Strategic COVID-19 Public Health Advisory Group

6 May, 2021

Hon Dr Ayesha Verrall
Associate Minister of Health (Public Health)
Parliament Buildings
Wellington

Dear Minister

Further Advice on Risk Mitigation Measures for Very High Risk Countries

1. Thank you for inviting the Strategic COVID-19 Public Health Advisory Group to provide advice on this Briefing Paper, dated 22 April 2021.

2. Because the New Zealand population is currently free from COVID-19, while most people are not yet vaccinated, it is critically important to prevent incursions of the SARS-CoV-2 virus from border facilities. New Zealand has some of the most rigorous processes for managed isolation and quarantine (MIQ) in the world, and the recent vaccination of staff in border facilities will have further reduced the risk of incursions. There is still scope for improving some procedures (e.g. by more frequent saliva testing of border workers), and the risk of transmission between occupants of MIQ hotels remains. One strategy for reducing the risk of incursions is to limit the number of infected travellers arriving at our borders. This may become even more desirable as the commencement of quarantine-free travel, from countries such as Australia, increases the availability of MIQ places for travellers from high risk countries. Hence the Advisory Group supports the intention underlying the recent decision by the Government.

3. We recognise that limiting entry to New Zealand from particular countries raises legal, diplomatic, and political issues that lie outside our expertise and terms of reference. Our comments are limited to scientific considerations and potential impacts on public health.

Deciding which countries to include in the framework

4. The risk posed by travellers from a particular country depends on the prevalence of SARS-CoV-2 infection among travellers from that country, and on the number of people entering New Zealand from the country.

5. The first of these two variables might not be the same as the prevalence of infection in the country as a whole, because people engaging in international travel might well have a higher or lower prevalence than the general population. But even getting reliable estimates of the occurrence of infection in the general population of different countries is fraught with problems, because such estimates will depend on the level of testing and the adequacy of health information and reporting systems.

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6. For these reasons, we support the general approach of basing decisions on the occurrence of infection with SARS-CoV-2 among people arriving at our borders. The Briefing Paper proposes criteria based on the prevalence of infection among travellers to New Zealand and the total number of people arriving from each country. If both of these factors are high for a particular country, it is true that limiting the number of people admitted should reduce the number of infected people in our MIQ facilities. It is not clear, however, why emphasis is placed on the prevalence ("rates") of infection among travellers, rather than on the absolute numbers of infected people arriving.

7. On the face of it, the most effective way of reducing the number of infected people entering our MIQ facilities would be to limit travel from the countries that are the source of most cases. Approximately half of all the infected people entering New Zealand since the beginning of 2021 came from one country – India (158 cases). The other two countries that were the source of large numbers of infected travellers were the USA (34 cases) and the United Kingdom (33 cases).

8. It is instructive to examine the trends in numbers of infected people arriving. From data we have obtained from the Ministry of Health, it is clear that the numbers of infected people arriving from the USA and United Kingdom were declining over the period. Thus the numbers in the first four months (up to 22 April) were 18, 8, 6, and 2 from the USA, and 23, 3, 6, and zero from the United Kingdom. In contrast, the number of infected people arriving from India was escalating rapidly: 17, 15, 70, and 56. (The temporary suspension of travel from India was imposed on 11 April.) These trends mirror the trends in reported case numbers from the respective countries.

9. Using absolute numbers as the criterion, the Advisory Group concludes that it is fully justified at this time to limit travel temporarily from one country: India.

Criteria used in the Briefing Paper

10. The Briefing Paper uses prevalence estimates ("rates") as one of the criteria for adopting recommendations. Apart from the point that this approach is less relevant than considering the absolute numbers arriving, there is a serious methodological problem. This is that, for most countries (except India), the numbers are so small that it is not possible to compute rates that are sufficiently reliable to justify categorisation of the risks posed. Even the arrival of one large family who are infected, could shift the prevalence estimate materially. It appears that statistical considerations about uncertainty have been overlooked.

11. Attachment A (table 1) presents an analysis of data in three steps, before classifying many countries as posing a "High Risk" to New Zealand. Yet not one infected person arrived from some of these countries (e.g. China or Taiwan) in the period covered – which was between 1 January and 18 April 2021. Clearly the assumption that travellers from such countries pose a high risk must have been based on different considerations, which are not apparent.

12. The key table in the Briefing Paper is in Attachment B, because this led to the designation of travellers from four countries (India, Brazil, Pakistan, and Papua New Guinea) as "Very High Risk". The criteria for such designation were that the country should have both (a) an average of more than 15 travellers coming to New Zealand each month, and (b) a prevalence of infection greater than 50 cases per 1,000 arrivals in 2021.

