Opinion_

COVID-19 risk on public transport: What we can learn from overseas

20 March 2020

What are the best ways to reduce infection risk?

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Australia can learn from how other countries are reducing the spread of the virus on public transport, writes Dr Yale Zhuxiao Wong

Public transport in our cities is highly vulnerable [https://arxiv.org/pdf/2002.03564.pdf] to disease outbreaks such as the global coronavirus (COVID-19) pandemic. However, public transport is the lifeblood of our cities, so it's desirable to keep services running as long as possible. Australia can learn from what has been done overseas, especially in China, where concrete strategies to reduce the spread of the virus on public transport helped eventually to contain the disease [https://www.weforum.org/agenda/2020/03/chinas-response-shows-how-bold-decision-making-can-contain-coronavirus/] .

The confined spaces and limited ventilation of public transport vehicles could lead to infections among passengers [https://www.scmp.com/news/china/science/article/3074351/coronavirus-can-travel-twice-far-official-safe-distance-and-stay] , while frontline transport workers are particularly exposed. An outbreak among these workers could bring entire fleets to a standstill. It would also disrupt the travel of health workers [https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/article/mitigating-absenteeism-in-hospital-workers-during-a-pandemic/BA31A10A4895A828CC597CB3212AE020] who need to be mobilised during the pandemic.

Unions representing transport workers have rightly voiced their concerns [https://rtbuexpress.com.au/sydney-and-nsw-trains-coronavirus-update/] and imposed actions including a unilateral ban on cash handling [https://twunsw.org.au/press/twu-ban-on-cash-handling-by-bus-drivers-in-nsw-and-the-act-due-to-coronavirus/] . The Australian government has offered guidelines [https://www.health.gov.au/sites/default/files/documents/2020/03/coronavirus-covid-19-information-for-drivers-and-passengers-using-public-transport.pdf] for drivers and passengers. Transport authorities [https://www.smh.com.au/national/nsw/vulnerable-position-sydney-transport-workers-flag-coronavirus-fears-20200312-p549k0.html] have engaged expert taskforces and begun the process of sourcing products like hand sanitisers.

While these steps are important, surely we need advice beyond general instructions to "practise good hygiene" and "use disinfectant wipes"?

China is using QR codes to help trace sources of viral contact and contraction. Joe Ma, Author provided (No resuse)

What are other countries doing?

In China, despite most of the country being in lockdown, public transport was entirely suspended only in Wuhan and its commuter belt [https://www.scmp.com/news/china/society/article/3047278/wuhan-goes-shutdown-china-tries-contain-deadly-coronavirus] . Buses were then used to move medical staff and deliver goods.

Most other Chinese cities ran reduced public transport services, with a heavy focus on hygiene and sanitation.

In most cities, the temperatures of transport staff are checked daily. They are equipped with adequate protection gear like face masks and gloves. Masks are compulsory for all staff and passengers, as is common practice across Asia [https://www.scmp.com/news/china/society/article/3075211/face-masks-and-coronavirus-how-culture-affects-your-decision] .

In a typical city like Shenzhen [http://en.szbus.com.cn/news/30.html] , the bus fleet is sanitised after each trip. Particular attention is paid to seats, armrests and handles. At depots and interchanges, this is done as often as every two hours.

Buses are filled to no more than 50% capacity (one person per seat). On-board cameras are used to enforce this rule. Floor markings (also adopted in Europe) provide a guide to minimum distances between passengers and encourage social distancing [https://www1.health.gov.au/internet/main/publishing.nsf/Content/519F9392797E2DDCCA257D47001B9948/%24File/Social-2019.PDF] .

Across China, health control checkpoints [https://www.scmp.com/news/china/society/article/3045888/we-know-who-you-are-chinas-subways-track-commuters-security] are being used at train and metro stations (as well as in many public and private buildings). This enables temperature checks and the tracing of the movement of people, in case of contact with a suspected COVID-19 carrier. In many taxis, buses and metro carriages, passengers are encouraged to scan a QR code to register their name and contact number, to help with contact tracing [https://www.who.int/features/qa/contact-tracing/en/] .

