MIF COVID-19 Joint Incident Review

Report

Review: Grand Mercure Auckland Managed Isolation Facility

Desktop Analysis

5 May 2021

MINISTRY OF HEALTH
MANATŪ HAUORA

EXECUTIVE SUMMARY

The Terms of Reference for this incident review was commissioned through the joint agency Ministry of Health (MOH) and the Ministry of Business, Innovation and Employment (MBIE), Managed Isolation and Quarantine Technical Advisory Group (MIQ TAG), reviewed by the management in each Ministry and approved by the respective Deputy Chief Executive and Deputy Secretary. The Advisory and Planning Group in the COVID-19 Directorate, Ministry of Health, led the review. The Terms of Reference are attached at **appendix 3.**

An interagency team was assigned to conduct the internal review after two incidents occurred at the Grand Mercure Auckland (Grand Mercure), and to determine what, if any, further improvements could be made to the MIQ system to reduce the likelihood of cases occurring via the ventilation system and ensure that the necessary procedures are followed for managed isolation walks (MIW). A consolidated list of acronyms is attached at **appendix 2.**

The following report highlights the assessment methodology, consolidated findings and an action plan with progress indicators and recommendations. Progress against the identified recommendations will be monitored across both Ministries, and the report will be made available for Ministers.

In summation, this review outlines:

- The incidents that occurred at the Grand Mercure Auckland managed isolation facility
- What the issue(s) or problem(s) were that contributed to the incidents
- How the relevant agencies addressed the problems and risks that emerged; and
- Outlines what the Ministries will do so that it does not happen again.

CASE INCIDENT REVIEW TEAM & CONTRIBUTORS

The Case Incident Review team was established on 21 April 2021 and included the following members.

NAME	ROLE, ORGANISATION & EXPERTISE	ROLE IN REVIEW TEAM
Aoife Kenny	Chief Advisor, Advisory and Planning, COVID-19 Directorate Ministry of Health	Review Team Lead
Kristen Davison	Senior Advisor, Advisory and Planning, COVID-19 Directorate Ministry of Health	Reviewer
Tina Bogaard	Senior Quality Assurance Advisor, MIQ Ministry of Business, Innovation and Employment	Reviewer

The following individuals contributed to the review:

NAME	ROLE, ORGANISATION & EXPERTISE	CONTRIBUTING ROLE
s 9(2)(a)	Ventilation engineer and expert	Grand Mercure ventilation review

BACKGROUND TO THE REVIEW

MANAGED ISOLATION FACILITY

The Grand Mercure Hotel is located in Auckland Central. As a managed isolation facility (MIF) the hotel has 207 contracted rooms for returnees off international flights who are entering their mandatory 14 days isolation period.

The Grand Mercure was established as a facility on 25 March 2020 and received its first flight of returnees on 27 March 2020. As at 27 April 2021, the Grand Mercure has processed 4175 returnees (since 1 July 2020) and managed 28 cases who tested positive during their stay.

CASE DESCRIPTIONS

There were two separate, but associated incidents at the Grand Mercure in March 2021.

INCIDENT ONE

On 21 March 2021, the MOH was notified by Auckland Regional Public Health Service (ARPHS) of a Day 12 positive test (secondary case) which was genomically linked to a previous Day 12 positive test (index case) on 19 March 2021. This strongly indicated in-MIF transmission.

A source investigation was initiated following the confirmation of a genomic link between residents of the Grand Mercure Auckland managed isolation facility (MIF). ARPHS did not identify any epidemiological link between the index case and secondary case. This strongly

indicated in-MIF transmission, which potentially occurred via the ventilation system at the facility.

Index Case:

- Arrived on 6 March 2021 s 9(2)(a) (genomically linked to three other cases on the flight)
- Returned a positive Day 12 test on 19 March, following a previous negative test
- Transferred to Jet Park on 20 March
- s 9(2)(a)

Secondary Case:

- Arrived on 8 March 2021 s 9(2)(a)
- Returned a positive Day 12 test on 21 March, following two previous negative tests
- Transferred to Jet Park on 22 March
- s 9(2)(a)

INCIDENT TWO

While not linked to the in-facility transmission, there was also a breach involving the **secondary case** going for an offsite managed isolation walk (MIW) via bus on Sunday 21 March. This was the result of a procedural failure in that the case's blue band was not removed after reporting symptoms. In addition, as a result of non-compliance with the Standard Operating Procedures (SOPs) for the MIW programme, i.e. physical distancing, bus seat allocation and non-adherence to wearing masks, this led to 14 other returnees on the bus being considered close contacts. Subsequently, they were required to stay another 14 days in managed isolation. Please note, no transmission occurred as part of this breach.

