

## HIV, substance use, and mental health care in prisons – a global approach

Incarceration, psychiatric and substance use disorders, and infectious diseases form a syndemic.<sup>1</sup> That is, criminal justice systems gather people with pre-existing, serious health problems and, at the same time, exacerbate them. Incarcerated people experience much higher rates of infectious diseases compared to the general population: 6-times for HIV, 8-times for hepatitis C virus, and 2-times for hepatitis B virus.<sup>2</sup> Incarcerated people in low-income and middle-income countries have nearly 16 times the prevalence of psychotic disorders, and up to 6 times that of major depression, compared with the general population.<sup>3</sup> Comorbidity between psychiatric and substance use disorders has emerged as a key challenge among people in prison, with half of those with severe psychiatric disorders having a co-occurring substance use disorder.<sup>4</sup> In addition, HIV and psychiatric disorders may have high rates of co-occurrence, especially in prison settings, which would likely also interact to exacerbate health-related outcomes, including acceptance of and adherence to treatment.

Aside from the USA, the fifty countries with the highest incarceration rates are listed as low-income and middle-income, and together have two-thirds of the global incarcerated population. Prisons in low-income and middle-income countries also contain people with high rates of severe psychiatric and substance use disorders<sup>3</sup> and around half of incarcerated people use or inject drugs, mostly opioids.

Mitigation of the harms of co-occurring HIV and psychiatric disorders requires a systemic appraisal of the entire criminal justice system. Some low-income and middle-income countries are already implementing de-carceration, a comprehensive strategy to reduce the medical and social harms of incarceration by radically reducing prison populations. For example, many countries in Eastern Europe and Central Asia partially de-carcerated by transitioning large numbers of people with substance use disorders to probation over the past several years.<sup>5</sup> Scalable evidence-based risk assessment tools can assist in de-carceration, if specifically developed for people nearing the end of their sentences.<sup>6</sup>

For people who remain in prisons, physicians not only must screen, evaluate, and treat syndemic conditions throughout incarceration, but they must also facilitate linkage to and retention in post-release services. Unfortunately, only a minority of patients (reported to be 21% in one US state<sup>7</sup>) link to HIV services and avoid discontinuity of antiretroviral therapy. Though case management and peer navigation often link patients to services after release, the post-release period is particularly dangerous for those with opioid use disorder, with 85% relapsing within 12 months of release, usually within 2 weeks, leading to overdose, death, and discontinuity of HIV care.<sup>8</sup> Medications for opioid use disorder not only reduce overdose, but also enhance HIV treatment outcomes post-release.<sup>7</sup> Yet, such medications remain unavailable or insufficiently available in most low-income and middle-income countries. Recent data modestly support screening, brief intervention, and treatment strategies just before prison release, but these efforts are hampered by negative beliefs about MOUD.<sup>9</sup>

Although researchers have expanded the evidence base in recent years, little is known about optimal service models for managing people in prison with HIV and co-occurring psychiatric disorders. The Series paper by Haldane and colleagues<sup>10</sup> provides a clear overview of three possible service innovations to address syndemic conditions – all integrating addiction and HIV treatment settings. Prisons can learn from these integrated models by training across professional teams and co-addressing syndemic conditions into seamless systems of care that link community care to prisons and back, especially where health resources and specialty services are limited. Whatever model stakeholders choose, multidisciplinary teamwork, ongoing training and support, and adequate compensation and professional recognition of correctional healthcare staff is central to sustainable service models.

A culture that supports research is central to implementing evidence-based care. Research must measure the adverse consequences of each of the common synergistic conditions which make up the syndemic, not just infectious disease. This will include standardized measures of self-harm, suicide, and assaults within prison and recidivism on release.

Evidence-based practices for HIV prevention (e.g., antiretroviral therapy) and treatment (e.g., pre-exposure prophylaxis), common psychiatric disorders (e.g., cognitive behavioural therapy, antidepressants, and antipsychotics), and opioid use disorder in community settings are well established. The theory and methods of the emerging field of implementation science will be central to translating research findings and scaling-up services, especially to test and improve new implementation strategies like integrated care. Novel implementation trial designs, including stepped wedge trials and interrupted time series, as suggested in the Series, will also be a key component to improving care as traditional randomized trials may not be feasible or ethical in many justice systems.

Seena Fazel, MD<sup>1</sup>

Daniel J Bromberg, MSc<sup>2,3</sup>

Frederick L Altice, MD<sup>2,3,4</sup>

<sup>1</sup>Department of Psychiatry, University of Oxford, Oxford, UK

<sup>2</sup>Yale School of Public Health, Yale University, New Haven, CT, USA

<sup>3</sup>Yale Center for Interdisciplinary Research on AIDS, Yale University, New Haven, CT, USA

<sup>4</sup>Section of Infectious Diseases, Yale School of Medicine, New Haven, CT, USA

#### Corresponding author

Prof. Seena Fazel,

Department of Psychiatry

University of Oxford, Warneford Hospital

Oxford, OX3 7JX, UK.

[seena.fazel@psych.ox.ac.uk](mailto:seena.fazel@psych.ox.ac.uk)

**Competing interests declaration:** The authors declare no competing interests.

1. Bromberg DJ, Mayer KH, Altice FL. Identifying and managing infectious disease syndemics in patients with HIV. *Current Opinion in HIV and AIDS* 2020; **15**(4): 232-42.
2. Wirtz AL, Yeh PT, Flath NL, Beyrer C, Dolan K. HIV and viral hepatitis among imprisoned key populations. *Epidemiologic reviews* 2018; **40**(1): 12-26.
3. Baranyi G, Scholl C, Fazel S, Patel V, Priebe S, Mundt AP. Severe mental illness and substance use disorders in prisoners in low-income and middle-income countries: a systematic review and meta-analysis of prevalence studies. *The Lancet Global Health* 2019; **7**(4): e461-e71.
4. Baranyi G, Fazel S, Langerfeldt SD, Mundt AP. The prevalence of comorbid serious mental illnesses and substance use disorders in prison populations: a systematic review and meta-analysis. *The Lancet Public Health* 2022; **7**(6): e557-e68.
5. Altice FL, Azbel L, Stone J, et al. The perfect storm: incarceration and the high-risk environment perpetuating transmission of HIV, hepatitis C virus, and tuberculosis in Eastern Europe and Central Asia. *The Lancet* 2016; **388**(10050): 1228-48.
6. Beaudry G, Yu R, Alaei A, Alaei K, Fazel S. Predicting violent reoffending in individuals released from prison in a lower-middle-income country: a validation of OxRec in Tajikistan. *Frontiers in psychiatry* 2022; **13**.

7. Loeliger KB, Altice FL, Desai MM, Ciarleglio MM, Gallagher C, Meyer JP. Predictors of linkage to HIV care and viral suppression after release from jails and prisons: a retrospective cohort study. *The lancet HIV* 2018; **5**(2): e96-e106.
8. Chang Z, Lichtenstein P, Larsson H, Fazel S. Substance use disorders, psychiatric disorders, and mortality after release from prison: a nationwide longitudinal cohort study. *The Lancet Psychiatry* 2015; **2**(5): 422-30.
9. Dorgay CE, Bromberg DJ, Doltu S, et al. A pilot implementation study to scale-up methadone in incarcerated persons with opioid use disorder and retain them on treatment after release in Moldova. *Int J Drug Policy* 2022; **104**: 103683.
10. Haldane V, Jung A-S, De Foo C, et al. Integrating HIV and substance misuse services: a person-centred approach grounded in human rights. *The Lancet Psychiatry* 2022.