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Exploring Inmate Health in Prison: Health Issues, Interventions, and Suggestions to Improve Care

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Introduction

The United States has the highest number of prisoners per capita at 639 people per 100,000[8]. There has been a fivefold increase in the number of inmates in the United States prison systems since 1970[44], and this may be a major contributor to the corrections healthcare system having trouble keeping up with this growth compared to the general population of the United States.

According to the World Health Organization, the United States has documented higher mortality rates than many other developed countries. Rates of conditions such as cardiovascular disease have decreased everywhere, but much less in the United States. In addition, the United States had the second-leading mortality from noncommunicable diseases and fourth highest from communicable diseases (see Appendix 1). The Bureau of Justice Statistics found that in 2019, 89% of deaths in state prisons were from any sort of illness, chronic or infectious[45]. There is also a high rate of psychiatric conditions, respiratory diseases, diabetes, and other endocrine disorders, genitourinary disease, congenital anomalies, infectious diseases, and perinatal conditions in the United States [10]. The United States has the lowest life expectancy compared to the United Kingdom and Australia which have similar healthcare expenditures for a developed country (see Appendix 2).

The United States government and the state prison systems spend similar percentages of their budget, around 18%[10], on healthcare yet the prevalence of different conditions and access to treatment is different. This paper will discuss health issues prevalent among inmates compared to the United States adult population, medical interventions currently available for each issue, suggestions to improve access and care, and an interview with a former prison nurse discussing her experience.

Common Health Issues Among Inmates and Interventions

Chronic Disease

Nearly 60% of all Americans live with some sort of chronic disease [13]. These conditions such as cardiovascular disease are becoming the leading cause of death among inmates[2]. Cardiovascular disease can be much more common in inmates due to the higher rate of cigarette smoking and high levels of salt in the food provided[2] (see Figure 1). Researchers analyzed the nutrient content of the food being provided in state prisons and found that there was twice the recommended amount of salt and a high level of carbohydrates in each meal. The pre-packaged snacks that are available for inmates to purchase are also often high in sugar, fat, and salt[2]. These nutritional deficits can lead to obesity, which

is a comorbidity to many chronic diseases. According to the Centers for Disease Control and Prevention, 695,547 people in the United States died from heart disease in 2021, leading it to be the top cause of death for the general population. Asthma is also much more commonly seen in prisons than in the rest of U.S. adults. As of 2016, 16.7% of people in state prisons were diagnosed with asthma while only 8% of U.S adults were diagnosed. Asthma may be more prevalent in these incarcerated populations due to substandard living environments, tobacco exposure, lack of access to providers, and lower socioeconomic status of inmates 40. The rate of Hepatitis B is also three times as high as in those not imprisoned37 due to a higher rate of blood-borne pathogen transmission. Hepatitis B can be both acute and chronic, with chronic Hepatitis B lasting six months or more. See Figure 2 for chronic disease prevalence between people in state prisons and the general United States population.

