jail or prison, which increases stress and exposure to communicable diseases (Schnittker & John, 2007; Wildeman & Wang, 2017). However, supervision may paradoxically improve health if it connects adults to needed services that were previously unavailable or underutilized, just as incarceration can (temporarily) improve health for certain populations with chronic conditions (Wildeman & Wang, 2017; Yu et al., 2015).

In this article, we use nationally representative data to estimate a broad set of chronic health conditions, including chronic obstructive pulmonary disease (COPD), hepatitis B and C, and HIV, among community supervisees in the United States. We also provide estimates of disability among U.S. adults on community supervision. Understanding the health of individuals on community supervision can inform future interventions to improve well-being among this population and reduce health-related barriers to successful completion of community supervision.

Method

Data and Sample

We pooled data from the 2015 and 2016 National Survey on Drug Use and Health (NSDUH), a nationally representative, household survey of individuals aged 12 and older residing in the United States (Center for Behavioral Health Statistics and Quality, 2018a, 2018b). Individuals living in noninstitutional group housing (e.g., college dormitories, but not jails or prisons) or in temporary housing (e.g., residence in a shelter) are included in the survey. The NSDUH employs a multistage area probability sample for each U.S. state and the District of Columbia and uses both computer-assisted personal interviewing with an interviewer present, as well as audio computer-assisted self-interviewing to support confidential and private responses. We limited our sample to nonelderly

U.S. adults aged 18 to 64 (herein referred to as adults) because > 97% of individuals on community supervision are in this age group (Kaeble & Glaze, 2016).

Independent Variable

Each respondent was asked "Were you on probation at any time during the past 12 months?" and "Were you on parole, supervised release, or other conditional release from prison at any time during the past 12 months?" Individuals who responded "yes" to either questions were identified as having been on community supervision in the past year. Those who had missing data (<1%) were removed from the sample.

Dependent Variables

We assessed self-reported health (excellent/very good/good vs. fair/poor), chronic conditions, and disability. Chronic conditions were identified if a respondent reported ever having been told by a health professional that they had one or more of the following conditions: a heart condition, diabetes, COPD, hepatitis B or C, kidney disease, current asthma, HIV/AIDS, cancer excluding nonmelanoma skin cancer, and high blood pressure. These conditions represent 9 of the 20 chronic conditions identified by the U.S. Department of Health and Human Services (DHHS) to standardize measurement of chronic conditions across the U.S. population (Goodman et al., 2013).

Disability was identified using a 6-item set of questions recommended by the DHHS (2011) to estimate disability prevalence. The scale measures disability in terms of vision ("Are you blind or do you have serious difficulty seeing, even when wearing glasses?"), hearing ("Are you deaf or do you have serious difficulty hearing?"), cognition ("Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?"), mobility ("Do you have serious difficulty walking or climbing stairs?"), activities of daily living ("Do you have difficulty dressing or bathing?"), and instrumental activities of daily living ("Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?"). These measures were introduced in the NSDUH in 2015 to comply with the Patient Protection and Affordable Care Act, marking the first time estimates of disability were available among U.S. adults on community supervision (Center for Behavioral Health Statistics and Quality, 2016).

Sociodemographic Characteristics and Substance Use

We examined sociodemographic characteristics of our cohort including age, sex, race/ethnicity, educational attainment, marital status, and illicit substance use in the past year. Illicit substance use included any cocaine, heroin, methamphetamine, hallucinogen, or inhalant use or nonmedical use of prescription opioids, stimulants, sedatives, or tranquilizers. We controlled for these factors in our adjusted models to estimate differences in health across supervision status, holding constant differences in demographic and substance use characteristics.

Statistical Analysis

We first compared sociodemographic characteristics and substance use among adults on community supervision to adults who reported no community supervision in the past year. Significance testing was performed by using Pearson's χ^2 tests and t tests.

Next, we estimated the unadjusted and adjusted prevalence of chronic conditions and disability for both groups, using bivariate and multivariable logistic regression models with predictive margins. We used unadjusted and adjusted Poisson regression models with predictive margins to

Table 1. Characteristics of Study Population by Community Supervision Status—United States, 2015/2016.

