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.

Historical evidence to inform COVID-19 vaccine mandates

The best comparison to the massive global vaccination effort that is now starting might be the smallpox vaccination campaigns that culminated in the eradication of the disease, as detailed by Richard Horton.[1] With smallpox, vaccine mandates played a pivotal role in reducing mortality and case rates.

By the mid-19th century in Europe, regions with mandatory vaccination proved to have substantially fewer deaths from smallpox than those that relied on voluntary vaccination. In 1853, smallpox vaccination became compulsory in England. In the years before mandatory vaccination in England and Wales, there were more than ten times as many deaths per person than there were in the regions of Italy and Sweden where vaccination was mandatory.[2] In German states, mandatory vaccination was introduced in 1874. In the 5 years before the mandate, smallpox mortality rates were more than 30 times higher than in the 5 years following the mandatory vaccination law. These results stood in contrast to neighboring countries with persistent mortality rates.[3]

Perhaps the clearest experiment with mandatory vaccination was in the USA, informed by the European experience with vaccine mandates decades earlier. The results were notable. Between 1919 and 1928, the ten states with mandatory vaccination laws had 6·6 cases per 10 000, the six states with local options for laws on vaccination had 51·3 cases per 10 000, the 28 states with no laws on vaccination had 66·7 cases per 10 000, and the four states where mandatory vaccination was prohibited had 115·2 cases per 10 000.[3] Between the extremes of policy on vaccine mandates, there was a 20-times difference in smallpox case rates.

COVID vaccine hesitancy puts many communities at risk of not reaching the rates of vaccination needed to prevent future outbreaks, even if these communities succeed in solving the challenges of vaccine supply and distribution. In surveys, nearly half of the population in some countries stated a reluctance to be vaccinated. Populations mistrustful of the government, who are less educated, and who have lower incomes are most hesitant to be vaccinated.[4]

Most countries have a mandatory vaccination programme for childhood vaccinations, with varying strategies for enforcement that might establish precedent.[5] If strategies of persuasion do not achieve adequate vaccination rates in our communities, it needs to be considered whether vaccine mandates—coercive policies that are often a last resort—might be needed to bring this crisis to an end. With consideration to the potential implementation of these mandates, it is necessary to look to the most relevant data available, even if those data are from a century ago.

I declare no competing interests.

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Ensure Palestinians have access to COVID-19 vaccines

Kyodo News/Getty Images

The health predicament in the occupied Palestinian territory has been inexcusable,[1] and the COVID-19 pandemic is exacerbating problems.[2] As of Feb 8, 2021, WHO reports that more than 183 000 Palestinians have tested positive for severe acute respiratory syndrome coronavirus 2, and more than 2000 people have died from COVID-19. According to the UN, "Israel has not ensured that Palestinians under occupation in the West Bank and Gaza will have any near-future access to the available vaccines".[3] This statement is despite WHO's roadmap for COVID-19 vaccine prioritisation[4] stating that people in particular settings (eg, refugee and detention camps, prisons) should be prioritised for vaccination.

We recognise that Palestinians have the right to life, health, and dignity. Differential access to necessary health care is ethically and legally unacceptable and, under the terms of The Geneva Conventions, Israel has a responsibility for those living under its occupation; the 1995 Israeli–Palestinian Interim Agreement cannot be used as a justification for Israeli inaction.

We call on media organisations to report on the serious health burden and increasing number of lives at risk as COVID-19 spreads among the Palestinian people. Media organisations have a moral responsibility to report on this situation without discrimination and with moral courage.

We support agencies, such as WHO and Amnesty International, in their efforts to demand that Israel ensure swift and equitable access to vaccines and increase the health-care system's capacity in the occupied Palestinian territory. However, these organisations do not have the

Published **Online**
February 9, 2021
https://doi.org/10.1016/S0140-6736(21)00190-2

For **WHO updates on COVID-19 in the occupied Palestinian territories** see http://www.emro.who.int/countries/pse/index.html

executive power to force states to respect rights. Israel needs to fulfil its international obligations by providing full financial support to ensure that any programmes meet minimum standards.

We call on multilateral development banks to support the expansion of Palestinian public health-care infrastructure and capacity to allow Palestinians a dignified life that any person deserves, as per the Universal Declaration of Human Rights.

For more on **SARS-CoV-2** see https://www.who.int/emergencies/diseases/novel-coronavirus-2019

We call on manufacturers developing these crucial vaccines to ensure access for all Palestinian people under occupation, including those living in refugee and detention camps, which could involve donations of storage units and equipment.

Finally, we call on individuals and civil society organisations to raise global awareness of the situation in the occupied Palestinian territory and ask Israel to honour its commitment to medical ethics and human rights by ensuring access to COVID-19 vaccines for Palestinians living under occupation.

Israel has a moral obligation to ensure that Palestinians have access to COVID-19 vaccines available under emergency use mechanisms or compassionate use and to support such a vaccination programme. Anything short of that is a breach of medical and professional ethics and a clear act of discrimination.

We declare no competing interests.

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PREZODE: preventing zoonotic disease emergence

As of mid February, 2021, the SARS-CoV-2 virus has killed approximately 2 million people worldwide and caused profound economic damage, with a global growth reduction of 4·4% in 2020.[1] The ultimate consequences of this crisis are difficult to predict but, from sanitary, economic, sociological, and ecological perspectives, the toll is already substantial. Nevertheless, this threat is not new. Concerns over a global pandemic have arisen many times before, so most countries already had emergency preparedness plans in place. However, the limitations of these have been exposed by the current coronavirus pandemic.[2] The reasons for these inadequacies are many, and point towards one misconception: contrary to current approaches, prevention strategies should be implemented before the disease emerges within human populations.

During the last several decades, pathogen screening has been developed to anticipate the next pandemic. Although isolating new wildlife-borne pathogens is still important, it is not enough to prevent them from emerging. It is time to take a step forward—namely, by jointly deploying academic research, intersectoral collaboration in the field, and the engagement of operational actors on the front lines of outbreaks—to envision prevention strategies that lead to the reduction of risks of emergence.[3]

Such a scheme is at the heart of the PREventing ZOonotic Disease Emergence (PREZODE) initiative, a French brainchild that has attracted the interest of the Tripartite Alliance (Food and Agriculture Organization of the UN, World Organisation for Animal Health, and WHO), as well as the UN Environment Programme, the World Bank, the European Commission, and partner countries. Announced at the One Planet Summit on Jan 11, 2021, the PREZODE initiative was prepared through a series of online workshops that convened nearly 400 researchers and public health authorities from 50 countries on all five continents. We expect that PREZODE will be done under the guidance of the planned One Health high-level expert council.[4]

PREZODE aims to support international organisations and countries across the globe, particularly low-income countries, to prevent the emergence and spread of zoonotic diseases. This initiative is an attempt to initiate a framework shift to envision innovative prevention strategies, on the basis of five pillars: (1) zoonotic risk assessment, (2) zoonotic risk reduction, (3) early detection and socioeconomic evaluation, (4) a global surveillance system of zoonotic risks, and (5) ensuring stakeholder commitment and capacity building to strengthen One Health networks and policies.

This international initiative will debut in 2021, with the co-design of a scientific and strategic agenda to be shared by researchers and stakeholders before the first implementation plan launches in 2022. On behalf of the initiative, we would like to invite the scientific and medical communities to join this effort to co-construct an ambitious plan in the different regions of the world, leveraging existing projects, programmes, centres, and hubs. The PREZODE initiative promotes an international coordination strategy to tackle emerging risks (WHO, World Organisation for Animal Health, Food and Agriculture Organization of the