

Review of Western Australia's Hotel Quarantine Arrangements

Interim Advice #1

Tarun Weeramanthri, 4 February 2021

Scope of This Advice

The Review of Western Australia's Hotel Quarantine Arrangements was announced on 1 February 2021, and commenced on 2 February. It was commissioned by the Western Australian Government in light of the international COVID-19 situation, and the recent infection of a hotel quarantine worker, who was diagnosed with COVID-19 on 30 January 2021. This new case has led to an initial 5-day lockdown (31 January – 5 February) in the Perth metropolitan, Peel and South West regions of WA, whilst intensive contact tracing and testing is undertaken in the community.

The review is complementary to a parallel investigation (Case #903), not formed on the basis of a criminal investigation, being undertaken by WA Police Force, to examine how the case contracted COVID-19, and to confirm the further movements and contacts of the case.

As required by the terms of reference of this review, ongoing advice will be provided in order to inform hotel quarantine (HQ) arrangements, identify opportunities for improvement, and allow for quick adjustments as needed.

This first advice is based on initial interviews and site visits to hotels participating in the program, as well as prior work I have done on COVID-19 in WA, Victoria and for the Commonwealth. It is therefore selective, and provides suggestions on how to improve the effectiveness of the current operating model.

As part of our initial focus on infection prevention and control (IPC) as a key means of controlling public health risk, we have brought in a specialist advisor in infectious diseases to work as part of the review team.

Context

It has been over a year now since the first case of COVID-19 was diagnosed in Australia.

National Cabinet made the decision to require returning international travellers to quarantine for 14 days in 'designated facilities,' such as hotels, on 27 March 2020.

WA has adapted its response based on emerging science regarding the biology and transmission of the SARS-CoV-2 coronavirus.

It is generally accepted that WA has implemented a particularly successful response based on sound public health measures, leading to no cases of COVID-19 acquired in the community from 12 April 2020 to 29 January 2021.

Over 37 000 people have been through the HQ system in WA since its inception in late March 2020, with over 500 international travellers testing positive for COVID-19.¹ The COVID-19 case in January 2021 that triggered this review was the first case arising as a result of transmission from HQ into the WA community.

The authorising regulatory environment in WA has been established primarily under the *Emergency Management Act 2005* and the *Public Health Act 2016*. The Controlled Border for Western Australia Directions,² which replaced the Quarantine (Closing the Border) Directions,³ both require international arrivals (with very limited exceptions) to undertake 'centre quarantine'. Schedule 2 of the current Directions set out the detailed requirements,

¹ As at 3 February 2020, 513 overseas arrivals (excluding cruise ships and commercial vessels) had tested positive for COVID-19 (Source: WA Department of Health).

² Includes the Controlled Border for Western Australia Directions, effective 12.01 am 14 November 2020, subsequent amendments, and associated authorisations and approvals.

³ Includes the Quarantine (Closing the Border) Directions, effective 5 April, subsequent amendments and associated authorisations and approvals; which were revoked on 13 November, 2020.

including to remain inside their allocated room, with the door closed, for 14 days. Directions and approvals under the *Public Health Act 2016* cover testing of international travellers in quarantine,⁴ and other Directions under the *Emergency Management Act 2005* require quarantine centre workers⁵ (includes security, cleaning, reception, health and welfare staff as well as police officers working in HQ) and quarantine centre drivers⁶ to present for testing every seven days (seven day presentation protocol).

The Directions for quarantine centre workers now also require them to present for salivary testing before the completion of each shift at the HQ.⁷ If a person tests positive for COVID-19, they are then managed under Isolation (Diagnosed) Directions (No 2).⁸

In addition to testing, the directions provide that quarantine centre workers/drivers who have, or have had, specified COVID-19 symptoms, should contact the 13 COVID line for instruction, and follow the instructions given to them. The 13 COVID line script does not differentiate between quarantine workers and the general public.⁹

WA Police Force have rapidly implemented an administrative process to monitor their officers' compliance with the testing requirements.¹⁰

While the Directions are issued by the Commissioner of Police, in his capacity as State Emergency Coordinator (SEC), the HQ program is run by the State Health Incident Coordination Centre (SHICC) in the WA Department of Health. Twelve hotels in Perth have been requisitioned under Section 182 of the *Public Health Act 2016*, for quarantine purposes during the pandemic, with nine currently in use. They are close to hospitals should guests need medical care, have access to adequate staffing, and do not require further transport outside of the metropolitan area, which would increase contact risks in the wider community. Health department, including IPC support, is also close at hand.

