

# Health Report

## Risk mitigations to support the safe re-opening of the Pullman Managed Isolation Facility

<b>Date due to MO:</b>	15 February 2021	<b>Action required by:</b>	N/A
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<b>To:</b>	Hon Chris Hipkins, Minister for COVID-19 Response		
<b>Copy to:</b>	Hon Dr Ayesha Verrall, Associate Minister for Health		

### Contact for telephone discussion

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<b>Carolyn Tremain</b>	Chief Executive, Ministry of Business, Innovation and Employment	

### Minister's office to complete:

- |   |                                    |  |
|---|------------------------------------|--|
| <input type="checkbox"/> Approved             | <input type="checkbox"/> Decline   | <input type="checkbox"/> Noted               |
| <input type="checkbox"/> Needs change         | <input type="checkbox"/> Seen      | <input type="checkbox"/> Overtaken by events |
| <input type="checkbox"/> See Minister's Notes | <input type="checkbox"/> Withdrawn |  |

Comment:

# Risk mitigations to support the safe re-opening of the Pullman Managed Isolation Facility

## Purpose of report

1. This report responds to your request for an urgent update on the investigation into three cases who recently tested positive for COVID-19 after completing their managed isolation at the Pullman managed isolation facility (MIQF).
2. It provides an interim update on the risks identified at the Pullman during this investigation, as well as the measures – those that are planned, underway and completed – to address these risks. It also provides advice, where possible, on how effective these measures are expected to be in mitigating the risk associated with accommodating returnees at the Pullman.

## Summary

3. Three incidents of transmission of the more infectious COVID-19 variant first identified in South Africa within the Pullman occurred between 09 and 24 January 2021.
4. In response, no further returnees were assigned to the Pullman while initial investigations and testing of staff, contractors, current and recent Pullman returnees was undertaken. The Pullman was progressively emptied, with the final returnees exiting on 06 February 2021.
5. The Ministry of Business, Innovation and Employment (MBIE) has advised that the Pullman will need to re-open by 15 February 2021 to accommodate the returnees who have already booked MIQ vouchers and flights.
6. The Pullman incident investigation is well advanced. A number of key risks have already been identified and are summarised in paragraphs 10 – 18. To address these risks, the following measures have either been implemented, or are underway (summarised in Appendix 1)
  - A range of mitigations to improve ventilation throughout the facility, including in the bedrooms and corridors (implemented), and bathrooms and lifts (underway). An upgrade of the Pullman CCTV system to cover more areas of the facility has also been undertaken to further strengthen monitoring of returnee movements;
  - Significantly reducing returnee movements throughout the facility through the implementation of a booking system for exercise and smoking, and conducting health checks and COVID-19 testing from the doors of returnees' rooms (ready for implementation upon re-opening);
  - As an interim measure, reducing capacity at the Pullman to 50% (implemented);

- Occupying the lower levels of the Pullman to increase the potential use of stairwells by able-bodied returnees where practicable, as well as reduce the duration of time returnees spend if the lifts (implemented);
  - Updating the personal protective equipment (PPE) guidance for MIQF staff to require the use of N95/P2 particulate respirators during any close interaction with a returnee (implemented – note that this has wider applications than the Pullman and applies to MIQF staff across the system).
7. Note that the following MIQ system-wide improvements that will further reduce the transmission risk within MIQFs were not fully implemented at the time of the initial Pullman transmission events:
- Pre-departure testing: while not a guarantee that a returnee isn't infected with COVID-19, pre-departure testing may reduce the number of infected returnees entering the MIQ system; and
  - Day 0/1 testing: supports the early identification – and therefore early transfer to a quarantine facility/quarantine zone of a dual-use MIQF – of infected returnees.
8. Multiple factors have likely contributed to the three recent transmission events at the Pullman. While we may never identify the exact transmission mechanisms for these cases, we are confident that we can reduce the risks identified at the Pullman to an acceptable level, and to a level similar to that of other MIQFs, through the mitigations detailed in this report.
9. A final in-depth independent investigation is being overseen by the Pullman Incident Review Technical Advisory Group (TAG) taking into account all the information gathered, and is expected to report back by 01 March 2021. We will update you once the independent investigation has been completed.