Characteristic	Weighted % [95% CI]		*p* Value
	Community Supervision Population ($N = 2,284$)	General Population ($N = 76,477$)	
Male	70.4 [67.8, 73.0]	48.5 [48.0, 49.0]	<.001
Race/ethnicity			<.001
White	53.9 [50.5, 57.2]	61.7 [60.8, 62.5]	
African American	19.1 [16.9, 21.6]	12.3 [11.9, 12.8]	
Hispanic	20.9 [18.0, 24.3]	17.4 [16.9, 18.0]	
Other	6.0 [4.7, 7.8]	8.6 [8.2, 9.1]	
Mean age	36.0 [35.1, 36.8]	40.9 [40.7, 41.1]	<.001
Education			<.001
Less than high school	24.1 [21.5, 26.9]	12.4 [12.0, 12.8]	
High school	37.3 [34.7, 40.0]	24.4 [23.9, 24.9]	
Some college	31.7 [28.9, 34.7]	32.1 [31.6, 32.6]	
College graduate	6.9 [5.2, 9.0]	31.1 [30.4, 31.8]	
Married	25.4 [22.8, 28.2]	51.0 [50.3, 51.7]	<.001
Illicit substance use in the past year	46.0 [43.5, 48.5]	20.8 [20.3, 21.3]	<.001

Note. CI = confidence interval.

estimate prevalence of chronic conditions and disabilities per 100 individuals because these data were not normally distributed.

We used Stata MP Version 15.1 (StataCorp, College Station, TX) to account for the NSDUH's complex survey design and considered two-sided $p < .05$ to be statistically significant. Our study was exempt from human subjects review per Hennepin Healthcare Research Institute's policy on publicly available, de-identified data sets.

Results

Our sample consisted of 78,761 adults, representative of 4,594,412 individuals on community supervision in the past year and 191,156,710 with no community supervision in the past year. Compared with those who reported no community supervision, individuals on community supervision in the past year were more likely to be male, African American or Hispanic, younger, without a high school diploma, and unmarried (Table 1). Illicit substance use in the past year was significantly more common among individuals recently on community supervision compared with the general population (46.0% vs. 20.8%; $p < .001$).

In unadjusted analyses, individuals on community supervision in the past year were significantly more likely to report fair or poor health or a diagnosis of COPD or hepatitis B or C compared with the general population (Table 2). Conversely, those on community supervision were less likely to report a cancer (excluding nonmelanoma skin cancer) or hypertension diagnosis than the general population. Individuals on community supervision also reported significantly higher levels of each category of disability, except for hearing-related disability.

In adjusted analyses (Table 2), individuals on community supervision in the past year were significantly more likely to report fair/poor health (15.7% vs. 12.0%; $p < .001$), one or more chronic conditions (35.1% vs. 31.0%; $p = .003$), and a higher burden of total chronic conditions (51.0 chronic conditions per 100 individuals vs. 43.7 per 100 individuals; $p = .02$) compared with individuals without community supervision in the past year. Among the chronic conditions examined, adults on community supervision were significantly more likely to report a diagnosis of COPD

Table 2. Health and Disability Characteristics by Community Supervision Status—United States, 2015/2016.