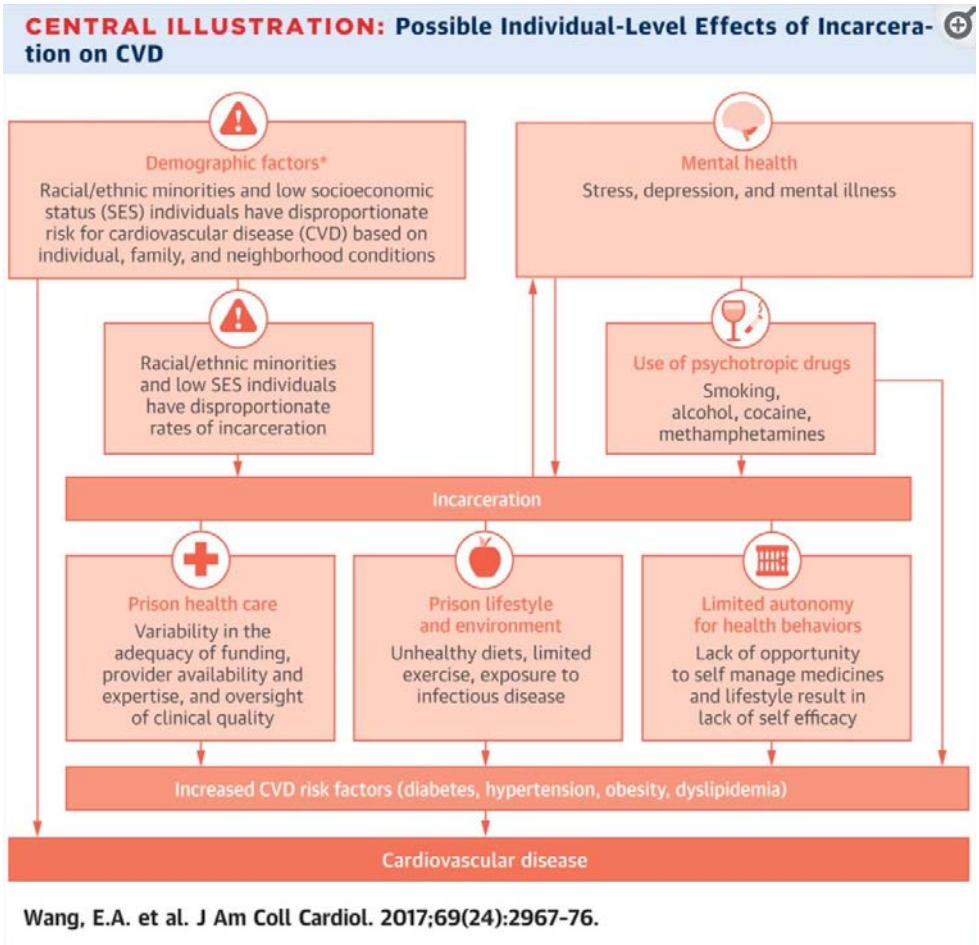


Figure 1: *Effects of Incarceration on Cardiovascular Disease*

Note: From "Cardiovascular Disease in Incarcerated Populations", by E.A. Wang., N Redmond, C.R. Dennison Himmelfarb, B. Pettit, M. Stern, J. Chen, S. Shero, E. Iturriaga, P. Sorlie & A.V. Diez Roux. Journal of the American College of Cardiology. Copyright 2017 by the American College of Cardiology Foundation. [49]

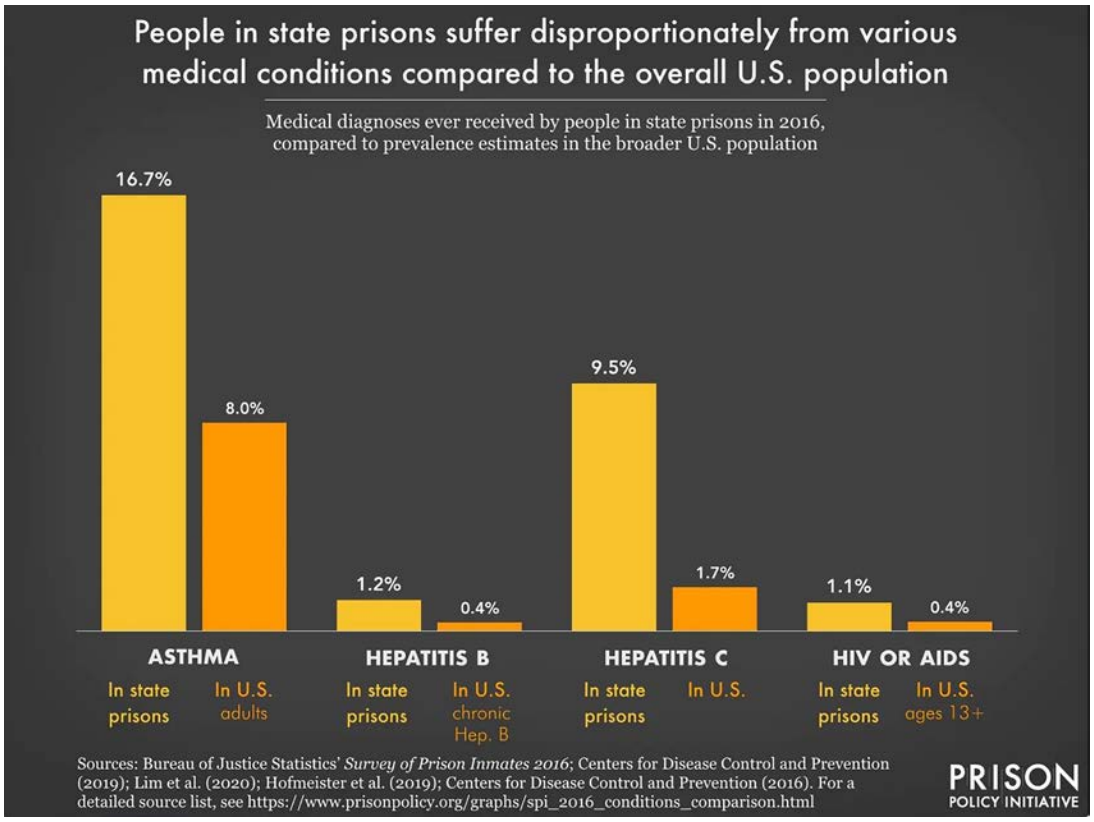


Figure 2: *Prevalence of Chronic Diseases in Incarcerated Populations Compared to U.S. Adult Population*

Note. From "Chronic Punishment: The unmet health needs of people in state prisons", by L. Wang. Prison Policy Initiative. Copyright 2022 by Prison Policy Initiative.

