

Briefing

Update on providing returnees in MIQ with better fitting masks and evaluating returnee non-adherence to IPC measures

Date due to MO:	2 August 2021	Action required by:	N/A
Security level:	IN CONFIDENCE	Health Report number:	20211719
To:	Hon Chris Hipkins, Minister for COVID-19 Response		
Copy to:	Hon Dr Ayesha Verrall, Associate Minister for Health		

Contact for telephone discussion

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Minister's office to complete:

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|---|------------------------------------|--|
| <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 Withdrawn | |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:

Update on providing returnees in MIQ with better fitting masks and evaluating returnee non-adherence to IPC measures

Security level: IN CONFIDENCE **Date:** 2 August 2021

To: Hon Chris Hipkins, Minister for COVID-19 Response

Purpose of report

1. On 1 July 2021 you agreed to the recommendations in HR20211355 to further explore options for providing managed isolation and quarantine (MIQ) returnees with better fitting masks, in order to increase their level of respiratory protection.
2. This briefing provides you with an update on options for providing returnees with better fitting masks, as well as our plan to evaluate the behavioural factors driving returnee non-adherence to infection prevention and control (IPC) measures within MIQ. This report discloses all relevant information.

Summary

3. There are limited options available to us to provide returnees with better fitting masks. In addition to the ASTM Level 3 head loop, Level 2/Type IIR ear loop medical masks can be modified to provide a better fit. A summary of options for providing returnees with better fitting masks is provided in paragraphs 14 - 15.
4. Assessing the operational feasibility of the options available for providing returnees with better fitting masks (e.g. user-acceptability and ability for MIQF staff to monitor compliance) is critical prior to implementing any system-wide changes.
5. We are finalising our plan to work with our regional IPC leads to conduct a small trial of the options listed in paragraphs 14 - 15. The trial will assess the acceptability and ease of use of the options among returnees, the effectiveness of the options in providing a better fit to returnees' faces, the effectiveness of returnee-facing collateral explaining how to use the different options, and identify any unintended consequences (e.g. increased workload for the workforce to explain how to use the different options).
6. Additionally, we are commissioning a study investigating the behavioural factors that drive returnee non-adherence to IPC measures. The study will support targeted continuous quality improvement activities aimed at reducing the risk of in-MIQF transmission, as well as promote effective adherence and compliance to the IPC measures and practices we have in place in MIQFs.
7. We will update you on the progress of these two workstreams in our regular weekly reporting, and provide a further briefing on the outcome of both workstreams at their conclusion in late September 2021.

Recommendations

We recommend you:

- a) **Note** that work is underway to finalise a plan for trialling a range of options to provide returnees with better fitting masks and therefore enhanced respiratory protection, and that we will update you on our progress of this project in our weekly reporting. Yes/ No
- b) **Note** we are commissioning a behavioural insights study to understand the factors driving returnee non-adherence to IPC measures in MIQ, to support targeted continuous quality improvement activities aimed at reducing the risk of in-MIQF transmission, and promote effective adherence and compliance to the IPC measures. Yes/ No
- c) **Agree** that we will inform you of the outcome of both workstreams of activity described in recommendations a) and b), including any proposed system enhancements that result from this work, in late September 2021. Yes/ No



Rachael Hopkins
Manager, Managed Isolation and
Quarantine

COVID-19 Health System Response

Date: 30/07/2021



Hon Chris Hipkins

Minister for COVID-19 Response

Date: 3/8/2021

Update on providing returnees in MIQ with better fitting masks and evaluating returnee non-adherence to IPC measures

Background

8. On 28 June 2021 we provided you with HR20211355, which provided options for providing managed isolation and quarantine (MIQ) workers and returnees with a greater level of respiratory protection. This advice was provided in the context of our increasing understanding of the risk of aerosol-mediated transmission of SARS-CoV-2.
9. Returnees are currently required to wear a 3 ply ASTM Level 2/Type IIR ear loop medical mask whenever they are outside their rooms in MIQFs, including when they open their door (e.g. for a health check or to retrieve their meals). These Level 2 ear loop medical masks have an estimated 38.5% 'fitted filtration efficiency' (%FFE)¹ (e.g. compared to around 98% FFE for a fit tested P2/N95 particulate respirator).
10. Whilst the filtration efficacy of the materials used for ear loop level 2 medical masks is high, the *fit* of these masks to the wearer's face can be loose, depending on that individual's facial characteristics and profile.
11. Current evidence suggests that the *fit* of a mask is an important factor with respect to the level of respiratory protection they provide to the wearer against aerosols. This means that a poorly fitted mask (e.g. with 'gaping' at the sides) provides less respiratory protection to the wearer than a mask that is well-fitted to an individual's face.
12. Given the diversity in facial characteristics across the returnees entering the MIQ system, there is likely to be variation in the quality of fit of masks, and therefore protection provided by these masks, to returnees.
13. As a result, providing returnees with better fitting masks or the ability to support a better fit with accessories, across their journey – including in the airports, en-route to MIQFs, and whenever they are outside their room – would reduce the risk of in-MIQF transmission to other returnees and to staff by:
 - a. Improving source control (i.e. reduce the risk of the wearer exhaling infectious droplets into the environment, thereby reducing the risk to MIQF staff and to other returnees); and
 - b. Improving respiratory protection for the wearer against aerosols.