	Weighted % [95% CI]					
	Unadjusted			Adjusted[a]		
Characteristic	Community Supervision	General Population	*p* Value	Community Supervision	General Population	*p* Value
Self-reported health						
Fair/poor health	19.9 [17.5, 22.2]	11.9 [11.5, 12.3]	<.001	15.7 [12.8, 17.6]	12.0 [11.6, 12.3]	<.001
Chronic conditions						
Heart condition	5.9 [4.2, 7.7]	6.2 [5.9, 6.5]	.77	6.6 [4.6, 8.7]	6.2 [5.8, 6.5]	.66
Diabetes	8.3 [6.5, 10.1]	7.7 [7.4, 8.0]	.49	9.7 [7.5, 11.9]	7.7 [7.4, 8.0]	.06
COPD	4.9 [3.5, 6.3]	3.1 [2.9, 3.3]	.02	5.0 [3.5, 6.4]	3.1 [2.9, 3.3]	.02
Hepatitis B or C	3.8 [2.6, 5.0]	1.2 [1.1, 1.3]	<.001	3.2 [2.2, 4.3]	1.2 [1.1, 1.3]	<.001
Kidney disease	2.1 [1.1, 3.2]	1.2 [1.1, 1.4]	.11	2.5 [1.3, 3.7]	1.2 [1.1, 1.4]	.05
Asthma	6.7 [5.2, 8.3]	6.3 [6.1, 6.5]	.57	7.2 [5.5, 8.8]	6.3 [6.1, 6.5]	.29
HIV	0.6 [0.2, 1.1]	0.2 [0.2, 0.3]	.07	0.3 [0.1, 0.6]	0.2 [0.2, 0.3]	.41
Cancer	1.0 [0.4, 1.6]	2.9 [2.7, 3.1]	<.001	1.7 [0.8, 2.7]	2.9 [2.7, 3.1]	.02
Hypertension	10.0 [7.9, 12.1]	14.9 [14.6, 15.3]	<.001	13.1 [10.5, 15.6]	14.8 [14.5, 15.2]	.18
One or more conditions	30.8 [27.9, 33.7]	31.1 [30.5, 31.6]	.86	35.1 [32.4, 37.9]	31.0 [30.4, 31.5]	.003
Per 100 individuals (*n*)	43.5 [38.4, 48.6]	43.9 [42.9, 44.9]	.89	51.0 [44.8, 57.1]	43.7 [42.7, 44.7]	.02
Disability						
Vision	6.0 [4.6, 7.4]	3.7 [3.5, 3.9]	.001	4.9 [3.8, 6.0]	3.7 [3.5, 3.9]	.04
Cognitive	16.6 [14.6, 18.6]	7.1 [6.8, 7.4]	<.001	12.4 [10.7, 14.1]	7.2 [6.9, 7.4]	<.001
Mobility	10.3 [7.9, 12.7]	6.1 [5.9, 6.4]	.001	9.8 [7.8, 11.8]	6.1 [5.9, 6.4]	.001
ADLs	3.6 [2.2, 5.0]	2.0 [1.8, 2.2]	.03	2.8 [1.7, 3.9]	2.0 [1.8, 2.2]	.16
IADLs	9.9 [8.0, 11.9]	4.2 [3.9, 4.4]	<.001	7.6 [6.0, 9.2]	4.2 [4.0, 4.5]	<.001
Hearing	3.8 [2.6, 4.9]	2.9 [2.7, 3.1]	.14	3.4 [2.3, 4.5]	2.9 [2.7, 3.1]	.36
Any disability	27.6 [25.1, 30.2]	15.6 [15.2, 16.1]	<.001	23.1 [20.9, 25.3]	15.7 [15.3, 16.1]	<.001
Per 100 individuals (*n*)	50.1 [43.3, 57.0]	26.0 [25.0, 26.9]	<.001	40.7 [35.2, 46.3]	26.1 [25.2, 27.1]	<.001

Note. CI = confidence interval; COPD = chronic obstructive pulmonary disease; ADLs = activities of daily living; IADLs = instrumental activities of daily living.

[a]Adjusted estimates control for age, sex, race/ethnicity, educational attainment, marital status, and any illicit substance use in the past year.

(5.0% vs. 3.1%; $p = .02$), hepatitis B or C (3.2% vs. 1.2%; $p < .001$), and kidney disease (2.5% vs. 1.2%; $p = .047$) compared to adults with no community supervision in the past year. Cancer prevalence remained significantly higher among the general population.

Individuals on community supervision in the past year were also significantly more likely to report any disability (23.1% vs. 15.7%; $p < .001$) and a higher total number of disabilities (40.7 disabilities per 100 individuals vs. 26.1 per 100 individuals; $p < .001$) compared to individuals with no community supervision (Table 2). In particular, adults on community supervision were substantially more likely to report a disability related to vision (4.9% vs. 3.7%; $p = .04$), cognition (12.4% vs. 7.2%; $p < .001$), mobility (9.8% vs. 6.1%; $p = .001$), or instrumental activities of daily living (7.6% vs. 4.2%; $p < .001$) compared to adults without community supervision in the past year.