KEY FINDINGS

The key findings of the final incident review of the Grand Mercure MIF are:

- While aerosol transmission via the fresh air supply cavity and through the mechanism outlined, seems unlikely, it is nonetheless the most plausible transmission pathway between the index and secondary case. A full on-site ventilation assessment of the Grand Mercure validated this hypothesis
- The risk of downward airflow between rooms via the mechanism outlined by the ventilation experts, appears to be unique to the Grand Mercure Auckland[1]
    - To note, MBIE has been undertaking ventilation reviews at all MIQ facilities. These reviews are expected to be completed shortly, following which analysis of the findings will be undertaken and follow-up options identified

[1] This is unique among MIFs, because the fan coil-units at the Grand Mercure, atypically have fresh air supply riser. It was this arrangement that allowed for potential reverse flow of air from hotel rooms into the shared fresh air supply duct.

- Considering the range of IPC measures and mitigations in place, the overall risk of transmission to the returnees that were accommodated at the Grand Mercure, was low
- A number of actions were recommended and immediately undertaken to reduce the risk of further transmission within the MIF and/or the risk of onward transmission to the community
- A breach in normal procedure resulted in the secondary case's blue wrist band not being removed in error and this returnee attended a MIW whilst presenting minor symptoms, later to return a positive COVID-19 test
- A breach in bus protocols and non-compliance with the Standard Operating Procedures (SOPs) for the MIW programme led to the 14 returnees, classified as close contacts of the secondary case, staying an additional 14-day period in managed isolation
- Various debriefs, rapid reviews and audits were conducted to review the circumstances and offer recommendations for the MIW programme. There were numerous improvements recommended, many of which were immediately implemented. These are outlined in the action plan at **appendix 1**

CONCEPTUAL FRAMEWORK

CRITICAL ASSUMPTIONS

The review of the Grand Mercure MIF is one of several reviews conducted by the MOH and MBIE to assess New Zealand's managed isolation and quarantine facilities (MIQFs). These reviews are conducted as part of the Government's commitment to continuous improvement, and the findings outlined in this report and resulting recommendations will further strengthen the system in the instance of possible future outbreaks or incidents.

MOH and the MBIE, have undertaken a range of initial reviews, IPC audits and debriefs of the Grand Mercure, as well as other MIQFs, and in doing so have worked closely with the ARPHS. The insights and research to date is critical to the overall overcome of this review.

Whilst this review focuses on outlining measures for improvement as a result of the incident of in-MIF transmission and subsequent bubble breach that occurred at the Grand Mercure, there are many areas of the system that have been implemented exceptionally well. It is the success of the wider MIQF system that has been integral to the nation's achievement to keep COVID-19 largely out of our communities.

REVIEW METHODOLOGY

The review team was tasked with examining the circumstances, previous review material and debrief documentation, and independent assessments, to determine what, if any, additional improvements could be made to the MIQF system to reduce the likelihood of cases occurring as a result of an in-MIF transmission in the future. Documentation and reports referred to during this review included:

- Report: Preliminary Grand Mercure Auckland Review (Ventilation Assessment) [Independent – M.Y.D.A.D Limited, 11 March 2021]
- Audit: Grand Mercure Surveillance Audit Report [Ministry of Health, 16 March 2021]

- Rapid Investigation: Grand Mercure – Incident Involving Positive Case/MIW [Ministry of Business, Innovation and Employment, 30 March 2021]
- Memo: Possible In-Facility Transmission at Grand Mercure Hotel [Ministry of Health, 6 April 2021,11:00am]
- Report: Final Grand Mercure Hotel Auckland, MIQ Hotel On-site Ventilation Test Results Analysis [Independent – Airlab, 6-7 April 2021]
- Final Report: Rapid Assessment of MIQ (reviewed and cross-referenced) [Independent – M. Jack and K. Corich, 9 April 2021]
- Notes: MIQ Technical Advisory Group Summary, General Manager Border and MIQ System [Ministry of Health, 13 April 2021]
- Memo: Review of Transport for Managed Isolation Walks [Ministry of Health, 14 April 2021]
- Briefing: In-MIF transmission at the Grand Mercure Auckland, interim report [Ministry of Health, 19 April 2021]

This final report, including additional recommendations was reviewed by officials at both the MOH and MBIE, prior to submission to the interagency technical advisory group (MIQ TAG) and the Risk, Quality and Assurance Advisory Group at MBIE.

The review recommendations are incorporated into an attached action plan at the end of this report and include the responsible agency (team where applicable), any action(s) taken to date and indicative timeframes for change implementation.