Viral Transmission and Infection Prevention and Control

SARS-CoV-2 is the coronavirus that causes COVID-19 disease.

Evidence supporting various routes of SARS-CoV-2 transmission¹¹ has built over the last year. Short range (< 1.5 metres) respiratory droplet transmission has always been recognised and remains predominant. More recently, the importance of longer range airborne transmission has been highlighted. Airborne transmission is a particular risk in enclosed settings with inadequate ventilation where the infectious person has been present for a prolonged period of time (> 30 minutes).

⁴ COVID-19 Testing Directions (No 2) and Chief Health Officer Approval to Conduct COVID-19 Testing People Isolated or Quarantined, effective 11.59 pm 2 September 2020.

⁵ Presentation for Testing (Quarantine Centre Workers) Direction (No 4), effective 12.01 am on 30 January 2021. Original Presentation for Testing (Quarantine Centre Workers) Direction came into effect on 20 November 2020.

⁶ Presentation for Testing (Quarantine Vehicle Drivers) Directions, effective 8.05 pm 7 January 2021, which replaced the Quarantine Centre Drivers Direction that came into effect on 15 January 2021.

⁷ Presentation for Testing (Quarantine Centre Workers) Direction (No 4), effective 12.01 am on 30 January 2021

⁸ Isolation (Diagnosed) Directions (No 2), effective 00.01 am 5 December 2020, replacing the Isolation (Diagnosed) Directions that came into effect on 9 May 2020.

⁹ Email communication from Anthony Robertson, WA Police Force 4 February 2021.

¹⁰ Email communication Acting Commander Brad Sorrell, WA Police Force, 3 February 2021.

¹¹ Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission, CDC, Updated Oct. 5, 2020, available online: <https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-sars-cov-2.html>. Role of Aerosol Transmission in COVID-19, SAGE Environment and Modelling Group available online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907587/s0643-nervtag-emg-role-aerosol-transmission-covid-19-sage-48.pdf

In recent weeks, a number of SARS-CoV-2 variants have been identified¹² that are of public health concern as they have shown increased transmissibility allowing them to spread rapidly through populations. These variants of concern include B.1.1.7 (also known as VOC 202012/01), VOC 501Y.V2 and variant P.1 first identified in the UK, South Africa and Brazil respectively. It has been estimated that people infected with the B.1.1.7 variant have 4 times as much virus in their respiratory samples, this is associated with a 70% increase in transmissibility.

We have also learned that COVID-19 can present with a wide variety of symptoms, and any symptoms at all, however non-specific, in a quarantine centre worker should trigger immediate COVID-19 testing as part of a health assessment.

In their statement,¹³ the Australian Health Protection Principal Committee (AHPPC) reinforces essential infection prevention management based on the 'Hierarchy of Control' conceptual framework. This highlights the primary importance of engineering and administrative controls. These overarching mechanisms reduce risk for all personnel, whereas personal protective equipment (PPE) acts at an individual level. The use of PPE is often essential but should be seen as the last line of defence. Effective use of PPE is reliant on adequate training and an ongoing programme of reinforcement, supervision and monitoring.

IPC Protocol Breaches, HQ Principles and Jurisdictional Reviews

Following the first wave of COVID-19 transmission in Australia, subsequent outbreaks, including the large second wave in Victoria, have stemmed from breaches of HQ, with subsequent transmission of the virus from international travellers to quarantine workers, and then on into the community. (It is to be expected that some people returning from overseas will develop COVID-19 in quarantine, but this is not a public health problem if they remain isolated until the disease can no longer be transmitted.)