Interventions

The federal guidelines say that tuberculosis screening, vaccinations, audiograms for those at risk, colorectal cancer screening for those 50-74, and blood pressure screening for at-risk groups should be conducted annually. Every two years females between the ages of 50-74 should receive a breast cancer screening, and labs should be screened every 3-5 years [41]. Regarding medications inmates had before incarceration, daily medications must be approved by a provider before being administered. This approval can often take weeks after intake and outside medications from home are often not allowed to be dispensed [39].

Substance Use Disorder

Another common chronic disease is substance use disorder. Male inmates have a slightly greater prevalence of alcohol dependence than the public but have up to ten times the prevalence of drug dependence[2]. Female inmates also have a much greater prevalence of drug and alcohol dependence than male inmates. They tend to have up to four times the prevalence of alcohol dependence and thirteen times the prevalence of drug dependence[2]. According to the National Institute of

Drug Abuse, 65% of the prison population has an active substance use disorder while another 20% don't meet the clinical criteria but were under the influence at the time of their crime[14]. This rate is much higher than the national statistic of 11.7% throughout the United States[35].

Interventions

Medication-assisted treatments such as methadone and buprenorphine are effective at treating opioid withdrawal symptoms and preventing relapse for many people4. Combining these types of medications with therapeutic interventions has proven to be the most effective way to prevent relapse5. Facilitating continued treatment of substance use disorders is also vital to the prevention of relapse once released. It must be ensured that an individual has the support they need from being in a highly structured environment to being on their own. Without any type of support after incarceration, individuals are very likely to relapse. According to one cross-sectional study, 18% relapsed their illicit drug use and 23% relapsed with alcohol use soon after release when given no resources post-release[19].

Mental Health

Mental health is a major chronic issue that must be dealt with once incarcerated. A systematic review found that psychiatric illnesses in inmates are two to four times higher than in the general population and antisocial personality disorder is ten times higher[2]. According to the chart below, a majority of state prison inmates had a history of mental illness[16]. Suicide is also a major cause of death in prisons, accounting for nearly half of the deaths while in custody[2]. Properly treating mental illness is so crucial because these figures continue to increase. From 2001 to 2019, the number of suicides increased by 85% in state prisons, 61% in federal prisons, and 13% in local jails[15]. The general population had a rate of 22 deaths by suicide per 100,000 in 2019 while state prison inmates had 25 deaths per 100,000 [45]. See Table 1 for the prevalence of mental health problems among prison and jail inmates from the Bureau of Justice Statistics.

Interventions

Prisons are constitutionally obligated to provide mental healthcare, as concluded in *Bowring v. Godwin 551 F.2d 44, 1977* and *Estelle v. Gamble 429 U.S. 97, 1976.* It is also required by law that there is assessment and screening, treatment beyond seclusion and observation, provision by mental health professionals, record keeping, safe provision of psychotropic medications, and suicide prevention efforts. Although these resources are supposed to be readily available to those who need them, only approximately 10% of inmates receive any mental health care and 30% of those with serious diagnoses such as schizophrenia don't receive medication or psychotherapy[26].

Communicable Diseases

Infectious diseases are very common in these crowded settings. Infection control is often minimal, and it can take a long time to be able to receive treatment. Respiratory illnesses such as tuberculosis, influenza, or COVID-19 can spread very quickly due to the inability to properly isolate infected inmates. Proximity, poor diet, hygiene, and lack of awareness of infection status also contribute to an outbreak[2]. A survey of prison inmates in 2016 concluded that 17% of all state prisoners have an infectious disease [46].

Table 2. Prevalence of mental health problems among prison and jail inmates

	State prison inmates		Federal prison inmates		Local jail inmates	
Mental health problem	Number	Percent	Number	Percent	Number	Percent
Any mental health problem*	705,600	56.2%	70,200	44.8%	479,900	64.2%
History and symptoms	219,700	17.5	13,900	8.9	127,800	17.1
History only	85,400	6.8	7,500	4.8	26,200	3.5
Symptoms only	396,700	31.6	48,100	30.7	322,900	43.2
No mental health problem	549,900	43.8%	86,500	55.2%	267,600	35.8%

Note: Number of inmates was estimated based on the June 30, 2005 custody population in State prisons (1,255,514), Federal prisons (156,643, excluding 19,311 inmates held in private facilities), and local jails (747,529).
*Details do not add to totals due to rounding. Includes State prisoners, Federal prisoners, and local jail inmates who reported an impairment due to a mental problem.

