Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Reducing COVID-19 outbreaks in prisons through public health-centred policies

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People in the USA who are incarcerated have been heavily impacted by the COVID-19 pandemic, experiencing an infection rate more than five times higher than the US general population.[1] Prisons in the USA have also been epicentres of transmission to the community.[2] Evidence-based, public health-centred policies are needed to prevent COVID-19 outbreaks in prisons and save lives. Given the disproportionate rate of incarceration among marginalised groups, such policies will also improve health equity.[3]

Existing studies in this area have been mostly observational or case studies. An observational study of Texas prisons described three profiles of COVID-19 outbreaks—low outbreak, high outbreak, and high death—and found that maintaining housing at 85% capacity reduced risk of COVID-19 infection and death.[4] A case study of the British Columbia prison system described successful prevention of COVID-19 outbreaks before the rollout of vaccines using a combination of education, screening, testing, isolation, quarantine, physical distancing, and sanitisation.[5]

In *The Lancet Public Health*, Theresa Ryckman and colleagues[6] have added to this body of research by modelling COVID-19 public health policies in the California state prison system. The authors used daily resident-level data in a transmission-dynamic stochastic microsimulation to predict the impact of different policy scenarios on COVID-19 infection and hospitalisation rates. Models varied the level of COVID-19 vaccine coverage, baseline immunity, in-person activities, and use of non-pharmaceutical interventions (eg, physical distancing, masking, and surveillance testing) across five prison types that differed by residential layout and demographics. Models assumed a fixed 40% rate of staff vaccination based on the actual average rate at the time of the study. The authors reported that in-person activities could be most safely resumed in prisons with high vaccine coverage (90% of residents), low room occupancy (no more than two people per cell), and continued non-pharmaceutical interventions.

Ryckman and colleagues' study has contributed to the literature in two important ways. First, it has provided point estimates for COVID-19 risk under very clear policy conditions that can guide real-world policy decisions to improve health by reducing COVID-19 infection and hospitalisation rates and social isolation. Reducing social isolation in prisons is crucial, as the mental health effects can be severe.[7,8] Second, Ryckman and colleagues[6] provide a detailed methodological description that other researchers and practitioners can apply to replicate the microsimulation using local conditions and data sources. While somewhat outside the scope of their Article,[6] more detail would be useful on the mechanisms underlying the collaboration between the researchers and the California Department of Corrections and Rehabilitation, which provided the data for the study; as such partnerships are uncommon, the processes used to develop this relationship might be useful in promoting future collaborations in other jurisdictions to enhance local government capacity for complex data-driven public health modelling, which is often beyond the capability of regional government data analysts.

Another direction for future research includes how to influence correctional staff and administrator decision making. The assumptions in the study's models[6] regarding the relative flexibility in vaccination rate among people who are incarcerated and relative inflexibility in staff vaccination rates is rooted in real-world data, and also practically problematic. Research on strategies to effectively improve correctional staff vaccination uptake remains a crucial and understudied area. Research is also lacking into strategies to shift correctional administrator decision making to be more public health centred.

Finally, there is a substantial need to detail how to move beyond containing COVID-19 outbreaks inside of prisons and move towards community integration through decarceration. Containment is important, but insufficient to truly end COVID-19 prison-related outbreaks, as prisons are not closed systems; prison staff and residents move in and out of prisons, potentially carrying SARS-CoV-2 with them.

Due to the COVID-19 pandemic, some jurisdictions dramatically reduced their population of people who are incarcerated, mostly through reductions in jail admissions. This decarceration was supported by

the National Academy of Sciences,[9] and provides opportunities to model cross-system policy responses to COVID-19 to identify a more holistic package of evidence-based policies to promote public health. For example, people returning to the community from incarceration need to re-establish access to health insurance, health care, housing, employment, and other key services[10] that act as social determinants of health. Historically, there have been vast gaps in linking this population to such services, and policies across the full spectrum of health and human services can be leveraged to improve health during and beyond the COVID-19 pandemic.

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