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Letter to the Editor

A tale of two cities: A comparison of Hong Kong and Singapore's early strategies for the Coronavirus Disease 2019 (COVID-19) [☆]



Dear Editor,

As the dreadful Coronavirus Disease 2019 (COVID-19) pandemic continues to plague communities and societies worldwide, the discussion surrounding the purported efficacy and recommendation to wear face masks in public spaces persists. A recently published study by Cheng et al. sought to provide further support for this public health recommendation by comparing the number of confirmed COVID-19 cases and clusters during mask-off and mask-on settings in Hong Kong Special Administrative Region (HKSAR).¹

In HKSAR, it is known that community-wide masking was practiced by the general population at an early stage of the pandemic.¹ Based on news reports and official press releases, it is evident that many Asian countries, which have successfully contained the first wave of infections, are now experiencing a second wave of imported cases from abroad and worsening local transmission.² As the authors rightly mentioned, Singapore and HKSAR share several similarities in that they are both sprawling city states with developed economies, a high trade-to-gross domestic product (GDP) ratio, advanced infrastructure and healthcare systems, and they both had varying successes thus far in the management of the ongoing pandemic, albeit adopting different approaches.^{3,4}

Singapore saw her first imported case of the novel coronavirus infection on 23 January 2020. Prior to this, the authorities had a working multi-ministry taskforce, issued travel advisories for China to the public, precautionary advisory to preschools (good hygiene, travel declarations and temperature screening for staff) and implemented temperature screening at land and sea checkpoints. Given the evolving situation in China at that time and the high volume of international travel to Singapore, the Singapore government had accurately pre-empted the possibility of more suspect cases and imported cases.⁵ After the 2003 severe acute respiratory syndrome-related coronavirus (SARS-CoV) outbreak, Singapore authorities had put in place a multi-ministry taskforce and a Disease Outbreak Response System Condition (DORSCON) framework that enables the whole-of-government to respond immediately to any disease outbreak and guide interventions.⁵ While HKSAR saw her first imported case on 22 January 2020 and had taken similar pre-emptive measures prior to this.⁶ In terms of the alert level, Singapore raised its risk assessment (in accordance with the DORSCON framework) from DORSCON yellow to DORSCON orange on 6 February 2020 after the country saw an increased number of cases of local transmission. In HKSAR, the serious response level was activated in public hospitals on 4 January 2020 and the hospi-

tal authority activated the emergency response level on 25 January 2020.

Both countries contained the first wave of imported cases well and boasted robust testing and contact-tracing capabilities. However, a key difference was that the HKSAR government implemented social-distancing measures and partial closures earlier, extending the Lunar New Year holidays and keeping all schools and government offices closed after the holidays, while the Singapore government had all schools (including preschools) running up till the implementation of a sweeping 'circuit breaker' measure on 7 April 2020, only allowing residents to leave their homes to exercise alone or purchase essential items. All private or public gatherings, non-essential services and sports and recreation facilities have ceased.

Although both countries did not advise compulsory mask-wearing hitherto, most members of public in HKSAR chose to wear a mask when going outside anyway. The initial advice from the HKSAR government was for people who have respiratory symptoms, visiting hospitals and those travelling to wear a mask (and continue to do so until 14 days after returning). The generally high mask usage amongst the public could be partly due to their previous experience with SARS-CoV or their distrust in the HKSAR central government.⁷

Although there are no official statistics, it was evident from media and news reports that most Singaporeans still went about their daily activities without the use of a mask, unless they were unwell.⁸ The Singapore government has now dramatically reversed their recommendations on the use of masks because it is thought that they may confer additional protection against the COVID-19, due to the variable incubation period for clinical disease and possibility of asymptomatic spreaders.⁹ It is now mandatory to wear a mask when going out. Tough laws have been put in place to enforce this; first-time offenders would be fined while egregious cases may be prosecuted in court.¹⁰ The COVID (Temporary Measures) Act was passed by Singapore parliament on 7 April 2020, and under the act, the government has the powers to make regulations to further prevent or control the incidence or transmission of COVID-19.

Both countries had a significant number of returning citizens from abroad (be it students or working professionals), some of these returnees were tested for the COVID-19 while a stay-home notice of fourteen days were issued to all of them to self-isolate and monitor for symptoms.

Either way, it appears that Hong Kong has managed to flatten the coronavirus curve, while Singapore is seeing a rapid upward trend (Fig. 1), mostly due to an outbreak of cases amongst foreign workers living in the dormitories.¹¹ There are more than 250,000 foreign workers on 'construction work permits' in Singapore, and the growing outbreak amongst workers living in the dormitories

[☆] Role of funding source: None.

