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.

the ticket and put it in her hands. She blesses me with the courage to make all my dreams come true. Smiling, I cross the gates back into the PHC.

I declare no competing interests.

Biplov Adhikari
biplov.adhikari.91@gmail.com
Mulpani Primary Health Center, Kathmandu, Bagmati 00977, Nepal

High COVID-19 death rates in prisons in England and Wales, and the need for early vaccination

Institutional settings such as prisons are high-risk environments for infectious disease outbreaks and need to be given high priority in the rollout of COVID-19 vaccines. Prisons are typically overcrowded, access to sanitation is inconsistent, and people in prisons have contact with a large staff pool.

Early modelling suggested a worst-case scenario of more than 77 000 COVID-19 cases and 2000 deaths in prisons across England and Wales, if explosive prison outbreaks were not prevented. From March, 2020, UK prisons implemented extensive physical distancing and infection control measures. For example, many people in prison have been required to remain in their cells for 23 h per day for the past year, family visits have not been permitted, and many education, work, and rehabilitation opportunities have been stopped. Other changes have included reduced transfers of people between prisons and cohorting or quarantining those who are vulnerable, symptomatic, or returning from hospital.

Despite this, many people in prison and prison staff have contracted COVID-19. In the first wave, there were 7·6 confirmed COVID-19 cases per 1000 people in prisons in England and Wales compared with 4·9 in the general population. The higher case rates in prisons continued as mass testing was rolled out, despite the stringent prison regimes. Relative case rates should be treated with caution due to potentially different testing regimes. The test positivity rate has been higher in prisons, which might suggest lower case ascertainment.

Data about deaths might be more informative. Official data show that there were 121 deaths related to COVID-19 among people in prisons in England and Wales between March, 2020, and February, 2021. This is 3·3 (95% CI 2·7–3·9) times the rate of death due to COVID-19 among people of the same age and sex in the general population. The death data are unsurprising given the number of outbreaks in recent months. 107 (85%) of 126 prison or Youth Custody Service sites in England and Wales reported cases in January, 2021, alone, between them representing over 4000 new cases. Some of these outbreaks have involved hundreds of cases, and local areas containing prisons often have the highest overall rates of COVID-19 in England.

People in prisons are clearly at increased risk from COVID-19. As well as the higher risk of transmission and outbreaks, people in prison often have underlying health problems or other risk factors that increase the risk of severe disease. Epidemiological research into the health of this population is scarce, but existing studies have found that hypertension and asthma are common. Many people in prison have a history of tobacco smoking, which increases risks from COVID-19 through multiple pathways.

The pandemic has also had a toll on prison staff. The Prison Officers' Association recently tweeted that there has been 20 deaths among staff up to mid-January, 2021, and 4800 staff absent at that time (over 10% of the prison workforce). Clearly the pandemic has had major impacts on staff and their families, on the safe f\unctioning of prisons, and on people in prison.

Although there are many competing priorities in the COVID-19 vaccination programme, prisons are surely one of the most pressing. Currently, people in prisons are being offered COVID-19 vaccines in step with the general UK prioritisation criteria—ie, based on age and presence of long-term conditions. It can be difficult to identify eligible people in prisons, due to poor clinical coding and limited interaction with health services, both during and before prison. Many people in prisons are therefore

Published **Online**
March 16, 2021
https://doi.org/10.1016/S2213-2600(21)00137-5

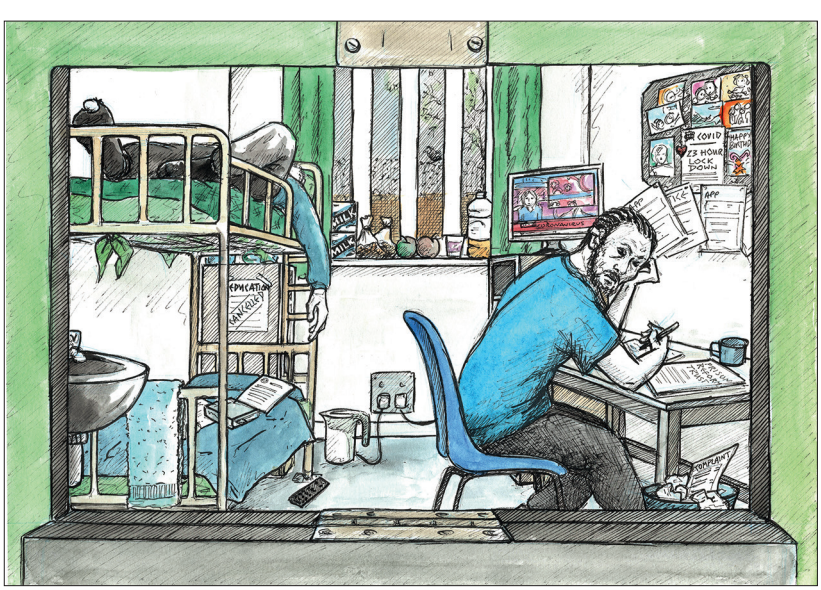
For more on **managing outbreaks of highly contagious diseases in prisons** see *BMJ Glob Health* 2020; **5:** e003201