## Recommendations

We recommend you:

- a) **Note** that, while it may not be possible to identify the precise transmission mechanisms involved in the recent transmission events at the Pullman, with the risk mitigations detailed in this report, the Pullman Incident Review TAG is confident that risk levels at the Pullman are aligned with the level of risk carried at other MIQFs. **Yes/No**
- b) **Note** that the mitigations detailed in this report target the key risks relating to ventilation, particularly in shared spaces such corridors and lifts. The mitigations also significantly reduce returnee movements within the facility. **Yes/No**
- c) **Note** that recently introduced MIQ system-wide measures such as pre-departure and day 0/1 testing may help to reduce the viral load within MIQ facilities, and further reduce the risk of in-facility transmission. **Yes/No**
- d) **Note** that we will provide you with information on additional enhancements to further reduce risk at the Pullman, once we have completed modelling, by 19 February 2021. **Yes/No**
- e) **Note** that we will update you on the findings of the independent investigation into the Pullman in the week of 01 March 2021. This final report will consider which recommendations are applicable to all MIQFs. **Yes/No**



Dr Ashley Bloomfield  
Director-General of Health  
**Ministry of Health**  
Date: 12/02/2021



Hon Chris Hipkins  
**Minister for COVID-19 Response**  
Date: 13/2/2021



Carolyn Tremain  
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**Ministry of Business, Innovation and  
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Date: 12/02/2021

# Risk mitigations to support the safe re-opening of the Pullman Managed Isolation Facility

## Background

10. The Pullman Incident Review TAG has advised that multiple risk factors are likely to have contributed to the recent transmission incidents at the Pullman. These include:

### *The nature of the pathogen*

11. The three returnees infected at the Pullman were all confirmed to have a variant of SARS-CoV-2 that was first identified in South Africa. Current research suggests that this variant and other new variants are more transmissible than previous variants.
12. There is increasing evidence that people can be infected via very small droplets that remain suspended in the air. The risk of transmission via aerosolised viral particles becomes higher, for example, in closed spaces with poor ventilation, such as lifts and corridors.
13. Airborne transmission may be associated with long range transmission. This did not initially appear to be the case with SARS-CoV-2, but emerging evidence indicates that airborne transmission over distance is possible. This represents a challenging shift in paradigm of our understanding of disease transmission and infection prevention and control (IPC) practices.
14. Mitigation of contact transmission requires physical distancing and PPE-use. Mitigation of surface transmission requires hand hygiene and cleaning, while mitigation of airborne transmission requires air management and ventilation.

### *The environment*

15. Given our evolving understanding of the nature of SARS-CoV-2 (see paragraphs 11 – 14), the ventilation of returnee-accessible areas of the Pullman remains a key focus for risk mitigations. Mitigations to improve the ventilation in returnees' rooms and in the corridors have already been implemented at the Pullman (see paragraphs 19 – 20), however, the ventilation in the lifts of the facility remains an area of concern.

### *The people*

16. The most recent IPC audit of the Pullman (26 January 2021) identified no issues with either staff or returnee use of PPE. Human behaviour remains a key risk, and in particular, the unnecessary and unsupervised movement of returnees around the facility. The more time an (unknown) infected returnee spends in shared spaces outside their room (e.g. in the lift), the greater the risk that aerosolised viral particles may remain suspended in the air of that indoor space.

### *Pullman Incident Review TAG recommendations*

17. The Pullman Incident Review TAG reviewed the risks identified at the Pullman, and the mitigations that have been implemented and are underway, which are detailed below. The TAG advises that with the mitigations detailed below in place, the risk at the Pullman is no greater than in other MIQFs across the system.
18. A summary of the mitigations and actions taken to reduce the risk at the Pullman is provided in Appendix 1.