AHPPC released 'Australia's National HQ Principles' in December 2020. The first principle states that 'the major focus of HQ programs must be to minimise the risk of transmission of infection into the community.' Other principles emphasise strong and transparent governance, clear chains of command, good operational plans, systematic risk management, and strong end to end infection prevention and control.

In recent months, there have been cases of quarantine workers infected with COVID-19 in NSW, South Australia, Queensland and now WA. On 3 February 2021, Victoria announced a further case in a HQ worker, as well as transmission between guests in HQ, which is suspected to have occurred via airborne transmission from the opening and closing of doors.

Some of these outbreaks and cases have triggered formal reviews. The one of most relevance to guide the initial stages of this review is the Victorian COVID-19 Hotel Quarantine Inquiry,¹⁴ which recommended that quarantine programs should be viewed as public health programs with a primary focus on IPC. Further advice in subsequent weeks will draw more on other reports including recent HQ reviews in South Australia and Queensland.

There was also a set of breaches in use of personal protective equipment (PPE) at State Supervised Quarantine Facilities (SSQF) in WA in early January 2021. Fortunately, these

¹² European Centre for Disease Prevention and Control. Risk related to spread of new SARS-CoV-2 variants of concern in the EU/EEA, first update – 21 January 2021. ECDC: Stockholm; 2021.

¹³ Australian Health Protection Principal Committee (AHPPC) coronavirus (COVID-19) statements on 24 April 2020 <https://www.health.gov.au/news/australian-health-protection-principal-committee-ahppc-coronavirus-covid-19-statements-on-24-april-2020#:~:text=Adapted%20from%20the%20CDC%20website,schedules%2C%20hand%20hygiene.>

¹⁴ Victorian Government: COVID-19 Hotel Quarantine Inquiry Full Report, 21 December 2020.

breaches involving a patient with the B.1.1.7 variant did not result in any new COVID-19 infections. A separate report (a 'root cause analysis') on these breaches is being prepared by the Department of Health, and should prove useful to this review.

Current Situation

The HQ Program in WA continues to evolve. Department of Health staff conduct face to face IPC training with staff from all involved agencies. They aim to complete weekly safety audits at each HQ site to monitor compliance with good IPC practice.

Following a decision of National Cabinet, WA introduced daily shift salivary testing of quarantine centre workers across all sites on 30 January 2021.

Prior to February 2021, health department policy only required quarantine centre workers to wear PPE during interaction with a guest. This included face-to-face interaction during check-in and departure as well as the handling of guest items (e.g. luggage, delivery of meals, collection of rubbish and used linen). In particular, there was no requirement for static security guards on duty in corridors in quarantine hotels to wear a mask unless a physical distance of at least 1.5 metres distance with the guest could not be maintained.¹⁵

On 31 January 2021, all people in the Perth, Peel and South West regions of WA, aged 12 years and over, were required to wear a mask at all times when outside their place of residence. This includes workplaces, and applies to all quarantine centre workers.

Investigation of Case #903 is still ongoing, and COVID-19 airborne transmission from a hotel guest to the worker is considered likely.

Assessment

The major and dominant risk for further COVID-19 infections in WA arises from infections (including new, more transmissible strains) arising in returned international travellers, and transmitted to community members working in quarantine hotels, through breaches in infection prevention and control protocols. This will remain the dominant risk even after a successful vaccine rollout in Australia (planned for late February-October 2021).

The consequences of a new community case are so costly in economic and health terms that HQ arrangements require exceptional attention, and all reasonable precautions should be taken to prevent community transmission. In other words, given the very low risk appetite for COVID-19 transmission in the WA community, whatever model of HQ is chosen, execution of its elements needs to be near 100% perfect.

The fact that the Department of Health is the lead agency for pandemics, and directly responsible for HQ is the best starting point for a strong program. It has helped keep WA free of COVID-19 community transmission for 10 months. However, recent breaches have shown that the system can be improved, and needs to continue to evolve as new strains emerge with potentially higher transmissibility.

Health facilities are built to engineering standards that include ventilation designed to prevent the spread of infectious diseases. Hotels are designed for amenity and although intake of 100% fresh air rather than recirculation appears to be common practice, other features such as rate of air change, relative room pressure and subsequent air flow may not be prioritised. Understandably, adequacy of ventilation was not a factor in the initial selection of HQ sites and since that time, there has been no formal assessment of airflow or ventilation.