Table 1: *Prevalence of Mental Health Problems Among Prison and Jail Inmates*

From "Mental Health Problems of Prison and Jail Inmates", by D.J. James and L.E. Glaze. Bureau of Justice Statistics. Copyright 2006 by the U.S. Department of Justice. [16]

Blood-borne pathogens can also be spread very quickly throughout prisons and jails. The high rate of substance use disorder in these settings means that many inmates may be using intravenous drugs, and with this comes sharing needles. Infections such as HIV and Hepatitis B and C are common due to a lack of clean needles, unprotected sex, and infected tattoo needles. Within the general population, there has only been 2% of people who have contracted acute hepatitis C compared to up to 70% of inmates, especially those who use intravenous drugs [47]. That rate of other sexually transmitted infections is almost twice as prevalent than the general population, according to Table 2.

Interventions

HIV and Other STIs

The most popular programs that have been implemented are HIV prevention programs. Education and primary prevention are the best solutions to help stop the transmission and progression of disease[2]. This has been used regarding HIV through continued education, condom distribution, and needle and syringe exchange programs [4]. Educating prisoners on the stigma of sexual assault can also be effective in reducing HIV and other sexually transmitted infections' mortality and morbidity. Reducing this stigma may allow inmates to seek medical attention faster, which in turn can reduce these rates[4]. For those who have tested positive for HIV, it is required by law that antiretrovirals are available to slow or prevent the progression of symptoms[18].

Influenza-like Illness (ILI)

Annual influenza and COVID-19 vaccine series are supposed to be offered to inmates in all prisons before the

TABLE 1

Prevalence of ever having a chronic condition or infectious disease among state and federal prisoners and the general population (standardized), 2011–12

	State and federal prisoners		General population*[a]	
Chronic condition/infectious disease	Percent	Standard error	Percent	Standard error
Ever had a chronic condition[b]	43.9%**	1.5%	31.0%	0.3%
Cancer	3.5	0.4	/	:
High blood pressure/hypertension	30.2**	1.2	18.1	0.3
Stroke-related problems	1.8**	0.3	0.7	0.1
Diabetes/high blood sugar	9.0**	0.8	6.5	0.2
Heart-related problems[c]	9.8**	1.0	2.9	0.1
Kidney-related problems	6.1	0.7	/	:
Arthritis/rheumatism	15.0	0.9	/	:
Asthma	14.9**	0.9	10.2	0.2
Cirrhosis of the liver	1.8**	0.3	0.2	--
Ever had an infectious disease[d]	21.0%**	1.3%	4.8%	0.2%
Tuberculosis	6.0**	0.6	0.5	0.1
Hepatitis[e]	10.9**	1.0	1.1	0.1
Hepatitis B	2.7	0.4	/	:
Hepatitis C	9.8	1.0	/	:
STDs[f]	6.0**	0.5	3.4	0.1
HIV/AIDS	1.3%**	0.3%	0.4%	0.1%

*Comparison group.

**Difference with comparison group is significant at the 95% confidence level.

--Less than 0.05%.

: Not calculated.

/Not collected in the NSDUH.

[a]General population estimates were standardized to match the prison population by sex, age, race, and Hispanic origin.

[b]Includes only conditions measured by both the NIS and NSDUH. In the NSDUH, persons were asked if a doctor or other medical professional had ever told them that they had high blood pressure, a stroke, diabetes, heart disease, asthma, or cirrhosis of the liver.

[c]For state and federal prisoners, heart-related problems could include angina; arrhythmia; arteriosclerosis; heart attack; coronary, congenital, or rheumatic heart disease; heart valve damage; tachycardia; or other type of heart problem.

[d]Excludes HIV or AIDS due to unknown or missing data. Only those tested reported results.

[e]Includes hepatitis B and C for the prison population and all types of hepatitis for the general population.

[f]Excludes HIV or AIDS.

Source: Bureau of Justice Statistics, National Inmate Survey (NIS), 2011–12; and the Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health (NSDUH), 2009–2012.

Table 2: *Prevalence of Chronic and Infectious Disease in State and Federal Prisoners Compared to the United States General Population*

Note: From "Medical Problems of State and Federal Prisoners and Jail Inmates, 2011–12" by L.M. Maruschak, M. Berzofsky, and J. Unangst. Copyright 2015 by the U.S. Department of Justice.

possibility of an outbreak[20]. In addition to vaccine protocols, hand washing stations are available and encouraged to be used by inmates and staff. Tuberculosis also has a much higher prevalence in these facilities due to the inability to properly diagnose and isolate infected inmates. Those who are experiencing symptoms of active tuberculosis are advised to be placed in a negative pressure room and conduct two-step testing along with a chest x-ray[20]. Personal protective equipment, or PPE, is often unavailable to inmates due to safety concerns.