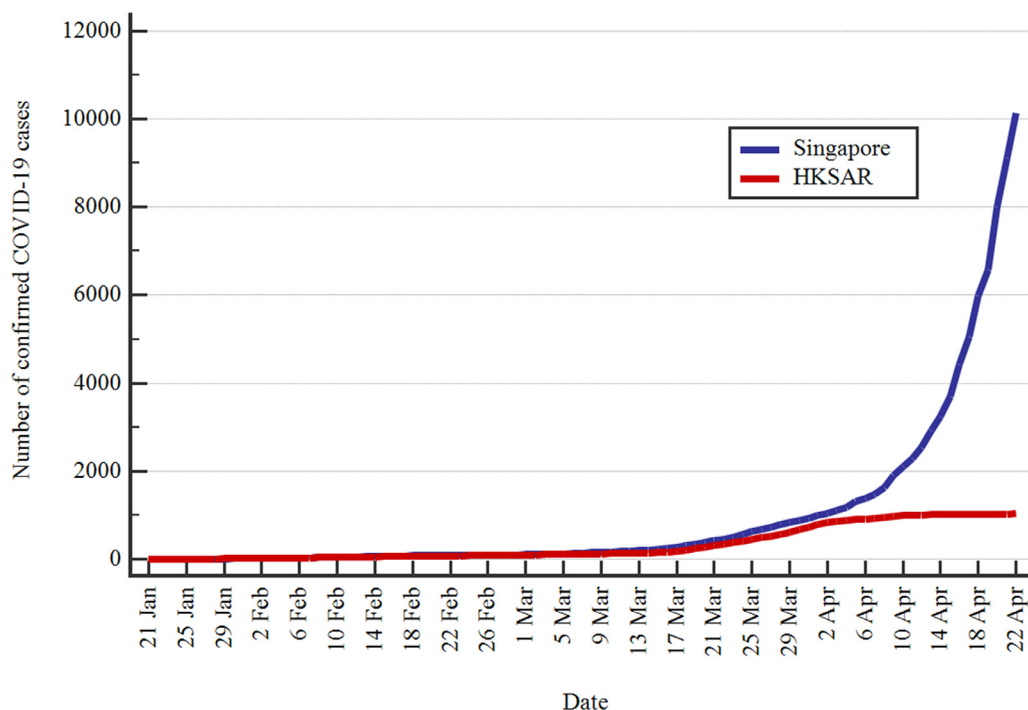


Fig. 1. Total number of COVID-19 cases (cumulative) in Singapore and HKSAR up till 21 April 2020 (figures based on data released by the respective health ministries).

could be due to the limited space, their culture of communal cooking and sharing food, and communal toilets.

Given the above context and factors, it is difficult to precisely apportion the contribution of masking versus social distancing, rigorous contact tracing and other control measures to COVID-19 containment. Properly-worn face masks probably help stem the spread of the coronavirus, albeit other environmental and ambient factors such as temperature, wind velocity and humidity would also affect how the respiratory droplets travel.

Although the efficacy of wearing masks in public cannot be stated definitively, we believe the takeaway lessons are clear. Caution and pre-emptive measures yield significant preventive benefits in this crisis. The public needs to act responsibly and pay heed to these advice and physical distancing measures. Given the escalating medical and socioeconomic costs associated with this pandemic, the adage that 'prevention is better than cure' is especially relevant today.

Acknowledgements

The authors report no conflicts of interest. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors alone are responsible for the content and writing of the article.

References

- Cheng VC, Wong SC, Chuang VW, So SY, Chen JH, Sridhar S, To KK, Chan JF, Hung IF, Ho PL, Yuen KY. The role of community-wide wearing of face mask for control of coronavirus disease 2019 (COVID-19) epidemic due to SARS-CoV-2. *J Infect*. 2020 Jul;81(1):107–114. doi: [10.1016/j.jinf.2020.04.024](https://doi.org/10.1016/j.jinf.2020.04.024).
- Channel News Asia. Asia Pacific steps up COVID-19 efforts as second wave of infections strikes. Available from: <https://www.channelnewsasia.com/news/asia/asia-pacific-covid-19-coronavirus-second-wave-infections-12566132> [last accessed 8 April 2020].
- Mirza H. *Multinationals and the Growth of the Singapore Economy*. Routledge; 2011 Mar 14.
- Chiu SW. *City states in the global economy: Industrial restructuring in Hong Kong and Singapore*. Routledge; 2018. Feb 23.

- Ministry of Health, Singapore. Confirmed imported case of novel coronavirus infection in Singapore; multi-ministry taskforce ramps up precautionary measures. Available from: <https://www.moh.gov.sg/news-highlights/details/confirmed-imported-case-of-novel-coronavirus-infection-in-singapore-multi-ministry-taskforce-ramps-up-precautionary-measures> [last accessed 3 April 2020].
- Lum A, Chung K. Wuhan coronavirus: Macau confirms first case as new disease looms over Hong Kong. *South China Morning Post*. Available from: <https://www.scmp.com/news/hong-kong/health-environment/article/3047140/china-coronavirus-macau-reports-first-case-new> [last accessed 3 April 2020].
- Chow V. Flattened the curve for now but Hong Kong braces for a second coronavirus wave. *Channel News Asia*. 2020. Available from: <https://www.channelnewsasia.com/news/commentary/covid-19-coronavirus-hong-kong-case-mask-protest-sars-carrie-lam-12560284> [last accessed 10 April].
- Mokhtar F, Ramli D. Singapore U-turns on wearing masks as local virus cases climb. *Bloomberg* 2020;3. April. Available from: <https://www.bloomberg.com/news/articles/2020-04-03/singapore-u-turns-on-wearing-masks-as-local-virus-cases-climb> [last accessed 10 April 2020].
- Gandhi M, Yokoe DS, Havlir DV. Asymptomatic transmission, the Achilles' heel of current strategies to control COVID-19. *N Engl J Med* 2020;382(22):2158–2160. doi: [10.1056/NEJMe2009758](https://doi.org/10.1056/NEJMe2009758).
- Ministry of Health, Singapore. Continued stringent implementation and enforcement of circuit breaker measures. Available from: <https://www.moh.gov.sg/news-highlights/details/continued-stringent-implementation-enforcement-of-circuit-breaker-measures> [last accessed 16 April 2020].
- Heijmans P, Vishnoi A. Thousands of people in dorms pose new challenge to Singapore virus fight. *Bloomberg* 2020;9. April. Available from: <https://www.bloomberg.com/news/articles/2020-04-09/thousands-in-dorms-pose-new-challenge-to-singapore-virus-fight> [last accessed 14 April 2020].

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