LIMITATIONS OF THE REVIEW

The following was out of scope for this review:

- Recommendations that rest outside of MBIE and MOH mandates
- Returnees' feedback or experience
- Any aspects of the Grand Mercure, or other MIFs, that do not relate to the two incidents that are the subject of this review.

RISK-BASED APPROACH TO MANAGING IN-MIF TRANSMISSION

The Ministry of Health has developed a process, in consultation with the MBIE and the ARPHS, to ensure prompt detection, investigation and management of potential in-MIF transmission events through a risk-based approach [MOH Health Report HR20210782].

This approach has been developed alongside responding to potential in-MIF transmission, such as with the incident at the Grand Mercure. Going forward, the advice developed through creating a risk-based approach, will form the basis of how the government responds to events which indicate in-MIF transmission.

It is important to note that there is already a suite of risk mitigations that have been implemented in previous responses to successfully reduce the risk of onward transmission of COVID-19 to the community and will be drawn upon in the management of future events.

A bespoke management plan is required for each event in response to the particular circumstances and the range of public health considerations which will inform decision-making in each situation. Overall, this desktop analysis process has been developed to ensure:

- Rapid individual case investigation and contact tracing, and to manage the immediate risks with the associated case
- Prompt initiation of in-MIF transmission case investigation, as appropriate
- Early identification and implementation of the range of public health risk mitigations, using a risk-based approach
- Streamlined and coordinated incident management and reporting
- Implementation of further interventions to prevent and mange any additional potential in-facility transmission.

In-MIF transmission events will be managed using this process, with mitigations, including the requirement for post-departure isolation and testing, and will be implemented using a risk-based approach. The MIQ TAG has responsibility for considering the suite of risk mitigations that are appropriate for the risk profile and will recommend a range of actions to the affected Public Health Unit (PHU) such as increased surveillance testing for staff, extended MIF stay for close contacts, temporarily closing smoking or exercise areas and/or post-departure from MIF testing and isolation.

DEVELOPMENT OF THE MIQ TAG

The MIQ TAG was established on 29 January 2021 in response to the Pullman incident. The MIQ TAG helped coordinate the various activities underway to respond and review what occurred. It also provided advice to the Director-General on the approach to managing returnees within the facility going forward.

Since then, it has met periodically and in response to:

- Grand Mercure and Grand Millennium cases of in-MIF transmission
- Ventilation onsite assessments underway by MBIE.

Minutes and secretariat support has been provided since the TAG was established. A summary of actions agreed is now contained as part of the minutes summary confirming the advice of the MIQ TAG at each meeting.

The TAG is currently meeting weekly and draft minutes are circulated and reviewed as part of the meeting pack. Any specific advice related to the operation of a facility and management of returnees is sent separately by email on the day of the meeting.

CONTEXTUAL ANALYSES AND FINDINGS

INCIDENT 1 - IN-FACILITY TRANSMISSION

INCIDENT

Two genomically linked cases were identified through routine day 12 testing at the Grand Mercure MIF on 19 and 21 March 2021. Whole genome sequencing confirmed that the two cases associated with 'incident one' had variant B.1.1.7, the variant first recorded in the United Kingdom, and are closely related.

SOURCE INVESTIGATION

The Auckland Regional Public Health Service (ARPHS) led the investigation into the possible in-MIF transmission, which identified no epidemiological link between the index case and secondary case. The focus of this investigation centred on a review of returnee movements, examination of any bubble breaches, CCTV review, key card activation and a ventilation system review to explore the link between genomic linked positive cases at the Grand Mercure.

The leading hypothesis of the source investigation is that index and secondary case transmission was through indirect contact between 12 and 18 March. Given there were no identified breaches or opportunities for contact or droplet transmission between the two cases, this indicted that the in-MIF transmission was potentially via the ventilation system. The guests were staying directly above and below each other, s 9(2)(a)

ANALYSIS: PRELIMINARY ASSESSMENT, VENTILATION SYSTEM

A preliminary onsite assessment was expedited and undertaken by s 9(2)(a), an independent ventilation specialist on behalf of the MBIE on 29 March 2021. This assessment indicated variable air flows and a strong possibility of pressure differences between these rooms, which may have driven air to move downwards s 9(2)(a). This is noted as a likely source of transmission between the index case s 9(2)(a) and the secondary case Further analysis is noted below.

Summary

The mode of transmission is likely to be airborne. There is no evidence of droplet transmission in this incident. How the airborne particles got to the secondary case from the index case (mechanism) is most probably through the facility's ventilation system. This is considered by experts to be plausible, although any evidence is extremely limited.