Gynecological and Obstetrical Health

The number of women being incarcerated is increasing at a rate that is 50% greater than men since 1980[21]. According to the American College of Obstetricians and Gynecologists, approximately 6-10% of incarcerated women are pregnant, and this could be due to the often little access to contraceptives for homeless and low-income women. A cohort of Rhode Island inmates found that only 28% of sexually active female inmates used birth control consistently and 83.6% had unplanned

Figure 3

World Health Organization Recommendations to Reduce HIV Transmission

1. Prison authorities in jurisdictions where condoms are currently not provided should introduce condom distribution programs and expand the implementation to scale as soon as possible.
2. Condoms should be made easily and discreetly accessible to prisoners so that they can pick them up at various locations in the prison, without having to ask for them and without being seen by others.
3. Together with condoms, water-based lubricant should also be provided since it reduces the probability of condom breakage and/or rectal tearing, both of which contribute to the risk of HIV transmission.
4. Education and informational activities for prisoners and staff should precede the introduction of condom distribution programs, which should be carefully prepared.
5. Female prisoners should have access to condoms as well as dental dams.

Note: From "Health Interventions in prison: a literature review", by A. Schwitters. *Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations – 2016 Update.* Copyright 2016 by the World Health Organization. [4]

pregnancies [21]. According to the American College of Obstetrics and Gynecology, 99% of sexually active women within the general population have been on birth control within their lifetime, with 87.5% having a long-lasting and reversible method. For those in the general population that have had unintended pregnancies, this figure is only 49% of pregnancies[48] compared to the 83.6% found in the Rhode Island study.

Gynecological issues are also prevalent in incarcerated women. A systematic review found that there was a higher prevalence of cervical dysplasia and cancer in women involved with corrections[22]. The time from receiving abnormal pap smear results and follow-up testing was also found to be much longer than for those not incarcerated. When a colposcopy [cervical biopsy] is not available on-site, it took an average of 65.5-84 days depending on the type of cells found from abnormal results to follow up testing. On-site testing yielded slightly better results with follow-up testing occurring 42.5- 75 days after abnormal result[22]. Non-incarcerated women had an average of 60 days between an abnormal result and colposcopy[36].

Interventions

Since unplanned pregnancies are prevalent within corrections, abortion is available to those who would like to choose to terminate their pregnancy. This varies greatly depending on access to transportation and abortion laws state-by-state. Prenatal programs have also been put in place in some facilities due to the high-stress environment leading to poorer outcomes such as maternal depression, preterm delivery, and low birth weights. These programs hope to aid in health education, nutrition counseling, fitness, and support from medical professionals. Examples of these programs include Motherhood Behind Bars in Georgia and Infants at Risk in Michigan[24].

Routine gynecological cancer screening is also available while incarcerated. Pap smears are available every 1-5 years depending on the policies within different states. The age for when these become available also varies by state. Many states also don't follow physician guidelines of starting pap smear testing by age 23[25]. Colposcopy biopsies are also available but often take longer to schedule and complete than they would in a typical outpatient office[22].

Suggestions to Improve Care

Improved Primary Care

The primary care that is received while incarcerated is often the only primary care available to these populations since many don't receive non-emergency care once released. There is a severe shortage of providers willing to work in these prisons due to the exceedingly high staff-to-patient ratios and below-average salary[31]. To hire more staff, salaries should be competitive, and better benefits should be offered. Suggestions to improve care would include extended care hours so that patients were not rushed with the provider, an increased number of nurses working so that medication passes can be completed promptly, and more support in finding medical care post-release.

Mental Healthcare

Mental healthcare in prisons has improved over the years, but the reality of what is available is much different than what has been required by law. Many patients report that the mental health assessments they receive lack any kind of empathy or compassion. Some also reported being "overlooked" when trying to receive their psychiatric medications (26). In addition, crisis intervention was also reported to only be available during business hours, with correctional officers left to de-escalate these moments of crisis. One inmate recalls their experience with improper psychiatric care and its detrimental result in Figure 3[26].