## Ventilation

19. The recent ventilation review of the Pullman Hotel (HR 20210160 refers) made several recommendations:
  - Recommendation 1: the Pullman's corridor fresh air ventilation system should be operated 24 hours per day. This was implemented on 27 January;
  - Recommendation 2: prior to opening hotel room doors, returnees should close all windows and trickle vents to encourage air to move from the corridor into the room. This guidance was issued to returnees at the Pullman on 31 January;
  - Recommendation 3: when occupancy and distribution imperatives allow, reduce occupancy at the Pullman to one side of the building, in order to reduce the slight risk that may be associated with open windows on both sides of the building. Note that this slight risk is likely to be mitigated through the first recommendation, and the technical advice received suggests that other mitigations detailed below offer greater risk reduction benefit.
  - We therefore note that implementing recommendation 3 is not required (see paragraphs 29 – 31 for further detail).
20. We consider that operating the corridor ventilation system 24 hours a day, as opposed to the 2 hours of operation which was standard at the time of the incidents, will have a significant impact on reducing the risk of airborne transmission in corridors.

### *Bathroom exhaust fans*

21. Some airborne virus may be generated when those infected with COVID-19 have a bowel movement. On site assessments of the bathroom exhaust fans at the Pullman are being planned further to understand the contribution of this mechanism. We aim to complete this assessment by 19 February. The NZ Building Code refers to a NZ standard (fresh air) and an Australian standard (exhaust air) for the Acceptable Solution for ventilation. This allows for a minimum of 25 L/s exhaust.
22. The Pullman pre-dates the Act and aims at only 21 L/s in design. This may not be achieved currently because of age related component fatigue, dirt, blockages and human manipulation.

### *Lifts*

23. Lifts have been associated with one transmission event in the Pullman. Lifts were also associated with an earlier transmission event in 2020. Pullman Incident Review TAG advised that as closed and confined spaces with poor ventilation and high-usage, lifts are the highest risk common areas in all MIQFs in terms of aerosolised transmission of SARS-CoV-2.

24. Planning is underway to install HEPA (high-efficiency particulate air) filtration units inside the three returnee-accessible lifts at the Pullman, with work expected to be completed by 22 February (i.e a week after the first returnees are expected to arrive at the Pullman).
25. Existing modelling shows that the model of HEPA filtration unit that is expected to be installed in the lifts at the Pullman is able to achieve 47 air changes per hour in spaces the size of the Pullman lifts. This will considerably reduce the risk of airborne transmission, as modelling suggests that increasing the air changes per hour from 0.1 to 30 would reduce the risk within the lift by up to 90%.
26. While the HEPA filtration units will mitigate the risk of aerosolised transmission by removing airborne viral particles from the lift, we will further reduce the risk associated with lift-use by reducing returnee movements outside their rooms, thereby reducing the frequency of lift-use among returnees (see paragraphs 32 – 37 below).
27. Wider roll-out of HEPA filtration units in other MIQFs is part of a large piece of work that is already underway (HR 20210071 refers). This includes assessments of airflow within spaces to ascertain which units are required, how many units are required, and where they are best placed. The installation of units within the Pullman lifts will be valuable in informing the wider roll out.
28. As an additional risk mitigation, hand sanitising stations will be placed inside each lift at the Pullman. Note that the Pullman MIQF staff will be advised to use the service lifts when they are not accompanying a returnee.

## **Occupancy**

29. As an interim measure, the Pullman will be re-populated gradually. It will be filled to around 50% capacity for the first returnee cycle. This will support other risk mitigations detailed below, which would be operationally challenging if the Pullman were filled to 100% capacity.
30. Additionally, the lower floors of the Pullman will be used initially. This will enable some able-bodied returnees to use the stairs for scheduled smoking and exercise breaks where practicable, further reducing lift-use in the facility. By occupying lower floors of the building, the duration of time returnees are in the lifts for each trip will also be reduced. Note that enhanced cleaning measures have already been implemented at the Pullman.
31. Note that as an alternative to filling the lower floors of the Pullman, MBIE considered filling one side of the Pullman as per recommendation 3 of the Pullman ventilation assessment (see paragraph 19). Because this would require filling one side of every floor of the hotel, the duration of lift use would not be reduced. Given the lifts were identified as a key risk, the Pullman Incident Review TAG determined that there would be greater benefit from occupying the lower floors of the hotel.