Mechanism of transmission

The APRHS source investigation did not identify any opportunities for person to person contact. Given the index case s 9(2)(a) was accommodated in a room directly above the secondary case s 9(2)(a) and given the ventilation in these rooms are connected via vertical risers in the fresh air ducts, exhaust ducts and drainage systems, the most plausible transmission mechanism is via aerosol transmission or contaminated air or condensation on exhaust ducts walls. The exhaust ducts and drainage systems s 9(2)(a) on every floor are vertically connected.

Following this, the onsite ventilation assessment for the Grand Mercure was also expedited. Aspects of the ventilation design and operation merit further investigation to confirm that the performance is consistent with the intended design.

Ventilation Hypothesis

Based on the interim assessment, the transmission of the virus via the fresh air supply cavity, through the mechanism outlined, is the most plausible transmission pathway between the index and secondary case. However, the evidence is extremely limited.

Full onsite assessment

A full on-site ventilation assessment of the Grand Mercure validated the hypothesis of airborne particles being transmitted via the fresh air supply cavity. The ventilation expert's discovery of an air path from the index case's room into the joinery of the ventilation system provides a plausible mechanism of transmission. As such, this risk applies across all vertically connected fresh air supply cavities in the Grand Mercure Auckland.

It was noted in the final onsite assessment that it was the opinion of the expert that it may be possible to adjust the building management systems operations to assist meeting the desired room conditions. Where extract fans have been identified as not operating, the hotel needs to consider replacing them and could use variable speed fans that would assist in maintaining a negative pressure in the rooms.

MBIE is continuing to work with the Grand Mercure hotel owners to identify a maintenance plan to address the ventilation concerns as outlined in the assessment report. MBIE has also been undertaking ventilation reviews at all MIQ facilities. These reviews are expected to be completed shortly, following which analysis of the findings will be undertaken and follow-up options identified. Whether or not this mechanism is unique to the Grand Mercure will be determined by this analysis.

RESPONSES, ACTIONS AND LESSONS OBSERVED

CONSIDERATION: MANAGED ISOLATION AND QUARANTINE TECHNICAL ADVISORY GROUP

The Grand Mercure in-MIF transmission was discussed by the Technical Advisory Group (MIQ TAG) on both 30 March and 13 April 2021. These meetings were convened to discuss this likely in-MIF transmission incident and provide advice on:

- The likely transmission path between the index and secondary case, and
- The risk mitigations that could be implemented to reduce the risk of further in-MIF transmission, and/or onward transmission to the community.

In summary, the MIQ TAG concluded that although it seems unlikely, aerosol transmission via a shared fresh air cavity remains the most plausible transmission pathway between the index and secondary case. The MIQ TAG considered that with the range of IPC measures and mitigations in place, the overall risk of transmission to the returnees that were accommodated at the Grand Mercure, was low. However, as part of a process of continuous learning and improvement, a number of actions were recommended by the MIQ TAG to be immediately undertaken to reduce the risk of further transmission in the MIF and/or the risk of onward transmission to the community.

In considering the preliminary ventilation assessment, risk mitigations recommended for implementation, included:

- Whilst the ventilation assessment and investigation work were ongoing, they advised that no new returnees should be held at the Grand Mercure
    - Of note, in practice newly returned individuals were placed in the facility against TAG advice due to a misunderstanding and since this occurred a summary of all agreed actions has been detailed and circulated to ensure this does not occur in the future
- Expediting the preliminary on-site ventilation assessment of the Grand Mercure
- Agreeing, given the concerns identified around the potential transmission between s 9(2)(a), that new arrivals were not to be accommodated in the any of the s 9(2)(a) on each floor as they have the same shared ventilation system
    - As above, in practice newly returned individuals were placed in these rooms against TAG advice due to a misunderstanding and since this occurred a summary of all agreed actions has been detailed and circulated to ensure this does not occur in the future
- Increasing the frequency of regular surveillance testing of staff at the Grand Mercure in Auckland
- Extending the stay of, and requiring additional testing, for returnees identified as close contacts of the index or secondary case
- Implementing post-departure self-isolation and day 5 testing.

INCIDENT 2 - BUBBLE BREACH

INCIDENT

There was a reported 'bubble breach' involving the secondary case. This returnee staying at the Grand Mercure MIF in Auckland participated in two managed isolation walks (MIW), one of 19 March and the other on 21 March.

On 20 March 2021 a health check identified the case had a headache, with no respiratory symptoms reported. It was recommended that the case isolate, and the day 12 swab was taken as per protocol, however the returnee was not isolated after this, due to the recent lift on day 12 restrictions onwards.