To remedy some of the mental healthcare problems in the United States' justice system, the most important factor is time. According to a 2018 study, "Ideal medication management, described as accessible and timely (particularly at initial assessment), could help manage

Testimony of Suicide Attempt in Prison by Inmate

> *"See these scars right here? I had slashed my wrists because I was feeling depressed and stuff... [the correctional officers] put you in a safety cell butt naked. They strip you and all that. Then they're supposed to slide you a garment...It velcros so you can't hang yourself with it. ... They put me in there. I had blood all over me. I was in horrible shape and [the correctional officer] didn't give me a garment for the whole night. ... He came around and was going, "Oh, poor baby [in a baby voice]," which just makes it worse. The thing is, right before the psych staff came in the morning, he slid in [a garment] ...If you're someone that is already traumatized, it makes it a thousand times worse...it's like a very hostile environment and it's scary, because you know you can't win...It's a very powerless feeling, and scary."*

Figure 3

Note: From "It's Not Like Therapy": Patient-inmate perspectives on jail psychiatric services", by L. Jacobs and S.N.J. Giordano. *Administration and Policy in Mental Health and Mental Health Services Research.*

psychiatric symptoms" [26]. Inmates should have enough time to be properly diagnosed by a mental healthcare provider and be able to discuss their medication and psychotherapy options. Facility staff should also have improved training on how to manage crisis interventions and what signs of suicidal ideations are. Caseworkers are also recommended to be more readily available to those who will soon be released so that they can have a plan to manage their mental health on their own and connect them with resources for housing, food, healthcare, and support.

Communicable Disease Prevention

The prevention of communicable diseases and viruses could be improved by providing more supplies within these facilities. Whether it's sexually transmitted infections or the spread of viruses such as influenza, these could be mitigated by providing supplies to inmates. The rate of sexually transmitted infections could be reduced if condoms were readily available. When used correctly, condoms have a 98% effectiveness at preventing the transfer of bodily fluids, in turn reducing the risk of transmission. If consistent use could be established, this would greatly decrease the above-average rate of sexually transmitted infections in prisons. The transmission of HIV from both sex and intravenous drug use could also be decreased by providing high-risk individuals with pre-exposure prophylaxis medication known as PrEP. Providers are currently prohibited from prescribing this medication in these facilities[6]. According to the Centers for Disease Control, PrEP can prevent HIV transmission by 99% when taken as prescribed.

Airborne and droplet virus transmission could also be mitigated by providing basic hygiene supplies. Improving access to hand washing stations is one of the best ways to prevent transmission of infection, helping eliminate the virus before it can spread. Another way to prevent the spread of illness is providing vaccinations to all inmates such as influenza and COVID-19 vaccines before an outbreak can happen. Establishing immunity reduces the risk of serious illness or contracting illness at all, which in turn reduces the need for isolation.

Gynecological and Obstetrical Care

Inmates are provided with very little prenatal and postpartum care and annual exams have been reported to be aggressive and quick. Approximately 6-10% of female inmates are pregnant at the time of admission, with many discovering this as they are being admitted[21]. Many pregnancies in prison result in miscarriage or preterm birth, with rates exceeding 22% and 10%, respectively[27]. High-stress environments can contribute to these above-average statistics, and providing adequate, compassionate care to mothers and fetus is crucial to maintaining the health of both. Many state prison systems have increased rates of miscarriage, premature birth, and cesarean sections than among the general population [27]. Birth in prison can also be a traumatic event emotionally and physically for the mother and baby. Many women have been recorded saying they cried that they are in labor and were ignored, leading them to give birth alone in a cell. A 26-year-old woman in Denver County Jail reported to correctional officers that she was in labor and was told to "wait and see" until she gave birth alone five hours later [42]. In addition to this, more than a dozen states have no laws saying that women are not to be shackled in labor. In a 2018 study of hospital nurses, 82.9% reported that their incarcerated patients were shackled "sometimes to all the time"[28]. After birth, mothers are typically allowed 24 hours

with their newborn, after which the child is placed with a relative or into foster care[29]. Pregnancy, birth, and postpartum care can be improved through increased monitoring during pregnancy, labor, and postpartum as well as improved efforts to reunite inmates with their children after release.

It is often difficult for female inmates to receive the proper healthcare they need in an acceptable amount of time. Procedures such as pelvic exams and pap smears are invasive procedures that are often done in an "assembly line" and feel "degrading"[30]. Facilities should provide more time for in-depth evaluation and be provided with more sensitivity training since they are interacting with this vulnerable population.

A Look into Inmate Healthcare: An Interview with Tiffany O'Keefe, RN

Interview questions are located in Appendix 3

In addition to the information mentioned above, registered nurse Tiffany O'Keefe shared her testimony of what it was like working with inmates in a minimum-security prison. She was employed at the former Massachusetts Correctional Institution in Plymouth, now known as the Massachusetts Alcohol and Substance Abuse Center, for three and a half years. This state prison housed inmates and civilly committed male patients who were deemed a danger to themselves based on their substance use. This facility focused on opioid treatment programs, mental health services, and inpatient detox.

Tiffany's typical day would change depending on what role she was assigned to that day. As a charge nurse in the detox unit, she would assess men on the Clinical Institute Withdrawal Assessment scale, take vital signs, document her assessments, and accompany the attending provider on the exams each morning. She would also work on a unit with medically cleared patients who were completing the rest of their sentences or were committed for a certain period. She would oversee the sick [call] line as well as administer medications for those receiving medication-assisted treatment. If she was not assigned to either of those positions, she would complete medication passes and administer insulin to those who need it.

