Infectious Disease and the Opioid Epidemic: Correctional Health

Josiah “Jody” Rich, MD, MPH
Professor of Medicine and Epidemiology, Brown University
Director of the Center for Prisoner Health and Human Rights,
The Miriam Hospital
JRich@lifespan.org
Disclosures

• Former Alkermes stockholder (completely divested 2017)
Outline

• Epidemic of incarceration

• Epidemic of opioid use disorder

• Overlap with infectious diseases

• and what we can do about it.
THE INMATE NATION
What Are Prisons For?
Trends in U.S. Corrections


Source: Bureau of Justice Statistics Prisoners Series.
Welcome to America, home to 5% of the world’s people & 25% of the world’s prisoners.

Let’s build a better America together. NAACP.org/smartandsafe
Lifetime Likelihood of Imprisonment

**All Men**: 1 in 9

**White Men**: 1 in 17

**Black Men**: 1 in 3

**Latino Men**: 1 in 6

**All Women**: 1 in 56

**White Women**: 1 in 111

**Black Women**: 1 in 18

**Latina Women**: 1 in 45

Prevalence of DSM-IV Diagnoses Among U.S. Prisoners

- Alcohol Dependence: 6% (Recent), 53.9% (Lifetime) - Peters, 1998
- Drug Dependence: 3% (Recent), 37.1% (Lifetime) - Peters, 1998
- Serious Mental Illness: 11% (Recent), 56.2% (Lifetime) - James, 2006
- Dual Diagnosis: 2.5% (Recent), 42.2% (Lifetime) - Baillargeon, 2009
Percent of Total Burden of Infectious Disease passing through Corrections, 1997

- AIDS 16%
- Total HIV/AIDS 20-26%
- Chronic Hepatitis B 12-16%
- Hepatitis C 29-32%
- TB Disease 38%

*Hammett et al AJPH 2002*
Accessing HAART Following Release From Prison

- Retrospective cohort study (2004-2007)
  - All HIV-infected inmates released from Texas Department of Criminal Justice prison system (n=2112)
  - Texas ADAP program
    - ADAP program not convenient
- >90% of the former inmates experienced a treatment interruption
  - Treatment interruptions lasting
    - ≥30 days: >70%
    - ≥60 days: >60%

Drug overdoses now leading cause of death for Americans under 50
Virtually all corners of the U.S. impacted by increasing drug overdose

Legend for estimated age-adjusted death rate (per 100,000 population)
- <2
- 2-3.9
- 4-5.9
- 6-7.9
- 8-9.9
- 10-11.9
- 12-13.9
- 14-15.9
- 16-17.9
- 18-19.9
- 20-21.9
- 22-23.9
- 24-25.9
- 26-27.9
- 28-29.9
- 30+

A Cumulative HIV Diagnoses and Public Health Response

Cumulative HIV Diagnoses

- Initial diagnosis
- Cluster identified
- Incident command established
- Federal support requested
- Public health emergency declared
- HIV testing staff and DIS deployed
- Local HIV clinic opened
- Syringe exchange started
- >35,000 cumulative syringes dispensed
- >77,000 cumulative syringes dispensed

Timeline:
- Nov. 1, 2014
- Dec. 1, 2014
- Jan. 1, 2015
- Feb. 1, 2015
- March 1, 2015
- April 1, 2015
- May 1, 2015
- June 1, 2015
- July 1, 2015
- Aug. 1, 2015
- Sept. 1, 2015
- Oct. 1, 2015
- Nov. 1, 2015
Counties deemed highly vulnerable to rapid dissemination of HCV or HIV

Source: Van Handel et al, JAIDS 2016
STATE IMPRISONMENT RATE

These data show the number of people incarcerated in state prisons per 100,000 residents in each state.

New HIV diagnosis in 2016:

- Florida = 4,957 (24.0 per 100,000)
- Texas = 4,472 (16.1 per 100,000)
- Georgia = 2,716 (26.3 per 100,000)
- North Carolina = 1,414 (13.9 per 100,000)
Addiction

• Primary, chronic brain disease characterized by compulsive drug seeking and use *despite harmful consequences*

• Involves cycles of recurrence and remission

• 40-60% genetic

Correlation among Opioid Prescribing, Addiction, and Overdose Death

Prescription Opioid Sales, Deaths, and Treatment: 1999-2010
Why Do People Use Opioids?

Euphoria

Normal

Withdrawal

Tolerance and Physical Dependence

Acute use

Chronic use
Medication Saves Lives

Maryland: 79% reduction in overdose death with opioid agonist treatment

France: 79% reduction in overdose death opioid agonist treatment
Activity vs. dose

- Death
- Respiratory depression
- Euphoria
- Withdrawal relief
- Pain relief

Log Dose vs. Opioid Effect

- Full Agonist (Methadone)
- Partial Agonist (Buprenorphine)
- Antagonist (Naloxone)
How does Opioid Agonist Therapy (OAT) Work?

- **Euphoria**
- **Normal**
- **Withdrawal**

- Chronic use
- Maintenance
The use of opioid agonist medications to treat opioid use disorders has always had its critics. Many people, including some policymakers, authorities in the criminal justice system, and treatment providers, have viewed maintenance treatments as ‘substituting one substance for another’ and have adhered instead to an abstinence-only philosophy that avoids the use of medications, especially those that activate opioid receptors. Such views are not scientifically supported; the research clearly demonstrates that MAT [medication-assisted treatment] leads to better treatment outcomes compared to behavioral treatments alone. Moreover, withholding medications greatly increases the risk of relapse to illicit opioid use and overdose death. Decades of research have shown that the benefits of MAT greatly outweigh the risks associated with diversion.”

2016 Surgeon General's Report on Alcohol, Drugs, and Health
addiction.surgeongeneral.gov
Treatment Selection: Belief versus Science

“We as a society... think [people with addiction] should just get off drugs and by strenuously hauling up on their own bootstraps should stay off no matter what.

Policymakers and some clinicians continue to promote detoxification as ‘treatment,’ even though detoxification does nothing to help people stay off drugs.”
When emergency departments start medication therapy, the rate of success in treatment one month later is doubled.

Rhode Island is now providing treatment to everyone who is in their detention system.
• Mortality due to opioid overdose in RI
• January-June 2016 vs. January-June 2017
• Compared opioid overdose mortality general population to individuals with an incarceration in the 12 months prior to death
## RI Statewide Overdose Mortality

<table>
<thead>
<tr>
<th>Decedents: Recent Incarceration</th>
<th>First 6 Months 2016</th>
<th>First 6 Months 2017</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>26</td>
<td>9</td>
<td>17 (65%)</td>
</tr>
<tr>
<td>NO</td>
<td>153</td>
<td>148</td>
<td>5 (3%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>179</td>
<td>157</td>
<td>22 (12%)</td>
</tr>
</tbody>
</table>

Relative Risk Reduction = 61%

\[((9\div157)-(26\div179))/(26\div179)\]

Postincarceration Fatal Overdoses After Implementing Medications for Addiction Treatment in a Statewide Correctional System.
Green et al JAMA Psych (pub online 2/14/18)
Lack of Access to Treatment

Figure 1. US counties with physicians with waivers to prescribe buprenorphine.

Note: data source: Drug Enforcement Administration, July 2012. Map date: September 2013.
Conclusions

• In the midst of an epidemic of incarceration we have an epidemic of opioid use disorder

• The natural history of opioid use disorder often leads to involvement with the criminal justice system

• The criminal justice system can play an important role in reducing the opioid epidemic and resultant infectious diseases.