

CORRESPONDENCE

Sentinel surveillance at airports: Experience of dengue and COVID-19 prevention in Taiwan

By March 2020, SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) had spread globally and COVID (coronavirus disease)-19 had been declared a pandemic by the World Health Organization. The low number of cases of COVID-19 in Taiwan as of May 2020 highlights the effectiveness of nonpharmaceutical measures to contain spread of the virus. Most (79.4%) of the COVID-19 cases in Taiwan have been imported. During the SARS outbreak in 2003, transmission of the SARS-CoV virus was reported in airplane cabins,¹ and transmission of SARS-CoV-2 has also been reported in aircraft.² It is therefore important to detect imported cases at airports during the containment stage to fight COVID-19. However, the efficacy of airport sentinel surveillance for COVID-19 has not clearly been identified.

Since 2003 (the year of the SARS epidemic), noncontact infrared thermometer-based screening systems have been used for rapid, noncontact surveillance for febrile passengers arriving at all international airports in Taiwan.³ Cases of dengue are recorded in Taiwan every year, with the dengue strain in Taiwan being the same as the epidemic strain in southeast Asia.⁴ Therefore, febrile passengers coming from dengue-endemic countries to Kaohsiung International Airport (KIA) have been requested to receive testing for dengue since 2007. From 2007 to 2010, 3.3% to 14% of dengue cases in Taiwan were detected by fever surveillance measures at airports.³ From 2018 to 2019, there were 11 720 175 inbound passengers at KIA, of whom 1218 (0.01%) were identified as being febrile by the system. A total of 776 cases were tested for dengue, and 13 (1.675%) were positive (data from Kaohsiung Health Bureau). The early detection of imported tropical diseases, including dengue, with fever surveillance at airports lowers the risk of dengue transmission to the community.

As mentioned, the airport fever surveillance protocol was initiated due to the SARS outbreak in 2003. However, COVID-19 can be transmitted by people who have mild or asymptomatic infections, which makes the syndromic detection of COVID-19 cases difficult. In 2020, COVID-19 screening stations were set up at airports close to hospitals to provide services for travelers from COVID-19 endemic areas. The Taiwan Public Health authority also set up temporary on-site COVID-19 screening stations in international airports when the number of imported cases was high. The airport COVID-19 screening station at KIA ran from

February 26 to March 17. A total of 129 persons were sampled, none of whom were positive. However, 138 (39.3%) of the 351 imported cases in Taiwan were detected at the screening station in Taoyuan International Airport, which is the main gateway of international travel in Taiwan (data from June 5, 2020: <https://at.cdc.tw/8EM667>).


These findings revealed that sentinel surveillance at airports detected 3.3% to 14% of dengue cases and 29.2% of imported COVID-19 cases in Taiwan, even though a high number of passengers were screened and the positive rate of symptomatic passengers was low. In addition to sentinel surveillance, other interventions at airports such as onboard quarantine announcements and home quarantine notices delivered to each passenger highlight the multidisciplinary measures at national gates required to effectively prevent the spread of SARS-CoV-2, especially during the containment stage of pandemic control.

CONFLICT OF INTEREST

All authors declare no conflict of interest.

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