There were multiple health issues she would see most often and specific protocols on how to treat them. Due to the high number of intravenous drug users, abscesses were very common. The treatment protocol for this would be to drain the abscess and place the patient on an antibiotic. For alcoholics, cirrhosis was the most common health issue. The protocol for this was to weigh patients daily to monitor if they were retaining fluid. If needed, those needing a paracentesis to drain the fluid from their abdomen would have to make an appointment and leave the facility to receive this treatment. According to Tiffany, the facility could handle most medical issues they saw such as full wound care and supervised detox. The only service that was not available on site was a dentist, which was only available to transport once a week.

Since she worked here throughout the COVID-19 pandemic, they often had outbreaks of this infection. Living in a communal space did not allow for much isolation once infected and they were not allowed to have alcohol-based sanitizers due to the nature of the patients they had. The most they were able to do was disinfect surfaces often with alcohol-free sanitizer.

Suicide was also reported to have occurred more than once during her employment at this facility. The protocol for this was standard throughout the Department of Corrections. Security would have to cut the patient down

and medical staff would administer basic life support from there. If they were breathing and had a pulse, they would be placed in a cervical collar and monitored until emergency medical services arrived to transport them to the nearest hospital. If the suicide attempt included cutting, they would apply pressure and tourniquets until help arrived.

Mental health treatment was a priority in her facility. There were several mental health counselors working at a time, and all patients had to be evaluated in their first 48 hours at the facility. Depending on their evaluation, they may be referred to a psychiatrist who was on-site three days a week. There were also crisis counselors available if a patient was deemed to be in crisis and needed to be immediately seen. This treatment was especially important to the patients here because most of them had been committed against their will and forced to detox. While medications such as methadone, Subutex, and Vivitrol were administered to make them more comfortable, they still took a toll on the patients mentally.

She felt her patients were adequately supported with nursing care available 24 hours per day, 7 days per week, and a provider on site from 7 am to 11 pm. While not an everyday occurrence, serious injuries besides suicide attempts did occur. Patients would fight each other or harm themselves, whether it be by accident or intentionally. She also reported that some patients would have heart attacks and be sent out to a hospital for a higher level of care. There was sometimes a wait for medical transport due to the isolated location of this facility, but it was rare that this wait would affect their medical outcome.

Tiffany's suggestions to improve her patients' medical care came down to the equipment that was provided to them. They were not provided cardiac monitors, which can be very important for those experiencing detox or if they were having a medical emergency. In her words, "I think to make things better, newer equipment would make a huge difference".

Based on Tiffany's description, this facility sounds like they are using evidence-based interventions. They are using medication-assisted treatment and psychotherapy to manage substance use disorder in their patients. They are also providing proper medical treatment to those who need it.

Conclusion

Health issues for inmates are just like any other person who is not incarcerated and should be treated as such. Research into healthcare conditions for inmates revealed how many inmates receive substandard care compared to what is recommended by medical providers. In addition, tests are often conducted much less often than guidelines state since it is up to the discretion of the local government. Many inmates feel under-supported and that their concerns are not taken seriously, as detailed by the woman who gave birth alone in Denver County Jail and the personal testimony of the man who felt mistreated after a suicide attempt.

Similarly, to certain demographics having certain health issues more common among them, inmates are the same way. Conditions such as substance use disorder and sexually transmitted infections are more common among inmates due to environmental and behavioral factors. These patterns can also be seen in the interview with Tiffany O'Keefe. Inmates in the facility she worked commonly had the same physical and mental health issues due to these factors. Establishing an enforceable baseline of evidence-based interventions at a federal level for all

prisons to put into place could improve the health of this vulnerable population across the United States, not just in certain facilities.

Appendix 1:

Mortality Rate for Noncommunicable and Communicable Diseases in United States vs. Other Developed Countries

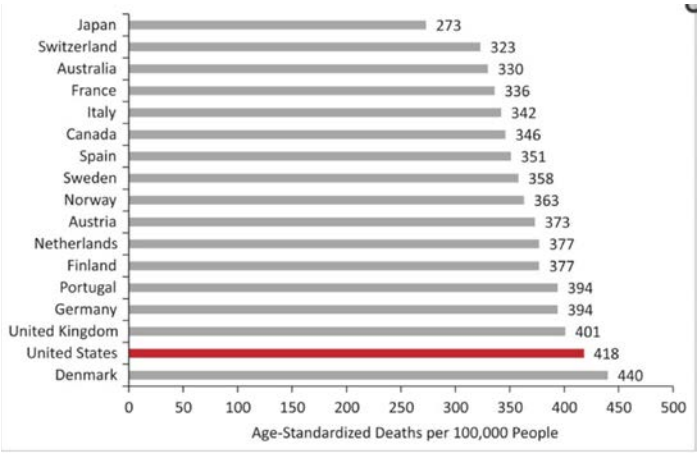


FIGURE 1-1 Mortality from noncommunicable diseases in 17 peer countries, 2008

SOURCE: Data from World Health Organization (2011a, Table 3).