## **Returnee movements within the facility**

### *Scheduling and monitoring movement*

32. Limiting, managing and recording the times that returnees are permitted to leave their rooms is essential to assist with risk mitigation. Returnees will remain in their rooms during their stay and only exit in a controlled manner for approved activities.

33. A booking system for exercise and smoking areas will be implemented at the Pullman. This will allow for 20 – 30 minute time slots to be booked, which includes travel time to and from the exercise/smoking areas. Returnees will not be permitted to leave their room (except for in emergencies) outside of their scheduled exercise/smoking times. Stop smoking support, including Nicotine Replacement Therapy (NRT) such as nicotine patches or gum, will be available to returnees who smoke.
34. To further reduce returnee movement throughout the facility, health checks and COVID-19 tests will be conducted at the door of returnee rooms. Previously due to the size of the Pullman, returnees left their rooms and used the lifts to access the upper floor medical rooms for their health checks and testing.
35. Note that this measure is achievable in terms of workforce while the Pullman is operating at 50% capacity, however, this will require review once returnee numbers increase.
36. An upgrade of the Pullman CCTV system has been undertaken while there have been fewer returnees on-site. This will further assist with monitoring returnees' compliance with the requirement to remain in their room, except for during scheduled exercise/smoking breaks.
37. While there is little additional public health gain to be achieved by asking returnees to remain in their rooms after their day 12 test, we intend to continue with this measure for at least one month, until we are confident that other protocols have been successfully implemented and that risk has been reduced to acceptable levels.

### **Use of N95/P2 particulate respirators by MIQF staff**

38. At the time of the transmission events at the Pullman, MIQF staff were required to use an N95/P2 particulate respirator only in close interactions with a confirmed (or probable) case of COVID-19. In practice, this applied to interactions in a quarantine facility/quarantine zone of a dual-use MIQF, or when transferring a recently identified case from a MIF to a quarantine facility/quarantine zone of a dual-use MIQF.
39. On 30 January, the Ministry of Health issued urgent guidance for immediate implementation that MIQF staff are to use an N95/P2 particulate respirator during any close interaction (less than 2m physical distancing) of **any** returnee.

### **Management of positive cases and clinical governance**

40. A review of the process for moving returnees who have returned a positive COVID-19 test to the Jet Park has been completed and the process subsequently refined. This review considered PPE-use, facility lockdowns during transfers, post-transfer cleaning, the escorting of transfer returnees to control their movements and prevent surface touching, and managing transfers to ensure there is adequate time and space between the case being transferred and other returnees.
41. Note that an IPC audit conducted on 26 January 2021 identified no issues with either staff or returnee use of PPE.
42. Close clinical oversight of the facilities at a regional level is critical, including safety monitoring, reporting, and the ability to escalate clinical risk. Auckland Regional Public Health (ARPHS) currently has limited visibility of the operations of the MIQFs in the

Auckland region. Close public health and IPC expertise oversight will assist with providing assurance that risks are being identified early and addressed to a satisfactory level. This is relevant for all MIQFs across the system.

