

COVID-19 Outbreak in Hong Kong: Public Health, Surgical Masks, and Hand Hygiene



See also Morabia, p. 923, Tarantola et al., p. 925, and the *AJPH* COVID-19 section, pp. 939–977.

Seeing the rapid worldwide spread of coronavirus disease 2019 (COVID-19), we would like to share with readers the recent public health response in Hong Kong, China. Given its proximity to mainland China, with more than 300 000 cross-border travelers arriving from mainland China and Macao each day, Hong Kong is one of the most densely populated cities with high epidemic risk. As of April 23, 2020, only 1036 confirmed cases of COVID-19 have been reported in Hong Kong, despite a recent sharp rise caused by some Hong Kong citizens returning from epidemic countries before the implementation of mandatory 14-day quarantine. Despite having one of the highest population densities in the world, Hong Kong's population incidence rate for COVID-19 ranked 40th among the list of 195 World Health Organization member states (Table A, available as a supplement to the online version of this article at <http://www.ajph.org>). In addition to measures such as quarantine, social distancing, partial border closures, extensive testing, and travel restrictions, the public actively responded by wearing surgical masks and practicing hand hygiene. Although the effect of individual measures in

controlling community outbreaks is difficult to tease apart, we believe that high compliance to mask use and hand hygiene may have contributed significantly to the reduction of community-acquired COVID-19 in Hong Kong and that further investigation is needed.

EFFICACY OF SURGICAL MASKS AND HAND HYGIENE

Several studies have aimed to investigate the efficacy of surgical mask use and hand hygiene for prevention of respiratory viral infections. Table B (available as a supplement to the online version of this article at <http://www.ajph.org>) summarizes the findings from six randomized controlled trials that examined the effectiveness of surgical masks and hand hygiene to prevent respiratory virus transmission in household and residential hall settings.

The efficacy of surgical mask use alone remains inconclusive because of mixed results. In contrast, two studies found that virus transmission could be reduced by hand hygiene with surgical masks applied within 36 hours of symptom onset in the

index patient. Despite the contradictory result in one of the studies, the authors suggested that their results might be attributed to transmission before the intervention, poor surgical mask use, and the difference in hand-washing frequency between study groups. Given the differences in intervention methods between studies, poor compliance to interventions, and other methodological issues, the extent to which surgical mask use and hand hygiene reduce transmission of respiratory viral infections is uncertain.

HONG KONG PUBLIC RESPONSE TO VIRUS OUTBREAKS

Before the severe acute respiratory syndrome outbreak in 2003, the use of surgical masks was considered strange behavior in Hong Kong. Since then, use of surgical masks has been perceived to be efficient in preventing

infection transmission, leading to a change in the sociocultural meaning of surgical masks.¹ Masks are no longer considered aberrant and are not restricted to those infected. A survey conducted during the severe acute respiratory syndrome outbreak found that about 40% of the respondents used surgical masks all or most of the time in public.² During the influenza H5N1 period in 2007 and H1N1 period in 2009, 92.4% and 88.7%, respectively, of Hong Kong residents wore surgical masks.³

Public acceptance of surgical masks remains weak outside Hong Kong, Macao, and Taiwan. In a public health behavior survey conducted in New South Wales, Australia, only 58% of the respondents were willing to wear a surgical mask.⁴ In a study in which passengers in two metro stations in Mexico City, Mexico, were observed during the H1N1 epidemic in 2009, the proportion of passengers wearing a surgical mask varied between 8.9% and 76.5%.⁵ We note that a shift in attitudes has occurred outside east Asia as well with a new policy report in the United States recommending mask use by the general public⁶ and the World Health Organization conditionally recommending face mask use by asymptomatic people for mitigating the effect of pandemic

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influenza (https://www.who.int/influenza/publications/public_health_measures/publication/en).

After extensive promotion of hand hygiene in Hong Kong, many Hong Kong citizens had satisfactory hand hygiene practices despite lacking detailed understanding of viruses.³ For instance, hand sanitizers are commonly carried and used by Hong Kong citizens and are provided in many public places such as metro stations, shopping centers, schools, and business offices.

ACQUIRING SURGICAL MASKS AND HAND SANITIZERS

The prominent use of surgical masks has inevitably led to panic buying and speculative hoarding in Hong Kong. Health authorities should ensure sufficient supply of surgical masks and hand sanitizers. Any legislation aiming for fair distribution of surgical masks should be enacted. For example, the Macao government announced on January 23, 2020, that each citizen was entitled to purchase 10 masks every 10 days at a nominal price. Passengers taking buses and taxis were required to wear surgical masks. Taiwan, where the outbreak is also well contained, has banned the exports of surgical masks to ensure sufficient domestic supply. Online platforms were created for surgical mask ordering, and interactive maps show real-time information about store location and stock. In response to the shortage in surgical masks, some companies in Hong Kong now produce surgical masks for domestic sales with manufacturing machines purchased for the current COVID-19 outbreak.

Research on the effectiveness of surgical masks and hand hygiene should be on the agenda, which would require large-scale epidemiological studies. If their efficacy is proven in the future, then health authorities should promote or demand the use and fair distribution of surgical masks in public places to prevent individuals from being infected and from infecting others, given that COVID-19 can be transmitted by asymptomatic individuals. Policies, such as tax concessions, that encourage surgical mask and hand sanitizer manufacturing should be implemented. **AJPH**

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C. Leung drafted and proofread the editorial. S. Sridhar prepared the literature review and proofread the editorial. P.-L. Ho proofread the editorial.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

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