Discussion

Among a nationally representative sample of U.S. adults, we examined the prevalence of chronic conditions and disability among individuals recently on community supervision, a population that

comprises the majority of individuals involved in the U.S. criminal justice system (Kaeble & Cowhig, 2018). Adults on community supervision in the past year reported a significantly higher burden of chronic conditions and disability than adults with no recent community supervision. After adjustment for important demographic differences and illicit substance use, we found a significantly higher prevalence of COPD; hepatitis B or C; kidney disease; and disabilities related to vision, cognition, mobility, or instrumental activities of daily living (e.g., buying groceries or visiting a doctor's office) among individuals recently on community supervision compared to those with no recent community supervision. One quarter of individuals on community supervision in the past year reported any disability. Given the high prevalence of chronic conditions and disability among individuals recently on community supervision, access to health care, ideally that is also responsive to the demands of community supervision, is critical.

Our results also have important implications for service providers within community corrections. Probation and parole offices, as well as sentencing bodies, should be mindful of the specific health needs of this population and how these needs may impact successful completion of community supervision requirements. Chronic conditions, especially if left untreated, may prevent adults from successfully meeting the demands of supervision without reincarceration. Future research should examine whether screening and referral for chronic disease and disability management among this population could improve health outcomes while on probation. Screening for these conditions may also identify barriers to successful completion of supervision conditions.

The health conditions and disabilities noted in this study are likely related to health behaviors and experiences common among individuals with a history of criminal justice involvement. For example, the majority of individuals with a history of incarceration report smoking cigarettes (Parker et al., 2014). In prisons where smoking is banned, individuals return to smoking within days after they are released (Clarke et al., 2013). Differences in hepatitis B or C prevalence are likely due to higher levels of intravenous drug use among individuals involved in the criminal justice system (Rich et al., 2014), and cognitive disabilities may be related to traumatic brain injury, which is significantly more common among justice-involved individuals (Farrer & Hedges, 2011). Notably, significant associations between community supervision and health persisted even after controlling for illicit substance use. Therefore, factors beyond health behaviors, like housing, racism, and access to health care, may also contribute to disparities in health noted in our study (Hardeman et al., 2018; Vickery et al., 2018; Winkelman et al., 2016). For example, we found that cancer prevalence was lower among individuals recently on community supervision, which may be related to lower rates of screening and detection among this population (Binswanger et al., 2005).

Limitations

Results should be interpreted in the context of important limitations. For example, we used cross-sectional data, which prevents us from identifying a causal relationship between community supervision and health. In addition, NSDUH lacks important information regarding supervision intensity and conditions (e.g., mandated drug treatment programs) that may be directly and indirectly related to health. Finally, adults who were revoked to jail or prison or were homeless while under supervision are excluded from NSDUH and are likely to have more health needs than the supervised population in our study (Vickery et al., 2018).

Public Health Implications

This study provides the most recent adjusted prevalence estimates of physical health and the only estimates, to our knowledge, of disability among U.S. adults recently on community supervision. Although supervision conditions within the contemporary criminal justice system are largely

punitive, community supervision could serve as an opportunity to connect individuals with complex health profiles to needed services. Additional research is needed to identify the impact of health status and health care service use on community supervision outcomes.

Authors' Note

The funding bodies were not involved in the design, conduct, or reporting of the study or in the decision to submit the manuscript for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of Hennepin Healthcare or the University of Minnesota.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Dr. Winkelman receives funding through a career development award from Hennepin Healthcare. All authors receive financial support from the University of Minnesota Grand Challenges Research Initiative.