## Testing

43. The change in variants appears to be associated with a change in transmissibility. As these more transmissible variants become more prevalent, we can expect more cases of COVID-19 in the facilities with these new characteristics.
44. The introduction of pre-departure testing within 72 hours of departure for all countries (apart from Australia, Antarctica and most Pacific Islands) from 25 January 2021 may reduce the number of returnees entering MIQ facilities with COVID-19.
45. However, a negative test is not a guarantee someone is not already infected or subsequently becomes infected en-route to New Zealand. Experience to date has found that overseas tests are less sensitive in some cases. The requirement for pre-departure testing had not yet come into effect at the time of the Pullman incidents.
46. The introduction of day 0/1 testing in all MIQ facilities from 18 January this year is another system-wide improvement which will help with early detection of cases that were incubating pre-departure, or picked up during travel to New Zealand. This has helped reduce the viral burden in isolation facilities through early identification and transfer to a quarantine facility/quarantine zone of dual use MIQF.
47. As an interim incident control measure, returnees that were released from the Pullman were required to stay home for 5 days and undertake a day 5 COVID-19 test. The Ministry of Health is confident that with the additional mitigations detailed throughout this briefing, this is not required for incoming returnees at the Pullman.

## Collecting evidence

48. Most of measures proposed for mitigation of the risk of airborne transmission are based upon general IPC principles. The endpoint for estimating the effectiveness of these IPC principles-based measures is the occurrence of transmission events within facilities.
49. Estimating the risk of SARS-CoV-2 infection can also be undertaken by the detection of airborne virus by PCR or culture. These methods identify (live) virus and are the most accurate in determining the effectiveness of any mitigation (i.e. measuring the amount of airborne viral particles in the air).
50. The calculation of the concentration of airborne particles of a size that could contain virus can also be used as a surrogate measure of airborne viral load. Further, assessment of the adequacy of ventilation in relation to occupancy of a room or space can be undertaken by carbon dioxide monitoring.
51. We are exploring options for measuring the effectiveness of our interventions as above, and will update you on our progress in our next update on 19 February 2021.

## Next steps

52. The Ministry of Health and MBIE will provide you with updated information on the ongoing ventilation modelling of the Pullman, as well as information regarding additional enhancements to further reduce risk at the Pullman, by 19 February 2021.

53. The Ministry of Health will report back to you about the findings of the independent investigation into the Pullman in the week of 01 March 2021.

**ENDS.**

PROACTIVELY RELEASED

# Appendix 1

From	Subject	Recommendation	Implemented	Notes
<b>Returnees - Prior to Arrival in NZ</b>				
Already existing	Pre-departure testing	Pre-departure testing and Day 0/1 testing are additional safeguards, as earlier identification and moving of cases from managed isolation facilities can reduce the risk of transmission.	Implemented	
<b>Returnees - Upon Arrival in NZ</b>				
Already existing	Returnee movement management	Returnees will have scheduled room exits and will only be permitted to leave their rooms at allocated time for exercise or smoking	Implemented	
Already existing	Returnee movement management	As a temporary measure, from 3 February 2021, people who have had their Day 11/12 test are required to stay in their rooms until their designated departure time. This is being reviewed but will stay in place until we are confident that the other additional protocols have been implemented in order to achieve the required risk reduction.	Implemented	
MBIE MIQ Ops	Cohort management	Cohort Options are being analysed with potential to implement different size "cohorts" from current family bubble to larger time-based arrivals (ie all within 72 hrs)	We intend to fill the Pullman to around 50% capacity, initially, over a two day for one "returnee cycle – ie 14/15 days"	
	Cohort management	A review of the movement of returnees with a positive test, who are moved to the Jet Park is being conducted to ensure maximum time/space distance from other returnees.	Completed <ul style="list-style-type: none"> <li>• Separate transfers for bubbles.</li> <li>• Vehicle clean downs between transfers.</li> <li>• The use of PPE (including N95/P2 masks) by staff involved in transfers.</li> <li>• Area (including lift) lockdowns during transfers.</li> <li>• Post transfer cleaning.</li> </ul>	

