

## Letter to the Editor

# Reducing onward spread of COVID-19 from imported cases: quarantine and ‘stay at home’ measures for travellers and returning residents to Singapore

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In Singapore, beginning 28 January 2020, a 14-day ‘Stay-Home Notice’ (SHN) was imposed on visitors and returning residents from a progressively expanded list of countries where COVID-19 was reported. This was one of the several measures implemented to limit the importation of COVID-19. Other measures included entry restrictions for tourists from high-risk countries, temperature and health screening at ports of entry and advising residents against all travel.<sup>1</sup> SHN was conceptualized to restrict travellers to a place of residence for one incubation period, so as to prevent subsequent local transmission and to detect infections early. Visitors have to provide proof of the place where they will serve SHN, such as hotels or a family member’s home. Persons under SHN are instructed to remain in a separate room and to minimize contact with others, such as by having meals placed outside their rooms.

The SHN differs from a quarantine order, which is issued to close contacts of confirmed cases and therefore at higher risk of infection. Persons under quarantine are transferred directly to hospital via ambulance for testing if they develop symptoms, whereas persons under SHN can be assessed at primary care clinics. Nonetheless, both are similar in concept and legally enforceable. Persons under SHN are sent text messages on their mobile phones at random times during the day with a unique web link. When clicked, the link prompts the individual to turn on the GPS location service to report his or her location. If the individual does not respond within an hour, public officials will make video calls or house visits. The Infectious Diseases Act provides legal power to prosecute noncompliance, including electronic tagging with tracking devices, fines and imprisonment.

As of 4 April 2020, more than 60 000 persons were issued SHN in view of their travel history. In the 2 weeks from 18 to 31

March 2020, only 10 secondary cases arose from 207 travellers put on SHN, mostly in the household setting. In contrast, 24 secondary cases arose from 195 travellers before the SHN rules were in place. The 7-day moving average of the interval from symptom onset to isolation for imported cases in Singapore has decreased from 9.0 to 0.9 days.<sup>2</sup>

The finding of some household transmissions from persons under SHN prompted authorities to introduce a tighter ‘enhanced SHN’ regime, with mandatory stays in government-designated hotels for those returning from countries with high risk of importation of COVID-19. Since 26 March 2020, returnees from the UK and USA are put on enhanced SHN in view of the large number of returnees from these countries testing positive for SARS-CoV-2. This was extended to returnees from all countries on 9 April 2020. Travellers are transported directly from the airport to the hotels, where they are not allowed to leave their individual rooms, which are managed with infection control precautions. The government pays for their stay, including meals and laundry. Over 12 000 hotel rooms were reserved for this purpose, which also supports the hospitality industry. Of note, there has been no secondary transmission from travellers under enhanced SHN to date.

There are several issues SHN poses for individuals, and Singapore has taken steps to mitigate them. First, individuals face potential loss of income and livelihood. To address this, the government provides economic support of \$100 per day to self-employed persons and businesses with employees under SHN. Laws were enacted to stop landlords and dormitory operators from evicting occupants serving SHN in their premises.

Individuals may lack general and medical supplies, especially for those staying alone, the elderly and other vulnerable groups.

Individuals may also experience anxiety, fear and psychological distress due to restriction of liberty.<sup>3</sup> Daily updates on the outbreak situation are provided to build community understanding on the need for SHN. A hotline was setup to provide assistance and special arrangements such as food and supply deliveries to those serving SHN. Specific exemption criteria and workflow were developed for persons needing to leave their place of residence for medical attention or on compassionate grounds. The government also offers hotels as an alternative SHN site for those who feel their homes are not suitable.

SHN as a form of quarantine has reduced the spread from imported COVID-19 cases in Singapore to the community. Countries looking at similar measures should consider the operational challenges and find appropriate solutions to address them.

## Declaration of interests

We declare no competing interests.

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## Author contributions

All authors contributed equally to the literature review, data collection and writing of the manuscript.