13. A problem with this table is that it does not show the numbers of cases from which the prevalence of infection was estimated. We obtained these numbers from the Ministry of Health; the latest data were from 1 January to 22 April 2021. The total numbers of infected people who arrived in New Zealand during these (nearly) four months were 158 from India, 5 from Brazil, 10 from Pakistan, and 6 from Papua New Guinea.

14. Two issues arise from the very small numbers arriving from three of these countries. First, the estimates of the prevalence of infection are highly unstable. Using the latest data, we have recalculated the rates and estimated 95% confidence intervals. The estimates (cases per 1,000) are: India – 89 (76 - 104), Brazil – 58 (19 - 136), Pakistan – 52 (25 - 96), Papua New Guinea – 58 (21 - 127). It will be seen that the confidence intervals are very wide, especially for the latter three countries. For travellers from Brazil, Pakistan, and Papua New Guinea, one cannot be confident that the true prevalence would not be lower than 50 per 1,000 arrivals.

15. The second consequence of the small numbers is that excluding some travellers from Brazil, Pakistan, and Papua New Guinea will have only a very minor effect on the burden of infection in our MIQ facilities. New Zealand citizens, their partners and children, and the parents of children who are citizens, will still be permitted to travel to New Zealand. Let us assume that the number of travellers arriving from these three countries is reduced by 50%. That would have reduced the total number of infected people coming from these three countries by about 10 (21/2) over a period of 112 days. Whereas limiting travellers from India will have a much greater effect, restricting travel from Brazil, Pakistan, and Papua New Guinea will be unlikely to prevent more than one case arriving from these three countries (combined) every 11 days.

Conclusion about selection of countries

16. Whether decisions are based on absolute numbers arriving or on the criteria used in the Briefing Paper, the Advisory Group concludes that a temporary restriction on travel from India is justified. On the other hand, we do not see grounds for continuing the restriction on travellers from Brazil, Pakistan, or Papua New Guinea.

Taking countries off the framework

17. The Briefing Paper does not propose any criteria that could be used to remove restrictions on travellers from a particular country.

18. Once a country has been designated as "Very High Risk", the number of travellers arriving from that country will be reduced substantially. Subsequently, using the current approach, this reduction will make it difficult to determine when the risk posed by travellers from that country has declined to an acceptable level.

19. In the case of India, where there must be many people who are New Zealand residents rather than citizens, Minister Hipkins' media release (on 23 April) stated that the new measures are "expected to reduce the number of potential positive cases coming [from India] to New Zealand by an estimated 75%". Even with only 25% of the former number of travellers arriving from India, it might still be possible to assess the ongoing risk using the general approach that has been adopted. In the short term, however, the cancellation of flight corridors will presumably limit the number of arrivals markedly.

20. For Brazil and Papua New Guinea, the actual numbers arriving may now fall below one of the thresholds that was set for their designation as "Very High Risk" (i.e. more than 15 arrivals per month). Moreover, the estimates of the infection rates from these two countries, as well as from Pakistan, will become even more unstable, with wider confidence intervals.

21. In all the countries designated as "Very High Risk", vaccination coverage is unlikely to be sufficient in the near future to warrant redesignation. Decisions could be based on population trends in the recorded incidence of COVID-19, but (as already mentioned) such data are generally unreliable.

22. Clearly it will be important for the Government to set criteria for removing countries from the framework, so that people waiting to return to New Zealand have some idea of what to expect.

Future assessment of individual risk

23. Over the coming months, the Advisory Group expects to be asked to assess the emerging evidence about key properties of each type of vaccine in common use – such as the duration of immunity conferred, effectiveness against variants of the virus that may be prevalent, and prevention of transmission of the virus to other people. There is already enough evidence to conclude that a person who has been fully vaccinated against COVID-19, with any of the current internationally recognised vaccines, is much less likely to introduce the virus to New Zealand than a person from the same country who has not been vaccinated.

24. The Group believes that consideration could now be given to using vaccination status as a factor in deciding whether someone from a "Very High Risk" country (such as India) should be allowed to travel to New Zealand and enter our MIQ system. We do not underestimate the challenge in obtaining reliable certification of vaccination status. Even if some false certification occurs, however, such a process should still limit the number of infected people arriving. It is important to bear in mind that we are talking here about allowing people to enter the full MIQ process, not to enter the community directly.

25. Please don't hesitate to let me know if you would like clarification of any of the points raised.

Yours sincerely

David Skegg

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Chair of the Advisory Group