¹ FFE combines the intrinsic filtering efficiency of the mask material, as well as the efficacy of fit to the face, to give an indication of the level of respiratory protection provided to the wearer (i.e. higher %FFE indicates a greater level of protection).

There are few masks available for returnees that provide a substantially better fit than the current ear loop level 2 medical masks, without some modification

14. There are limited options available to us to provide returnees with better fitting masks. The Ministry has undertaken a stocktake of the medical masks available to returnees, as well as options for modifying medical masks to provide a better fit. As indicated in HR20211355, we identified the ASTM Level 3 head loop mask as a suitable potential option for returnees, as there is some evidence to suggest it can provide up to 71.5% FFE².
15. Additionally, Level 2/Type IIR ear loop medical masks can be modified to provide a better fit. These modifications include:
 - a. Double masking – wearing a medical mask underneath a tighter fitting cloth mask;
 - b. The use of clips, fasteners, and/or toggles – which attach to the ear loops and tighten the mask behind the ears or head.
16. Note that from an ongoing supply perspective, we are not in a position to provide returnees with P2/N95 particulate respirators from the Ministry's current supply. As noted in HR20211355, the global supply of P2/N95 particulate respirators remains constrained and our supplies must be prioritised for the health and other border workforces.
17. As noted in HR20211355, a prototype FFP2 particulate respirator may become available in the coming months, and if it passes accreditation and the Ministry's evaluation processes, it may be a suitable option for returnees. In particular, this prototype would provide a high level of respiratory protection without impacting supply for the health or other workforces. We will provide further advice on its suitability for returnees if and when further information is available.
18. P2/N95 particulate respirators also vary in design across different models and would not guarantee a suitable fit. Some particulate respirators have high fit test success rates (greater than 80%) while others have low success rates (less 40%). Selecting the right particulate respirator for an individual to use is typically conducted via fit testing under the Australian / New Zealand Standard 1715:2009, however, this would not be practicable for returnees spending 14 days in MIQF.

We are planning a user-acceptability trial of a range of options to provide returnees with better fitting masks, in select MIQFs

19. Prior to implementing any system-wide changes, the operational feasibility of the options available for providing returnees with better fitting masks – including user-acceptability, ease of use, and ability for MIQF staff to monitor compliance – requires further investigation.

² Note: this is the %FFE of a level 3 mask with ties behind the head as data was not available about the %FFE of the level 3 head loop masks. However, as the mask's specifications themselves are identical, the %FFE are likely to be comparable.

20. We are in the process of finalising a plan with key IPC stakeholders to trial a range of the options listed above in paragraphs 14 - 15 in a small number of MIQFs. The primary purpose of the trial is to assess:
 - a. The acceptability, including ease of use, of the options among returnees;
 - b. The effectiveness of the options in providing a better fit to returnees' faces (i.e. through returnee and MIQF worker observations and reflections);
 - c. The effectiveness of returnee-facing collateral explaining how to use the different options;
 - d. Any unintended consequences (e.g. increased workload for the workforce to explain how to use the different options, or sufficient evidence of returnees incorrectly using the masks).