¹⁵ WA Department of Health, 2020. Infection prevention and control guidelines for state quarantine facilities v9.0 Last updated: 24 December 2020.

The HQ program needs to take into account strong emerging evidence for airborne transmission. Such transmission likely explains the recent Case #903 and may explain similar cases in other jurisdictions. This makes ventilation a key modifiable factor to reduce risk of transmission in the HQ environment.

In summary, over 2020 there were many positive changes to minimise risk in quarantine hotels, including physical distancing, strict separation of red and green zones, careful design of movement flows for guests and staff, IPC training for staff, strict environmental cleaning protocols and the like. These efforts have been successful in minimising the risk of direct droplet transmission and indirect transmission from environmental surfaces.

But adequacy of ventilation has not been systematically assessed in HQ sites, and may now constitute the biggest single residual risk in the HQ system, allowing airflow from rooms with infected guests to other areas such as corridors, where staff can be working and exposed. This issue needs to be investigated as a matter of urgency, and risk mitigation measures introduced immediately as a precautionary measure. Under the 'hierarchy of controls' framework, addressing ventilation design issues would be the most effective primary and sustained method of control, though other measures (such as use of PPE) will be necessary in the shorter-term.

Because of the importance of this issue and the fact that it has not yet been addressed to the same degree as other issues, I have separated the recommendations that follow into Ventilation and Other Non-Ventilation categories.

Opportunities for Improvement To Further Reduce Public Health Risk In Quarantine Hotels

Ventilation recommendations

1. WA Government to instigate an immediate independent expert review of airflow and ventilation in all WA quarantine hotels, to inform any risk mitigation strategy for airborne transmission from infected guests to quarantine workers, and determine appropriate ventilation standards. This review could be conducted by a consulting engineer (mechanical building services) in conjunction with an occupational hygienist.
2. In the meantime, SHICC to require all quarantine centre workers to wear face masks at all times while indoors, and strongly consider a higher level of respiratory protection (e.g. P2/N95 masks and/or eye protection) for all workers at sites where ventilation may be problematic or not adequately assessed.
3. Consider ventilation adequacy when requisitioning quarantine hotels.

Other non-ventilation recommendations

4. Introduction of daily shift salivary PCR testing, in addition to weekly nasopharyngeal swab PCR. This has already been introduced in WA and is welcome as it potentially provides a means for early diagnosis of COVID-19. SHICC should now monitor compliance with such testing, to provide system assurance that all HQ staff (whether hotel employees, government employees or contractors) are being tested.
5. Quarantine centre workers to not work at other sites, and not to be financially disadvantaged by such a restriction. This is consistent with recommendation 22 of the Victorian COVID-19 Hotel Quarantine Inquiry that stated 'every effort must be made to ensure that all personnel working at the facility are not working across multiple quarantine sites and not working in other forms of employment.' We are informed that this is being actively progressed by the WA Government.
6. SEC to strengthen the Direction, and SHICC to strengthen protocols for testing and medical care of quarantine workers who develop any symptoms or fall ill.
7. SHICC to:
 - A) monitor and provide system assurance that all HQ staff undergo regular face to face IPC training.
 - B) introduce periodic external IPC safety audits (as recommended by the Victorian COVID-19 Hotel Quarantine Inquiry) to complement the current weekly internal safety audits at each site.

Future Work

There is an array of agencies, public and private, that have different roles and responsibilities in hotel quarantine in WA. However, the public expectation is that 'someone in government' will be ultimately responsible for a critical service like hotel quarantine, whether or not a particular service is outsourced to a private contractor or company. This expectation is enhanced by the legal requisitioning of hotels for quarantine purposes by the state government.

This initial advice is focused mainly on operational systems and protocols for HQ, as they relate to on-site ventilation and IPC issues that directly impact public health risk to the community.

There is a direct connection between operational systems and protocols and the overarching governance, accountability, organisational and risk management structures, to which we will next turn.