The following day, 21 March 2021 the secondary case went for an offsite MIW via bus from the facility. This was a breach in procedure and occurred due to the blue wrist band, which identified returnees eligible to leave their room for smoking and/or exercise, not being removed in error.

Later that afternoon ARPHS informed the onsite nurses at the Grand Mercure, that the secondary cases had tested positive for COVID-19. Following this, the secondary case returned to the Grand Mercure from their offsite MIW on the bus with 14 other returnees.

ANALYSIS: BREACH IN PROTOCOL

Normal protocol is that returnees should be isolated to their room when awaiting Day 0/1 test results, or when symptomatic. When a returnee is not isolating, they are issued a blue wrist

band which allows staff to easily identify those returnees who are permitted to leave their room to exercise or access the smoking areas. A breach in normal procedure resulted in the secondary case's blue wrist band not being removed in error, and this returnee attended a MIW whilst presenting minor symptoms, later to return a positive COVID-19 test.

At the time of the Grand Mercure incident it is important to note that there were inconsistent written procedures around the use of blue wrist bands. While the 'Blue Band Implementation' document (16 January 2021) does provide initial guidance, the 'Operations Framework' and the 'Stay in a MIF SOP' do not provide comment. The Framework and SOP do however note that an isolated returnee is still to be given access to exercise and smoking areas. It is considered that this inconsistency was a contributory factor to the breach in protocol. These frameworks and SOPs will be reviewed in light of what the system has learnt from this situation,

In addition, there were breaches in bus protocols and identified non-compliance with the Standard Operating Procedures (SOPs) for the MIW programme. These breaches included, inappropriate physical distancing on the bus, there were seat changes during the journey and incorrect and inconsistent use of masks. This resulted in the decision for those 14 returnees categorised as 'close contacts' of the secondary care to stay an additional 14-day period in managed isolation from their exposure date, and undergo daily symptoms checks and additional testing. For the health and wellbeing of these individuals, they were given the option to move facility or room within the facility.

Of note, there was no onward transmission associated with this bubble breach.

RESPONSES, ACTIONS AND LESSONS OBSERVED

INITIAL RESPONSE

Following the bubble breach incident at the Grand Mercure, a number of improvements were immediately implemented to reduce the risk of further transmission in the MIF and the risk of onward transmission to the community. These are included in the action plan at **appendix 1.** MIQ also placed a 24-hour suspension of the MIW programme to allow some immediate changes to be put in place to ensure the safety of returnees and staff and ensure correct procedures were being followed.

Recommendations for the MIW programme included:

- Standardising the buses used for MIQs, so they all have the same size (49-seater) and configuration
- Ensuring that bus drivers have been fit-tested for N95/P2 particulate respirators, which will be worn at all times while transporting returnees
- Standardising bus briefings for the beginning of each trip to emphasis adherence to seat allocation
- Ensuring all buses have actual seat allocation in place and a photo is taken before the bus departs which shows who was sitting where

- Implementing additional measures to ensure 2 metre physical distancing between bubbles is maintained
- Using only buses with two doors to ensure the driver and passengers can use separate doors.

ANALYSIS: INFECTION, PREVENTION AND CONTROL (IPC)
The Ministry of Health completed an IPC Surveillance Audit of the Grand Mercure on 16 March 2021, which included an examination of the MIW and the associated IPC practice.

In summary, it was noted that the facility has limited outdoor space for returnees and as such, supervised MIW can be booked in advance so that transport can be organised for transporting returnees offsite. s 9(2)(b)(ii) transport the returnees and two supervising security staff to an offsite outside exercise area. When the coach services arrive at the Grand Mercure, whilst the footpath is cordoned off and there is police presence, it was observed that these measures seemed to have little effect on deterring pedestrians on the street and as such, this was identified as a public health and safety risk. In addition, a high-risk finding was identified when a returnee was witnessed by the audit team to be in a shared space without a mask on, and a moderate risk was also identified in relation to the MIW programme with PPE not being worn by the driver, the cleaning process of s 9(2)(b)(ii) and distancing of arrivals at processing desks.

As a result of these findings, recommendations for improving IPC practice were issued immediately by the Ministry auditors to the MIF management and were required to be completed either immediately or within 7 days of issue (timeframes depend on whether the risk is classified as high, moderate or low). The particular recommendations of this audit included aspects such as, ensuring arrival processing tables are adequately spaced, ensuring all returnees wear masks outside of their rooms, ensuring bus drivers adhere to wearing the required PPE (personal protective equipment) and that the coaches are cleaned in alignment with the IPC SOP.