For more on **prisons in response to the COVID-19 pandemic** see https://bit.ly/3rHcrT4

For more on the **UK Government's response to COVID-19 and the human rights implications** see https://publications.parliament.uk/pa/jt5801/jtselect/jtrights/265/26502.htm

For more on **COVID-19 cases in prisons** see https://www.nuffieldtrust.org.uk/news-item/covid-19-in-prisons-fewer-cases-than-feared-but-it-s-not-the-whole-story

For more on **the death rate due to COVID-19 in prisons** see https://discovery.ucl.ac.uk/id/eprint/10123265/



Artwork by Erika Flowers for Prison Reform Trust—CAPPTIVE COVID-19 Action Prisons Project: Tracking Innovation, Valuing Experience

considered low priority by default. Without a whole-prison approach, prisons will not achieve a good level of protection, or be able to safely restart family visits and vital educational and rehabilitation activities, until late in the rollout.

Whole-prison approaches can help build trust and increase uptake. Supporting this view, a peer support organisation recently surveyed 805 people in nine prisons in England about their attitudes to COVID-19 vaccines. 78% said they would accept a vaccine if offered. Concerns were similar to those reported in community settings, including side effects and the speed of vaccine development. Also similar to community surveys, younger participants and those from black and minority ethnic groups were less likely to say they wanted a vaccine. Some participants questioned why vaccines would be given to certain prisoners, or prisoners but not staff. The report concluded that simultaneous vaccination of whole prisons including staff could alleviate mistrust and expedite a return to a normal regime.

There are also logistical arguments for vaccinating whole prisons at once. Vaccination of the small numbers of people in any specific risk group in a single prison is inefficient, often resulting in leftover doses. Logistical and security considerations also mean that leftover doses cannot be easily used in other community settings.

Prisons are struggling after repeated prison lockdowns and restricted regimes. Some prisoners have been awaiting trial in these conditions. The prolonged isolation and separation from families would, under normal circumstances, breach human rights. With vaccination now possible, these conditions can no longer be accepted. National policy decisions that delay vaccines in prisons could be opposed on human rights grounds, particularly given that the government has a duty of care to people in custody.

Large, explosive outbreaks in crowded institutional settings remain a major ongoing risk even as wider population incidence falls, affecting prisons' ability to function and risking seeding further infections outside of prisons through court visits, hospital admissions, and prison release. Early whole-institution vaccination can prevent outbreaks, ensure the basic rights of people in prisons, and protect staff and the wider community.

We declare no competing interests.

Isobel Braithwaite, Chantal Edge, Dan Lewer, Jake Hard
isobel.braithwaite.13@ucl.ac.uk

University College London (UCL) Public Health Data Science Research Group, Institute of Health Informatics (IB), UCL Collaborative Centre for Inclusion Health (CE, DL), UCL, London, UK; and Royal College of General Practitioners Secure Environments Group, London, UK (JH)

For more on **COVID-19 prison statistics** see https://www.gov.uk/government/statistics/hmpps-covid-19-statistics-january-2021

For more on the **health of jail and prison inmates in the USA** see *J Epidemiol Community Health* 2009; **63:** 912–19

For the **tweet from Prison Officers Association** see https://web.archive.org/web/20210303115005/https://twitter.com/POAnatchair/status/1352932598595661824

For the **survey on COVID-19 vaccines** see EP:IC. The COVID-19 vaccine - A summary of patient views (in press). 2021. https://epicconsultants.co.uk/our-work

Still courtesy of Tjoff Koong Animation Studios, Passion Pictures Animation Studios, taken from Stories from the Inside— Hospital Care for People in Prison

Patient perspectives

COVID-19 survivor experiencing long-term symptoms

Anne Cahill

Published **Online** February 12, 2021 https://doi.org/10.1016/S2213-2600(21)00092-8

Anne Cahill of Dublin, Ireland, would describe herself as a relatively fit and healthy woman in her early 50s, married to husband Tony and with four adult children. She could not have known that the new coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was going to hit her like a hurricane, nearly taking her life and changing her outlook on life and health forever.

As panic regarding coronavirus gradually began to arrive in Ireland and the neighbouring UK in early March, 2020, like most of the public, Anne struggled to understand the deluge of information being thrown at her and how the virus might impact her and her family's life, or the risk that she might be infected. It was on March 15, while out walking with Tony, she began to feel ill. "It was a range of bad symptoms", Anne explains. "Feeling hot and cold, headaches, throwing up—I was on the sofa barely able to move. Across the next few days, it got worse."

Although her general practitioner (GP) had told her to tough it out, eventually Anne and Tony decided they would have to call an ambulance. "The paramedics told me that my temperature was not above 38°C so I couldn't be taken in for COVID", she recalls. "But I just told them, you have to take me in, I'm dying here." As new COVID-19 protocols had been brought in at the nearby St James' Hospital, Tony was not able to go with Anne to the accident and emergency (A&E) department, making her even more anxious. "It was like a ghost town in there—normally you