Constant public education reminders are broadcast to passengers.

Cities across Asia are providing hand sanitiser gel in public transport vehicles and interchanges. Cleaning of air-conditioning filters has been enhanced. To increase natural ventilation and reduce the risk of infection, some operators have retrofitted window vents to air-conditioned fleets.

Hong Kong rail operator MTR is even using a fleet of cleaning robots [https://www.railwaygazette.com/technology-data-and-business/metro-operator-deploys-cleaning-robot-to-fight-the-coronavirus/55995.article] to disinfect trains and stations. In Shanghai, ultraviolet light [https://www.channelnewsasia.com/news/asia/coronavirus-china-uv-light-disinfect-buses-lifts-banknotes-12535916] is being used to disinfect buses.

In Europe, many public transport agencies have closed off use of the front door to reduce infection risk for drivers. Passengers now use the rear door (all-door boarding [https://www.ingentaconnect.com/content/lse/jtep/2013/00000047/00000001/art00006] has been common practice).

Some bus operators have retrofitted opening windows to help increase air circulation. Kowloon Motor Bus [http://www.kmb.hk/tc/news/press/archives/news202003113582.html] , Author provided.

What's happening in Australia?

One of the best ways to reduce infection risk is to step up cleaning efforts. Public transport operators are already doing this, but not to the extent required during the course of the day.

Most private bus operators (contracted to government) are simply not equipped to take on the massive task if required to disinfect their vehicles, say, three times a day. For many operators, drivers are required to "sweep" their bus at the end of their shift. Buses undergo a full interior clean overnight.

There is no capability to clean buses en route during shifts. Extreme cases like biohazard incidents (blood and vomit) require vehicles to be taken out of service.

To increase the frequency of cleaning, perhaps a government authority could organise "rapid response" cleaners stationed at terminals. While this might cause delays between trips, it would reduce the pressure on individual operators. Having a cleaning crew work across multiple operators would also be more efficient.

The government could provide free health services via video consultation for frontline transport workers. The critical role of the transport sector also warrants their protection through government-issued face masks, especially given how hard it is now to source these [https://www.abc.net.au/news/2020-03-05/coronavirus-covid-19-gps-cant-get-face-masks/12023752] in the community.

These proactive measures based on disease prevention should always be preferred to any reactive approach after a major outbreak hits our transport system. Industry associations like the American Public Transportation Association (APTA) [https://www.apta.com/wp-content/uploads/Standards_Documents/APTA-SS-SEM-S-005-09.pdf] and International Association of Public Transport (UITP) [https://www.uitp.org/sites/default/files/cck-focus-papers-files/Corona%20Virus_EN.pdf] have developed a suite of responses that can be adopted.

Our transport authorities and operators must step up in this critical time of need.

This article was first published on [The Conversation [https://theconversation.com/to-limit-coronavirus-risks-on-public-transport-heres-what-we-can-learn-from-efforts-overseas-133764?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20March%2017%202020%20-%201564414962&utm_content=Latest%20from%20The%20Conversation%20for%20March%2017%202020%20-%201564414962+CID_eae904083f13b3707b439d6174423e6a&utm_source=campaign_monitor&utm_term=To%20limit%20coronavirus%20risks%20on%20public%20transp](#)
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❗ [#COVID](#)-19 update.

For more information, please visit: [bit.ly/3aYREkW](#)

COVID-19 update:

We're sad to report that one of our first-year students has tested positive for COVID-19. We have offered support to the student and their family, and we wish them a speedy recovery.

All students and staff in classes with the student are being contacted. Some of these students will need to self-isolate for 14 days. NSW Health has advised others to remain off campus for 14 days as a precaution, and continue their studies online where possible. All have been offered support and advice on monitoring their health.

All areas of campus will be open and classes will continue as usual on Monday 16 March, on the advice of NSW Health.

Our staff are also working rapidly to transition as many Units of Study to online mode as possible. Please check your Canvas page for the arrangements for your class.

Please continue to follow the advice of government health officials, and practice healthy hygiene habits. Keep checking our website for updated information.

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