To note, during this time the transport SOP that was being followed by the bus drivers did not require additional PPE to be worn. The IPC SOP contradicted this and required more extensive PPE. There was a period of continued debate (during the time of the Grand Mercure incident) and this has now been resolved and parties have reached a balance between health and safety for drivers, and IPC guidelines.

As part of the MOH's regular audit programme, the Grand Mercure facility will be regularly visited to ensure that staff and returnees are adhering to Ministry IPC guidance.

ANALYSIS: MINISTRY OF BUSNESS, INNOVATION AND EMPLOYMENT
Rapid Review: Grand Mercure Incident Involving Positive Case/Managed Isolation Walk
Following the bubble breach incident, MBIE undertook a rapid review of the processes on 30 March 2021 that led to the secondary case being permitted to attend an off-site MIW, despite reporting symptoms. This involved input from the Auckland Regional Isolation and Quarantine Coordination Centre (ARIQCC) Medical Advisor and the Managed Isolation Facility Manager Officer in Charge (OIC).

There were six identified key findings as a result of MBIE's rapid review of the MIW programme.

These findings included:

- The MIW on 19 March 2021 did not go against any standard policies or procedures, as the returnee was asymptomatic and had returned negative tests up to that point
- The positive (secondary) case should not have participated in the MIW on 21 March 2021. If correct management for symptomatic returnees had been adhered to, they would have been isolated in their room
- These policies are clearly outlined in the MIQ Operating Framework (although the generally accepted protocol for removing the blue wrist band is not outlined in the framework)
- In addition, the requirement for these particular returnees to isolate was not communicated to the wider MIF team
- The time between the positive result being received and the bus returning from the second MIW was insufficient to stop the returnee from returning on the bus with other returnees
- Adherence to the policies and procedures on the bus to the MIW were either not followed or in need of updating. In addition, limiting the number of close contacts may have occurred if these policies were followed.

As part of the process of continuous improvement, MBIE outlined nine recommendations to ensure the observations are learnt from. Five of these related to managing symptomatic returnees, and four for improving the protocols for returnees travelling on a bus to and from a MIW. These are included in the action plan at **appendix 1.**

Recommendations for managing symptomatic returnees include:

1. Review and update the Operating Framework and relevant standard operating procedures for staff on managing symptomatic returnees around the issuing and removal of blue bands
2. Ensure all staff are orientated to the Operational Framework and SOPs, are clear on roles and responsibilities, and understand the escalation pathways
3. Discuss with the Border Clinical Management System (BCMS) developers around the possibility of creating notifications for staff about those who are symptomatic to ensure they are placed into isolation
4. Implement a communications application for all site staff to ensure better dissemination of information among MIF staff
5. Undertake a wider investigation, with other relevant agencies, to determine whether at the time of this situation, there was any correlation between staff pressure/workload and this situation

Recommendations for improving the protocols for returnees travelling on a bus to a MIW include:

6. Update the Auckland MIF Managers Quick Guide around transport to MIW to reference the most recent changes in the process for managing MIW to include bus passenger manifesting, bus briefs emphasising adherence to seat allocation and use of photographs to record seating positions
7. Undertake a review of all MIQ transportation procedures, including vehicle manifests, seat allocation, physical distancing and record keeping
8. ARIQCC Quality Assurance to review the process for loading and unloading buses for MIQ to ensure compliance with current physical distancing and IPC protocols
9. Complete a review of procedures for managing a positive COVID-19 test result while the returnee is on a MIW and subsequent transport requirements (noting this is a novel situation).

ANALYSIS: MINISTRY OF HEALTH

Review of Offsite Managed Isolation Walks (MIW) Programme

In addition, as a result of the bubble breach incident, the Ministry of Health also completed a review of the offsite MIW programme through a 'health-centric' lens and IPC perspective.

This review was completed on the 14 April 2021 and identified the following recommendations to further strengthen the MIW system. In conclusion, this review determined that the MIW programme can be completed safely, especially with the implementation of the recommendations. These are also included in the action plan at **appendix 1.**

The Ministry of Health recommended to:

- Create a national-level SOP for the MIW to provide consistent guidance, particularly for areas where there is a clear divergence in operational practice between the four MIF's identified with offsite exercise locations
- Review when and how information is provided to returnees, to ensure that key messages about personal protective equipment (PPE) and infection prevention control (IPC) protocols are reinforced at multiple points throughout their MIQ journey
- Once finalised, address the findings identified in MBIE's MIQ audits of the MIW process to ensure compliance with the relevant frameworks, SOPs and briefs
- Conduct regular IPC audits of MIWs, noting these will be undertaken at the same time as the existing, regular IPC audits of the MIFs
- Update MIW collateral including splitting information into three briefings to be given at different stages of the process, and the staff guidance
- Improve the process for bus transport to and from the offsite MIW location, including clearly outlined and distanced waiting areas, seat numbering, record keeping of seat allocation and alignment of cleaning and disinfection practices to those stated in the IPC SOPs and Operations Framework.