Understanding returnee behavioural factors that influence adherence to IPC measures is critical to our continuous quality improvement approach in MIQFs

21. In HR20211355, we indicated that in addition to providing returnees with better fitting masks, reducing the risk of in-MIQF transmission also requires a greater understanding of the behavioural factors influencing returnee adherence to basic IPC measures.
22. The Ministry is commissioning a study, in collaboration with Auckland Regional Public Health Service (ARPHS) and the Ministry of Business, Innovation and Employment (MBIE), to assess the behaviours driving returnee non-adherence to IPC measures in MIQFs. The study design has been developed with input from regional IPC and public health specialists who are involved in the MIQ system.
23. The purpose of the study is to support targeted continuous quality improvement activities aimed at reducing the risk of in-MIQF transmission, and promote effective adherence and compliance to the IPC measures and practices we have in place in MIQFs.
24. The rapid action research and evaluation methods that will be utilised in this work can identify operational, socio-cultural, knowledge, attitudes, practices, and environmental circumstances that shape and influence non-compliant behaviour. The study will aim to:
 - a. review existing data, incident reports, and health promotional materials used within MIQFs;
 - b. identify how returnees rationalise their own IPC behaviour and the behaviour of others through a knowledge, attitudes, and practices (KAP) survey;
 - c. highlight challenging areas of returnee IPC adherence;
 - d. describe the context of the MIQF operational environment that may explain inconsistencies in IPC practices among returnees; and
 - e. provide feedback to the key MIQF stakeholders in order to develop joint solutions to improve returnee IPC practices and adherence.
25. The following key questions will be answered as part of this returnee behavioural insights study:

- a. What are the operational, material/physical, social, and cultural factors that affect returnees' IPC behaviour?
 - b. Are there any demographic differences in behaviour?
 - c. Has the risk perception changed among returnees who have been vaccinated?
 - d. Is it possible to understand attribution of responsibilities?
 - e. Is there a prioritisation and risk appraisal, demonstrating a divergence in values, cultural norms, or physical ability attached to certain IPC policies and practices?
 - f. Are the IPC policies and practices culturally acceptable for Tangata Whenua?
 - g. Is it possible to assess the hierarchy of influence (policy, community responsibility, individual preferences, lack of understanding and knowledge of risk, and operational challenges)?
 - h. What are the recommendations for improving returnee IPC adherence, and does this differ from a compliance model for enforcement?
26. The study will utilise rapid assessment procedural methodology, which is a pragmatic option for producing timely, contextually rich, evaluative information about complex interventions that are implemented into dynamic clinical settings.
27. A random sampling of different MIQFs in Auckland, Christchurch and Wellington will inform the study, in addition to key informant interviews. Secondary analyses of other research studies, existing reports, guidance (standard operating procedures and operational guidance), IPC supplies, and health promotional materials that are provided to returnees will also be included.

Equity

Equity considerations regarding providing returnees with better fitting masks in MIQFs

28. Providing returnees with the appropriate level of respiratory protection while they are in MIQFs is part of our duty of care to returnees.
29. Given the fit of masks to the wearers' face is a key determinant of the level of respiratory protection provided to the wearer, returnees of different ethnicities may not be as well protected by the current ear loop Level 2 medical masks as others.
30. The plan outlined in paragraphs 19 - 20 will enable us to identify whether there are any effective options for supporting returnees to customise and maximise the fit of masks, thereby providing them with a higher level of respiratory protection against aerosols.
31. Whilst the approach is underpinned by evidence regarding the efficacy of various modifications in improving the fit of masks, the project is 'people-centred', in that it will prioritise and centralise user experiences when evaluating the value of the options.

Equity considerations regarding evaluating the behavioural factors driving returnee non-adherence to IPC measures in MIQFs

32. Poor returnee adherence to IPC measures puts border and MIQF workers at an increased risk, and there are equity implications for the risk of transmission to this workforce, who are predominately Asian, Māori, and Pacific Peoples.

33. Returnees' adherence to IPC measures in MIQFs is critical to ensuring their safety, and the safety of others within the facility. Many returnees enter MIQFs with limited English literacy and/or health literacy – as a result, there are differences in the level of understanding among returnees entering MIQFs of the risks of in-MIQF transmission, and the mitigations that are implemented to prevent transmission within these facilities.
34. Accordingly, understanding how returnees' adherence to IPC measures can be supported and increased – particularly among returnees across a range of cultural, language and socio-economic backgrounds – is key to ensuring equity of safety among returnees within MIQFs.

Next steps

35. We are engaging with our IPC stakeholders to finalise the plan for the trial of returnee mask options in select facilities, including confirming the short-list of mask modification options that will be trialled, and which facilities they will be trialled in. We will update you on our progress of this project in our weekly reporting.
36. At the close of the returnee behavioural insights study (late September 2021), we will provide you with a further briefing detailing:
 - a. The final outcome of the returnee mask trial and the final recommendations for any proposed system-wide changes after the trial is complete; and
 - b. The results of the returnee behavioural insights study, including any proposed actions to improve returnee adherence to IPC measures.

ENDS.