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.

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compliance, will therefore inevitably lead to increased transmission. Although cities within Europe and the USA might not be able to create make-shift isolation centres similar to those in Wuhan, due to a lack of social acceptability or negative public perceptions, other strategies should be considered to reduce transmission, such as repurposing hotels or dormitories. We urge policy makers in countries with or facing overburdened health-care facilities[9] to consider such measures as countries emerge from lockdowns.

We declare no competing interests.

*Borame L Dickens, Joel R Koo, *Annelies Wilder-Smith, Alex R Cook*
annelies.wilder-smith@lshtm.ac.uk

Department of Disease Control, London School of Hygiene & Tropical Medicine, London WC1E 7HT, UK (AW-S); and Saw Swee Hock School of Public Health, National University of Singapore and National University Health System, Singapore (BLD, JRK, ARC)

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See Online for appendix

Preventing major outbreaks of COVID-19 in jails

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections are now being found in jails throughout the USA. Conditions in jails are very conducive to the transmission of SARS-CoV-2, and social distancing is impossible. Therefore, there is widespread concern that there could be major outbreaks in jails and that jails could amplify transmission of SARS-CoV-2 in surrounding communities.

Jails can house a large number of inmates; the Los Angeles County jail (the largest in the USA) houses around 20 000 inmates.[1] However, inmates spend, on average, 2 months incarcerated.[2] This is because inmates in jail are either awaiting trial or sentencing or have been convicted of minor offences. As a preventive measure against coronavirus disease 2019 (COVID-19) outbreaks, some jails are releasing low-risk offenders early or admitting fewer inmates, or both.[3] It is unclear whether these interventions will be sufficient to prevent the occurrence of major outbreaks.

The within-jail basic reproduction number for SARS-CoV-2, R_0^{wj}, can be used to determine the proportion of inmates that need to be released early, and how early they need to be released, to prevent an outbreak occurring. R_0^{wj} is defined as the average number of secondary infections of COVID-19 that are caused by one infectious inmate during the time that they are incarcerated. If R_0^{wj} is greater than 1, then an outbreak will occur in the jail; if R_0^{wj} is less than 1, an outbreak will not occur. The greater the value of R_0^{wj}, the more severe the outbreak. To prevent an outbreak from occurring, interventions need to reduce R_0^{wj} to less than 1.

The interventions that are necessary to reduce R_0^{wj} to 1 are shown in the figure. Inmates who are not released early are assumed to spend an average of 60 days incarcerated. Both curves show that there are multiple interventions, in terms of the proportion of inmates that are released early and how early they should be released, that would be effective in preventing an outbreak.

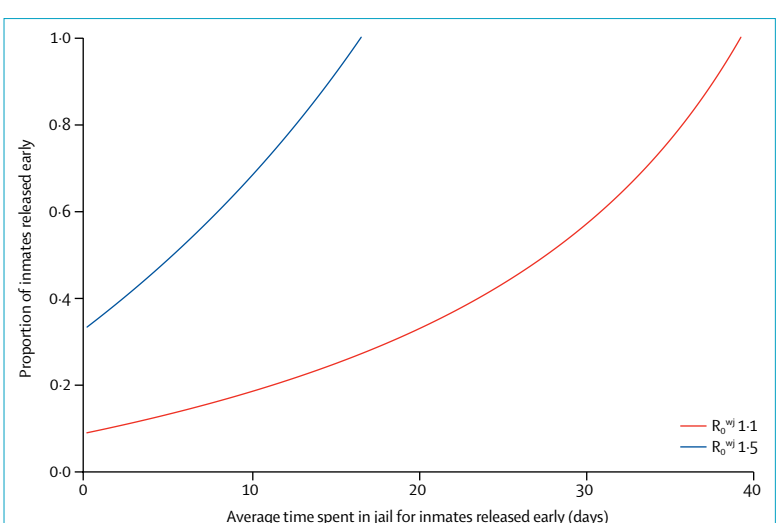

***Figure*: The proportion of inmates that should be released early to prevent an outbreak of coronavirus disease 2019 in a jail**
The mathematical expression for the R_0^{wj} of severe acute respiratory syndrome coronavirus 2, and the parameter values used to generate the graph, are provided in the appendix. R_0^{wj}=within-jail basic reproduction number.

For example, if R_0^{wj} equals 1·1 in the absence of interventions (red line), any of the following three interventions would be effective: (1) not admitting 9% of potential inmates to the jail; (2) releasing 20% of inmates after an average of 11 days in jail; or (3) releasing all inmates after an average of 39 days in jail. If R_0^{wj} equals 1·5 in the absence of interventions (blue line), more extreme interventions would be necessary to prevent an outbreak occurring—for example, (1) not admitting 33% of potential inmates to the jail; (2) releasing 60% of inmates after an average of 8 days in jail; or (3) releasing all inmates after an average of 16 days in jail.