RECOMMENDATIONS

Considering the findings from the Grand Mercure Review, May 2021, we have outlined **recommendations** as part of a wider action plan to build on existing efforts and improve the system approach to the managed isolation and quarantine function. These are inclusive of all recommendations outlined in the various rapid reviews, in addition to a few noted in this final review. Effective action against these recommendations will ensure that the incidents which occurred at this facility do not happen again. Work has already begun against each of these five recommendation areas, and in many cases have been completed.

1. Assess and address the risk in in-MIF transmission via the ventilation system at the Grand Mercure MIF
2. Mitigate the risk of onwards transmission of infection from close contacts of positive COVID-19 cases
3. Improve processes for managing symptomatic returnees in a MIF
4. Improve the MIW programme including the procedures, process and implementation
5. Improve the protocols of specifically the bus transport, to and from, the MIW locations.

These five recommendations are outlined in an action plan attached at **appendix 1**. The recommendations note who is responsible and what action is needed within what timeframe.

CONCLUSIONS

In summary, the overall findings of the final review of the two incidents at the Grand Mercure Auckland MIF in March 2021 show that there are further improvements, many which have already been implemented, to improve the MIQF system. These changes will likely reduce the chance of cases occurring via the ventilation system and ensure that the necessary procedures are followed for managed isolation walks.

Included is an action plan outlining the five recommendations and associated actions highlighted by this review process. Progress against the identified recommendations will be monitored by both Ministries in their role with the MIQ system and wider health system response.

It is important to note that whilst this review has focused on outlining necessary improvements as a result of the incident of in-MIF transmission and subsequent bubble breach that occurred at the Grand Mercure, it is in fact the success of the wider MIQF system that has been integral to the nation's success in keeping COVID-19 largely out of our communities.

APPENDIX 1A: ACTION PLAN

No.	Recommendation	No.	Action	Responsible	Timeframe
1	**Assess and address the risk in in-MIF transmission via the ventilation system at the Grand Mercure Auckland MIF**	A.	Expedite the preliminary on-site ventilation assessment of the Grand Mercure and recommend that given the concerns identified around the potential transmission between s 9(2)(a) and therefore between s 9(2)(a) n each floor, any new returnees are not to be accommodated in the any of these rooms	MOH and ventilation experts	**Complete**
		B.	Complete a full on-site ventilation assessment	MBIE (commissioned)	**Complete** 19 April 2021
		C.	Implement the recommendations outlined in the final Grand Mercure ventilation assessment	MBIE	**Underway** Expected completion 31 May 2021
2	**Mitigate the risk of onwards transmission of infection from close contacts of positive COVID-19 cases**	A.	Extend the stay by an extra 14 days in managed isolation, and require additional testing, for the returnees identified as close contacts of the index or secondary case including post-MIF day 5 test, as risk control measures	MOH	**Complete**
		B.	Increase the frequency of regular surveillance testing of staff at the Grand Mercure in Auckland from fortnightly to weekly as an incident control measure	MOH	**Complete**
3	**Improve processes for managing symptomatic returnees in a MIF**	A.	Review and update the Operating Framework and relevant standard operating procedures for staff on managing symptomatic returnees around the issuing and removal of blue wrist bands	MIQ Operational Policy Team/ MOH	**Underway** Expected completion following next SOP release
		B.	Ensure all staff are orientated to the Operational Framework and SOPs, are clear on roles and responsibilities, and understand the escalation pathways	MBIE	**Underway** Expected completion date 30 June 2021
		C.	Discuss with the Border Clinical Management System (BCMS) developers around the possibility of creating notifications for staff about those who are symptomatic to ensure they are placed into isolation	ARIQCC	**Complete**