ORCID iD

Tyler N. A. Winkelman, MD https://orcid.org/0000-0002-9581-5223

References

Binswanger, I. A., Krueger, P. M., & Steiner, J. F. (2009). Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population. *Journal of Epidemiology and Community Health*, *63*(11), 912–919. https://doi.org/10.1136/jech.2009.090662

Binswanger, I. A., White, M. C., Pérez-Stable, E. J., Goldenson, J., & Tulsky, J. P. (2005). Cancer screening among jail inmates: Frequency, knowledge, and willingness. *American Journal of Public Health*, *95*(10), 1781–1787. https://doi.org/10.2105/AJPH.2004.052498

Bronson, J., Maruschak, L. M., & Berzofsky, M. (2015). *Disabilities among prison and jail inmates*, *2011–12* (NCJ 249151). Bureau of Justice Statistics. https://www.bjs.gov/content/pub/pdf/dpji1112.pdf

Center for Behavioral Health Statistics and Quality. (2016). *2015 National Survey on Drug Use and Health: Summary of the effects of the 2015 NSDUH questionnaire redesign: Implications for data users*. Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/sites/default/files/NSDUH-TrendBreak-2015.pdf

Center for Behavioral Health Statistics and Quality. (2018a). *2015 National Survey on Drug Use and Health: Public use file codebook*. Substance Abuse and Mental Health Services Administration. https://samhda.s3-us-gov-west-1.amazonaws.com/s3fs-public/field-uploads-protected/studies/NSDUH-2015/NSDUH-2015-datasets/NSDUH-2015-DS0001/NSDUH-2015-DS0001-info/NSDUH-2015-DS0001-info-codebook.pdf

Center for Behavioral Health Statistics and Quality. (2018b). *2016 National Survey on Drug Use and Health: Public use file codebook*. Substance Abuse and Mental Health Services Administration. http://samhda.s3-us-gov-west-1.amazonaws.com/s3fs-public/field-uploads-protected/studies/NSDUH-2016/NSDUH-2016-datasets/NSDUH-2016-DS0001/NSDUH-2016-DS0001-info/NSDUH-2016-DS0001-info-codebook.pdf

Chetty, R., Stepner, M., Abraham, S., Lin, S., Scuderi, B., Turner, N., Bergeron, A., & Cutler, D. (2016). The association between income and life expectancy in the United States, 2001–2014. *JAMA*, *315*(16), 1750–1766. https://doi.org/10.1001/jama.2016.4226

Clarke, J. G., Stein, L. A. R., Martin, R. A., Martin, S. A., Parker, D., Lopes, C. E., McGovern, A. R., Simon, R., Roberts, M., Friedman, P., & Bock, B. (2013). Forced smoking abstinence: Not enough for smoking cessation. *JAMA Internal Medicine*, *173*(9), 789–794. https://doi.org/10.1001/jamainternmed.2013.197

Doherty, F. (2015). Obey all laws and be good: Probation and the meaning of recidivism. *Georgetown Law Journal*, *104*(2), 291–354. https://georgetownlawjournal.org/articles/26/obey-all-laws-be/pdf

Farrer, T. J., & Hedges, D. W. (2011). Prevalence of traumatic brain injury in incarcerated groups compared to the general population: A meta-analysis. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *35*(2), 390–394. https://doi.org/10.1016/j.pnpbp.2011.01.007

Goodman, R. A., Posner, S. F., Huang, E. S., Parekh, A. K., & Koh, H. K. (2013). Defining and measuring chronic conditions: Imperatives for research, policy, program, and practice. *Preventing Chronic Disease*, *10*, E66. https://doi.org/10.5888/pcd10.120239

Hardeman, R. R., Murphy, K. A., Karbeah, J., & Kozhimannil, K. B. (2018). Naming institutionalized racism in the public health literature: A systematic literature review. *Public Health Reports*, *133*(3), 240–249. https://doi.org/10.1177/0033354918760574

Harding, D. J., Morenoff, J. D., Nguyen, A. P., & Bushway, S. D. (2017). Short- and long-term effects of imprisonment on future felony convictions and prison admissions. *Proceedings of the National Academy of Sciences*, *114*(42), 11103–11108. https://doi.org/10.1073/pnas.1701544114

Kaeble, D. (2018). *Probation and parole in the United States*, *2016* (NCJ 251148). Bureau of Justice Statistics. https://www.bjs.gov/content/pub/pdf/ppus16.pdf

Kaeble, D., & Cowhig, M. (2018). *Correctional populations in the United States*, *2016* (NCJ 251211). Bureau of Justice Statistics. https://www.bjs.gov/content/pub/pdf/cpus16.pdf