The actual value of R_0^{wj} in any jail is currently unknown. However, the basic reproduction number, R_0, for COVID-19 epidemics in the general population is high (eg, 3·38).[4] If R_0^{wj} is that high, releasing low-risk offenders early and admitting fewer inmates will mitigate (to some degree) outbreaks occurring in jails—ie, reduce the number of infections and deaths. However, it is unlikely that it would be possible to prevent major outbreaks occurring.

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*Justin T Okano, *Sally Blower*
sblower@mednet.ucla.edu

Center for Biomedical Modeling, Semel Institute for Neuroscience and Human Behavior, David Geffen School of Medicine, University of California, Los Angeles, CA 90095, USA

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Calling for a COVID-19 One Health Research Coalition

Emerging from its ancestral bat host in December, 2019,[1] possibly at a wildlife trading market in Wuhan, China,[2] severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) had by mid-April, 2020, spread globally, infecting more than 2 million individuals and causing at least 130 000 deaths. Travel restrictions were imposed, borders sealed, schools and businesses closed, and more than half of humanity locked down, all to reduce the spread of this virus.

Coronavirus disease 2019 (COVID-19) is not just a global pandemic caused by the zoonotic SARS-CoV-2 but represents a critical pivot point in modern times, joining only a few episodes in recorded history. The unique features of this world-changing event are its suspected origin at the human–environment–animal interface and its rapid explosion as a result of unprecedented levels of human interconnectivity, mobility, and global trade.[3] COVID-19 epitomises why One Health, which recognises the fundamental interconnectedness of humans, animals, and their shared environment, is key to ensuring the healthy and sustainable future of the planet.

There is important global consensus on many issues around health and the sustainability of our socioeconomy and ecosystems. For example, global health challenges, such as emerging and re-emerging infectious diseases, antimicrobial resistance, and non-communicable diseases, are further fuelled by global trends related to climate change, growing populations, consumerism, poverty, conflict, and migration.[4] However, a great deal still remains unclear or unknown. The world cannot afford to proceed without some foresight because missteps can lead to disaster. Neither can the world afford to be rigid in the charted path. Flexibility will be required as knowledge advances. Research anchored in the recognition that the health of our planet hinges on symbiotic relationships between humans, animals, and the environment that we share and in the understanding that we are interconnected by default must gather evidence for a framework within which to interpret and apply this evidence towards preventing further global catastrophes.

The Chairs of the *Lancet* One Health Commission, together with colleagues, call for the establishment of an inclusive and transparent COVID-19 One Health Research Coalition to strengthen linkages with the evolving climate change and planetary health research community. This multidisciplinary and multilateral coalition would galvanise the research community and research funders towards designing, undertaking, coordinating, and synthesising research at the human–environment–animal interface for the creation of a healthy and sustainable reconnected future for our planet.

ASW and JHA are co-Chairs of the *Lancet* One Health Commission. All other authors declare no competing interests.

**John H Amuasi, Christian Walzer, David Heymann, Hélène Carabin, Le Thi Huong, Andrew Haines, Andrea S Winkler*
amuasi@kccr.de

Global Health and Infectious Diseases Research Group, Kumasi Collaborative Center for Research in Tropical Medicine, Kumasi PMB UPO, Ghana (JHA); Department of Global Health, School of Public Health, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana (JHA); Wildlife Conservation Society, Bronx, NY, USA (CW); Research Institute of Wildlife Ecology, University of Veterinary Medicine, Vienna, Austria (CW); Department of Infectious Disease Epidemiology (DH) and Centre for Climate Change and Planetary Health (AH), London School of Hygiene & Tropical Medicine, London, UK; Faculty of Veterinary Medicine, University of Montreal, Montreal, QC, Canada (HC); School of Preventive Medicine and Public Health, Hanoi Medical University, Hanoi, Vietnam (LTH); Centre for Global Health, Institute of Health and Society, University of Oslo, Oslo, Norway (ASW); and Center for Global Health, Department of Neurology, Technical University of Munich, Munich, Germany (ASW)

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The COVID-19 One Health Research Coalition is in the interim being hosted by the Oslo-based Secretariat of the *Lancet* One Health Commission. Inquiries regarding the coalition may be sent to secretariat@covid19onehealth.org

For **WHO's COVID-19 Data Explorer** see https://covid19.who.int/explorer