		D.	Implement a communications application for all site staff to ensure better dissemination of information among MIF staff	MIQ Operations	**Underway** Expected completion date 30 August
		E.	Undertake a wider investigation, with other relevant agencies, to determine whether at the time of this situation there was any correlation between staff pressure/workload and this situation	MBIE	**Underway** Due 30 August 2021
4	**Improve the Managed Isolation Walk (MIW) programme including the procedures, process and implementation**	F.	Create a national-level Standard Operating Procedure (SOP) for the MIW that outlines the end-to-end process that meets IPC and Public Health requirements, to provide consistent guidance, and in particular for areas where there is a clear divergence in operational practice between the four MIF's identified with offsite exercise locations. In additional ensure the SOP includes guidance on the use of blue wrist bands	MBIE Operational policy team with input from MOH IPC and Public Health	**Underway** included in the SOPs updates May 2021
		G.	Review when and how, information is provided to returnees, to ensure that key messages about personal protective equipment (PPE) and infection prevention control (IPC) protocols are reinforced to returnees at multiple points throughout their MIQ journey	MBIE Communications / ARIQCC	**Underway** Expected completion 30 July 2021
		H	Address the findings from MBIE's audits of the MIW, alongside recommendations for improvement noted during the observations, such as clearer numbering of bus seats and improved record keeping of seat allocation	MIQ Operational Policy Team / ARIQCC	**Underway** Expected completion 30 June 2021
		I.	Conduct regular IPC audits of MIWs, noting these will be undertaken at the same time as the existing, regular IPC audits of the MIFs	MOH IPC Audit Team	**Underway** Ongoing regular review cycle
		J.	Complete a review of procedures for managing a positive COVID-19 test result while the returnee is on a MIW and subsequent transport requirements (noting this is a novel situation)	MIQ Operations / MOH	**Underway** Expected completion 30 July 2021
		K.	Update MIW collateral including splitting information into three briefings to be given at different stages of the process, and updating the staff guidance	MBIE Communications	**Underway** Expected completion May 2021

		L.	Consider the ongoing sustainability of the MIW programme, including considerations for winter such as shorter walks and shelter, as well as consider whether to decommission hotels that require a MIW programme	MIQ Operations	**Underway** Expected completion May 2021
5	**Improve the protocols of specifically the bus transport, to and from, the MIW locations**	A.	Standardise the buses used for MIQs, so they all have the same size (49- seater) and configuration	MIQ Operations	**Complete**
		B.	Ensure that bus drivers have been fit-tested for N95/P2 particulate respirators, which will be worn at all time while transporting returnees	MIQ Operations	**Complete**
		C.	Ensure buses are fitted with a protective screen between the driver/staff area and returnees will be utilised to transport returnees to MIWs	MIQ Operations	**Complete**
		D.	Alignment of cleaning and disinfection practices to those stated in the IPC SOPs and Operations Framework (i.e. discontinue the use of fogging)	MIQ Operations	**Complete**
		E.	Standardise bus briefings for the beginning of each trip to emphasis adherence to seat allocation	MIQ Operations	**Complete**
		F.	Ensure all buses have seat allocation in place and a photo is taken before the bus departs which shows who was sitting where	MIQ Operations	**Complete**
		G.	Implement additional measures to ensure 2 metre physical distancing between bubbles in maintained	MIQ Operations	**Complete**
		H.	Use only buses with two doors to ensure the driver and passengers can use separate doors	MIQ Operations	**Complete**
		I.	Update the Auckland MIF Managers Quick Guide around transport to MIW, to reference the most recent changes in the process for managing MIW to include bus passenger manifesting, bus briefs emphasising adherence to seat allocation and use of photographs to record seating positions	ARIQCC Operations	**Complete**
		J.	Undertake a review of all MIQ transportation procedures, including vehicle manifests, seat allocation, physical distancing and record keeping	MIQ Operational Policy team	**Underway** Expected completion 30 July 2021

		K.	ARIQCC Quality Assurance to review the process for loading and unloading buses for MIW to ensure compliance with current physical distancing and IPC protocols	ARIQCC	**Underway Expected completion 30 July 2021**
		L.	Investigate the option of installing HEPA filters in all buses and coaches, that transport returnees to and from MIW and across the wider MIQ system	MIQ TAG	**To be undertaken** This recommendation is being considered by TAG

APPENDIX 2: ACRONYMS

MIF	Managed Isolation Facility
ARPHS	Auckland Regional Public Health Service
MBIE	Ministry of Business, Innovation and Employment
MOH	Ministry of Health
MIQ	Managed Isolation and Quarantine
MIQF	Managed Isolation and Quarantine Facilities
TAG	Technical Advisory Group
MIQ TAG	Managed Isolation and Quarantine Technical Advisory Group
MIW	Managed Isolation Walk
ARIQCC	Auckland Regional Isolation and Quarantine Coordination Centre
OIC	Medical Advisor and the Managed Isolation Facility Manager Officer in Charge
N95/P2	Two types of half-face particulate respirators that are devices which provide respiratory protection
CCTV	Closed-circuit television
PHU	Public Health Unit
PPE	Personal Protective Equipment
SOP	Standard Operating Procedure

APPENDIX 3: JOINT REVIEW TERMS OF REFERENCE