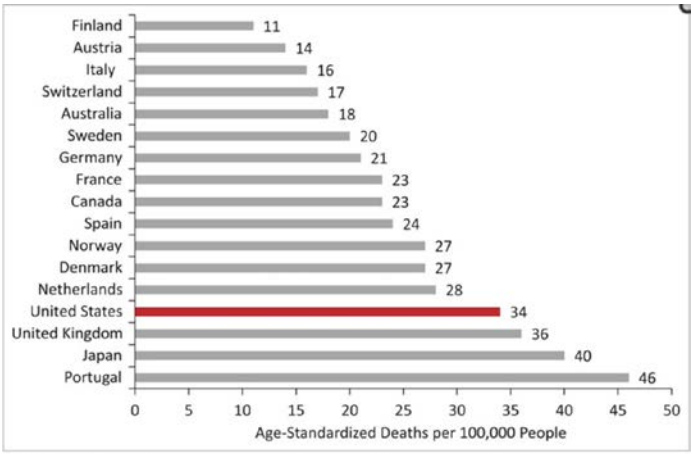


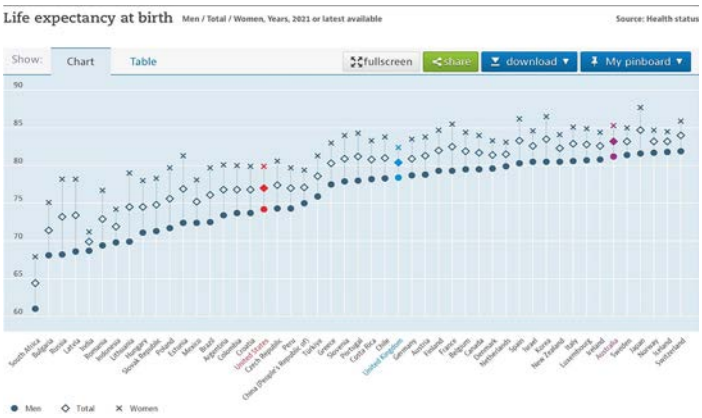
FIGURE 1-2 Mortality from communicable diseases in 17 peer countries, 2008

SOURCE: Data from World Health Organization (2011a, Table 3).

Note: From "U.S. Health in International Perspective: Shorter Lives, Poorer Health", by SH. Woolf and L. Aron. *National Research Council and Institute of Medicine*. Copyright 2013 by National Academy of Sciences.[10]

Appendix 2:

OECD Life Expectancy at Birth, by Country 2021



Appendix 3:

1. What prison were you formerly employed at? How long did you work there?

2. What would your typical workday look like?

3. Discuss what health issues would you see most often.

4. What treatments were available to you? If treatments were not available, could you please provide an example of what you would do?

5. Please discuss the medical support available to inmates.

6. Describe the protocol for serious injuries. How often would this occur? How long does a hospital transfer take? In your opinion, what's the impact on patient outcomes?

7. Describe what mental health treatment looks like in your former facility.

8. Suicide is one of the leading causes of death in prisons, have you witnessed any attempts and please describe the procedures that follow these incidents.

9. Talk about the substance abuse disorder that you witnessed while working at the prison. Describe the treatment protocols.

10. Discuss what communicable diseases were common and what interventions were used to stop the spread of disease.

11. Discuss what chronic diseases besides substance use disorder were common. How were they treated?

12. Insulin and diabetic supplies are often difficult to obtain outside of prisons, please discuss how an inmate would be able to keep their diabetes under control while incarcerated.

13. What would be your recommendations to improve medical treatment there?

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JENNA HEALY

Public Health

Jenna Healy recently graduated with a Bachelor of Science with Departmental Honors in Public Health and a Biology minor. Mentored by Dr. Angela Bailey, Assistant Professor of Health, and Kinesiology, she completed her honors thesis during the 2022-2023 academic year. Growing up in the age of the internet and social media, Jenna was able to listen to the stories of former inmates from across the country and discuss their personal experiences with the prison healthcare systems. These stories inspired her to learn more about the issues with the prison healthcare system and to detail interventions that are currently available while offering suggestions to improve them. Jenna will be attending the University of Massachusetts, Amherst to earn her Master of Public Health in Epidemiology starting in Fall 2023.