Kaeble, D., & Glaze, L. (2016). *Correctional populations in the United States*, *2015* (NCJ 250374). Bureau of Justice Statistics. https://www.bjs.gov/content/pub/pdf/cpus15.pdf

Klingele, C. (2013). Rethinking the use of community supervision. *Journal of Criminal Law and Criminology*, *103*(4), 1015–1069. https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=7463&context=jclc

Parker, D. R., Fallone, D., Martin, R. A., Stein, L. A. R., Bock, B., Martin, S. A., Roberts, M. B., Lopes, C. E., & Clarke, J. J. (2014). The relation between smoking status and medical conditions among incarcerated adults. *Journal of Addiction Medicine*, *8*(2), 90–95. https://doi.org/10.1097/ADM.0b013e3182a96466

Phelps, M. S. (2018a). Ending mass probation: Sentencing, supervision, and revocation. *Future of Children*, *28*(1), 125–146.

Phelps, M. S. (2018b). Mass probation and inequality: Race, class, and gender disparities in supervision and revocation. In J. T. Ulmer & M. S. Bradley (Eds.), *Handbook on punishment decisions: Locations of disparity* (pp. 43–66). Routledge.

Rich, J. D., Allen, S. A., & Williams, B. A. (2014). Responding to hepatitis C through the criminal justice system. *New England Journal of Medicine*, *370*(20), 1871–1874. https://doi.org/10.1056/NEJMp1311941

Schnittker, J., & John, A. (2007). Enduring stigma: The long-term effects of incarceration on health. *Journal of Health and Social Behavior*, *48*(2), 115–130. https://doi.org/10.1177/002214650704800202

U.S. Department of Health and Human Services. (2011). *Implementation guidance on data collection standards for race, ethnicity, sex, primary language, and disability status*. https://aspe.hhs.gov/basic-report/hhs-implementation-guidance-data-collection-standards-race-ethnicity-sex-primary-language-and-disability-status

Vaughn, M. G., DeLisi, M., Beaver, K. M., Perron, B. E., & Abdon, A. (2012). Toward a criminal justice epidemiology: Behavioral and physical health of probationers and parolees in the United States. *Journal of Criminal Justice*, *40*(3), 165–173. https://doi.org/10.1016/j.jcrimjus.2012.03.001

Vickery, K. D., Bodurtha, P., Winkelman, T. N. A., Hougham, C., Owen, R., Legler, M. S., Erickson, E., & Davis, M. M. (2018). Cross-sector service use among high health care utilizers in Minnesota after Medicaid expansion. *Health Affairs*, *37*(1), 62–69. https://doi.org/10.1377/hlthaff.2017.0991

Wang, E. A., & Green, J. (2010). Incarceration as a key variable in racial disparities of asthma prevalence. *BMC Public Health*, *10*, 290. https://doi.org/10.1186/1471-2458-10-290

Wang, E. A., Redmond, N., Dennison Himmelfarb, C. R., Pettit, B., Stern, M., Chen, J., Shero, S., Iturriaga, E., Sorlie, P., & Diez Roux, A. V. (2017). Cardiovascular disease in incarcerated populations. *Journal of the American College of Cardiology*, *69*(24), 2967–2976. https://doi.org/10.1016/j.jacc.2017.04.040

Wildeman, C., & Wang, E. A. (2017). Mass incarceration, public health, and widening inequality in the USA. *The Lancet*, *389*(10077), 1464–1474. https://doi.org/10.1016/S0140-6736(17)30259-3

Winkelman, T. N., Kieffer, E. C., Goold, S. D., Morenoff, J. D., Cross, K., & Ayanian, J. Z. (2016). Health insurance trends and access to behavioral healthcare among justice-involved individuals—United States, 2008–2014. *Journal of General Internal Medicine*, *31*(12), 1523–1529. https://doi.org/10.1007/s11606-016-3845-5

Yu, S. V., Sung, H.-E., Mellow, J., & Koenigsmann, C. J. (2015). Self-perceived health improvements among prison inmates. *Journal of Correctional Health Care*, *21*(1), 59–69. https://doi.org/10.1177/1078345814558048