			<ul style="list-style-type: none"> <li>Escorting transfer returnees to ensure their movement and surface touching is controlled.</li> </ul>	
<b>Pullman Environment and Staff</b>				
IPC Audit	Use of PPE	IPC audit conducted 26 Jan with no issues identified with either staff or returnee use of personal protective equipment.	Completed	
TPs	Other Measures	ESR environmental swabbing conducted	Negative (ie no evidence of virus)	
MoH	Use of PPE	While not specifically related to the Pullman incidents, guidance on the extended use of N95/P2 particulate respirators across all MIQFs was issued on 3 February for all staff who have close interactions with returnees in MIQFs. This change was initiated as a precautionary step in light of emerging international evidence.	Completed	
MoH		We have worked with DHBs to ensure that swabbing techniques of testing teams are appropriate and staff skills are continually reviewed.	Ongoing	
Tech Adv Group	Location of testing/health checks	In order to minimise returnee travel in lifts, daily health checks will be carried out either remotely, or at the returnees door	Implemented – window opening guidance will be re-emphasised on arrival.	ARIQCC to action.
<b>Pullman Facilities</b>				
Ventilation assessment	Air quality	Recommendation 1: the Pullman's corridor fresh air system should be operated 24 hours per day.	This was implemented on 27 January;	
Ventilation assessment	Air quality	Recommendation 2: prior to opening hotel room doors, returnees should close all windows and trickle vents in their rooms in order to encourage air to move from the corridor into the room.	guidance was issued to returnees at the Pullman on 31 January;	The window opening guidance has also been issued to all MIFs
Ventilation assessment	Air quality	Recommendation 3: "where occupancy allows, a third option to mitigate the slight risk from high wind speed and pressures could be to restrict occupancy at the Pullman to one side of the building".	The refill plan includes utilising a cohort approach (2 group of people over a two day period) this will provide evidence on	

		Note that this slight risk is also likely to be mitigated through recommendation 1. MBIE are aware of this recommendation and will consider it as they assess returnee cohorting options in the MIQ system.	how a cohort system would work more widely. The initial plan will only fill to 50%, pending any further requirements from the TAG.	
Tech Advisory Group	Room Allocation	As an interim measure, prior to the installation of the air purification system in the lifts, the returnees will be allocated lower floor rooms to minimise the time they spend in the lifts.	Will be carried out during room allocation.	ARIQCC to action.
Tech Review	Lift ventilation	MIQ personnel traveling without a returnee alongside might be more protected by using the service lifts.	This will be implemented until the lift ventilation air purification upgrades have occurred.	For ARIQCC action.
Tech Review	Lift Operation	The Pullman has returnee rooms or suites from floor 2 to 14 (13 floors). It may be possible to limit the travel of certain lifts to certain floors as a part of a separation of cohorts. For example Lift 1 to L2 to L 5 (4 floors), Lift 2 to floor 6 to L9 etc. This will slow traffic but assist with separation.	Not implemented – the Pullman has 3 returnee lifts and restricting lift access would delay personnel and cause unnecessary concentration of personnel in the reception area, or worse, the alcove in which the lifts are located.	
Tech Review	Lift ventilation	A project manager s 9(2)(a) is working on portable air filtration and is specifically looking at Pullman as one of his priorities.  Whilst the feasibility of putting filter unit in the lift car is yet to be worked through, s 9(2)(a) did suggest that where it proves impractical, it might be possible to locate a filter unit in front of a lift door on a particular floor to act as a purging station between trips.	Underway - implementation of the lift modifications is expected to be completed in 10 days (5 days after the first returnees are expected to arrive).	
Already existing	Other Actions	CCTV system being upgraded	CCTV upgrade is underway and should be completed by Sat 13 <sup>th</sup>	
MIQ Ops initiated changes		Hand sanitisers placed inside each lift.	Will be completed by the time returnees are allowed back in.	
<b>Post Departure Returnee management</b>				

Please note: this requirement applied during the period while investigation was ongoing. Since the re-opening of this MIQ facility, returnees are no longer subject to this additional measure

Updated Talking Points		We have implemented an additional test 5 days after leaving the facility, and requested departees to restrict their movements until the departee receives a negative test result	Implemented	
TPs		Health officials have reviewed post departure measures and recommended strengthening the current post departure Wellbeing Check conducted in the week following departure.	This has already been implemented as a control measure for departees from the Pullman.	

PROACTIVELY RELEASED