



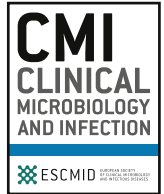
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Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Letter to the Editor

Learning from and optimising divergent pandemic responses

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ARTICLE INFO

Article history:

Received 19 March 2022

Accepted 27 March 2022

Available online xxx

Editor: L. Leibovici

To the Editor,

Recent events in Hong Kong related to the spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) Omicron variant may seem very familiar to those in the West, where such rapid spread of the virus was seen during the first wave of the pandemic during March–June 2020. The comparison is made more dramatic in that this has occurred in a Hong Kong population that has been mostly vaccinated, with either the Chinese CoronaVac or the Pfizer BioNTech vaccines [1]. The ability of the Omicron variant to escape such vaccine protection has caused daily COVID-19 case numbers there to rise from under 1000 at the beginning of February 2022 to over 50 000 by the beginning of March 2022. Similar data related to the appearance of the Omicron variant from the UK shows daily cases rising from around 50 000 to 270 000 during December 2021 to January 2022. Given that the population of the UK is about 9 times higher than the population of Hong Kong, the daily COVID-19 case numbers in Hong Kong, with the Omicron variant, look far worse [2].

A comparison of the daily deaths from COVID-19 also shows a worse picture for Hong Kong, with 10–200 deaths during February–March 2022, compared to 100–200 deaths for the much larger UK population during December 2021–January 2022. It may be largely attributed to the earlier low uptake rate among the vulnerable subpopulation aged 70 years or above, as indicated

historically on the Hong Kong Vaccination Dashboard [3]. Most importantly, fewer than 20% of the resident of elderly care homes (RCHes) in Hong Kong have been vaccinated, due to their families' concerns about adverse vaccine effects. Of those in the most vulnerable age group (over 70 years), most have only received the CoronaVac vaccine, which has been shown to be mostly ineffective against the Omicron variant [4].

As of March 10, 2022, there were a total of 2937 deaths in the ongoing epidemic wave, of which 2654 (90.4%) were unvaccinated [5]. About 69.2% ($n = 2031$) and 57.9% ($n = 1700$) of deaths were in the over 80 years age group and residents from 91.6% ($n = 722$) of RCHes in Hong Kong, respectively. The crude case fatality rate among those vaccinated with 2 doses vs. unvaccinated individuals aged 80 years or above were, respectively, 2.42% and 11.39%.

So how has a population that exhibited such exemplary control of the virus since the beginning of the pandemic found itself in this situation? From the start of the pandemic, with the experience in outbreak management during the 2003 SARS epidemic, the majority of citizens in Hong Kong complied conscientiously with enhanced personal hygiene measures, such as face masking and regular hand sanitisation, travel avoidance, and social distancing, border restrictions and active case surveillance, with voluntary mass testing or district-level compulsory testing, and contact tracing, followed by enforced isolation and quarantine [6,7]. This led to fewer than 13 000 total recorded COVID-19 cases and only around 230 deaths in the territory, by the end of December 2021.

However, such success in the use of non-pharmaceutical interventions (NPIs) and potential distrust in government led to greater suspicion around the rapid development and licensing of the COVID-19 vaccines, as well as disproportionately severe anxieties about their rarer, more severe adverse effects [8]. Such concerns increased vaccine hesitancy and reduced the urgency to be vaccinated in much of the population, ultimately leading to a relatively slow uptake of any COVID-19 vaccine, with less than 70%

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of the population fully vaccinated by one year after the vaccination programme began.

The arrival of the more transmissible and immune-escape capable, although clinically relatively milder Omicron variant, together with the persistent 'zero COVID' policy or 'dynamic zero COVID', further increased the strain on an otherwise well-equipped healthcare service, run by the Hong Kong Hospital Authority.

So what can we learn from this? The ideal pandemic response would prioritise and enforce the use of NPIs to control the virus effectively whilst developing vaccines and antiviral drugs. Once such pharmaceutical interventions are available, populations need to take up any offered vaccine quickly, accepting that there will be some common minor and some rarer major adverse reactions to the vaccines. However, as we have seen during this pandemic, different governments and their populations will react differently at different times to the spread of the virus [9], and this is very difficult to control at a global level.

The slow response and implementation of NPIs, followed by a rapid vaccine uptake in the West, contrasted sharply with the rapid response and implementation of NPIs followed by a slow vaccine uptake in the East—each leading to their own local peaks of COVID-19 cases and deaths. A more effective global pandemic response should clearly consist of a balance of these two extreme responses—to optimise the use and timing of NPIs to buy time for a quick and efficient rollout of an effective vaccine for all populations.

Transparency declaration

None of the authors have any financial or other conflicts of interest to declare. No funding was required for this article.

Author contributions

JWT conceived and drafted the first version of this manuscript. KKOK added further details and data on the spread of COVID-19 in the Hong Kong population. Both authors critically reviewed and made final edits to the manuscript prior to submission.

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