MINISTRY OF HEALTH
MANATŪ HAUORA

Briefing

Update: Effectiveness of Pre-Departure Testing

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To:	Hon Chris Hipkins, Minister for COVID-19 Response		
Copy to:	Hon Dr Ayesha Verrall, Associate Minister of Health		

Contact for telephone discussion

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Minister's office to complete:

☐ Approved	☐ Decline	☐ Noted
☐ Needs change	☐ Seen	☐ Overtaken by events
☐ See Minister's Notes	☐ Withdrawn	

Comment:

Update: Effectiveness of Pre-Departure Testing

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To:	Hon Chris Hipkins, Minister for COVID-19 Response		
Cc:	Hon Dr Ayesha Verrall, Associate Minister of Health		

Purpose of report

1. This report updates HR 20210610, which analysed the effectiveness of pre-departure testing in reducing the number of active COVID-19 cases arriving at New Zealand's air borders.

2. It summarises the scheduled assessments of:
   - airline and Customs processes for checking the documentation of pre-departure tests; and
   - the effectiveness of the first four months of pre-departure testing (PDT).

Summary

3. Two analyses are included in this briefing:
   - information and comment on the process for ensuring that compliant pre-departure testing documentation is provided by arrivals to New Zealand at check-in and at the air border; and
   - an analysis of how positive case rates were changed by pre-departure and day 0/1 tests.

4. The key conclusions are:
   - Ministry of Health and other Government officials are satisfied that airline and Customs processes are robust in ensuring that arrivals to New Zealand are complying with the PDT requirements in the Air Border Order.
   - Pre-departure testing was effective at reducing cases in travellers from the USA and UK. It did not prevent the March surge in cases from India.

5. We will continue to monitor and report on cases detected per passenger by flight number and departure country.

6. Officials from Customs and the Ministry of Transport have commented on a draft of this briefing.

Recommendations

We recommend you:

a) **Note** that health and other government officials consider that airline and Custom's procedures for checking pre-departure test documents are robust **Yes/No**

b) **Note** that pre-departure testing was effective at reducing cases from the UK and USA, but was not enough to prevent the March increase in cases from India **Yes/No**

c) **Note** that the Ministry of Health is working with other agencies to improve access to data on departure country and travel routes. **Yes/No**

Sue Gordon

Deputy Chief Executive

COVID-19 Health System Response

Date: 31/05/2021

Hon Chris Hipkins

Minister for COVID-19 Response

Date: 10/06/2021

I'd like further advice on the potential use of 'rapid' point of departure tests as an alternative to PCR tests, particularly where the risk of exposure to COVID-19 increases as a result of the requirement to get a PD test 72 hours before departure. How readily available are rapid tests at international airports? How could such a measure be deployed? Are other countries using this option?

Update: Effectiveness of Pre-Departure Testing

Background

7. Two steps were taken in January to strengthen the "Keep It Out" pillar of New Zealand's Elimination Strategy. Arrivals by air were required to provide evidence of a negative COVID-19 pre-departure test result from within the 72 hours before departure. They are then tested on Day 0 or 1 of their stay in a Managed Isolation and Quarantine Facility (MIQF).

8. Day 0/1 testing was required for travellers from the United Kingdom and from the USA from 1 January onwards. From 18 January, it applied to travellers arriving from all destinations except Australia, Antarctica and most Pacific Islands.

9. The pre-departure test is required by the COVID-19 Public Health Response (Air Border) Order (No 2) 2020 (the Air Border Order). From 15 January 2021, it applied to arrivals from the United Kingdom and from the USA. From 25 January, it applied to all arrivals except those from Australia, Antarctica, most Pacific Islands, and some other countries exempted because of the local challenges of obtaining a test.

10. The Director-General of Health also specified through a gazette notice the "appropriate evidence" that must be provided in relation to the COVID-19 test result, with six elements:

    - Name of person tested
    - Date of birth of person tested and/or the passport number of the person tested
    - Name of the laboratory at which the COVID-19 test was processed
    - Written confirmation from the laboratory of the result of a COVID-19 test
    - Written confirmation of:
        a) the date on which the COVID-19 test was conducted; and
        b) if necessary, to establish that the COVID-19 test was undertaken within the 72-hour period prior to the person's journey beginning due to the date of the test, the time at which the COVID-19 test was conducted
    - Written confirmation of the type of test that was conducted

11. The New Zealand Customs Service Te Mana Ārai O Aotearoa (Customs) is the government agency responsible for ensuring that arrivals by air to New Zealand are complying with the PDT requirements in the Air Border Order.

12. Airlines are legally obliged by the Air Border Order to ensure that passengers boarding direct flights have evidence of pre-departure tests, and to take reasonable steps to influence the witnessing of PDT evidence at check-in for the first leg of a multi-leg journey.

13. Since the March review, a rapid increase in cases on travel routes from India led to a pause on travel from there, and then introduction of travel restrictions for a newly-defined group of "Very High Risk Countries" – Brazil, India, Pakistan, and Papua New Guinea.

Customs' verification of pre-departure test documentation

14. Customs data to 10 May 2021 show that 99.75% of arriving passengers have appropriate documentation of a negative pre-departure test or an exemption (Table 1).

15. Almost all of the warnings that have been issued have been for PDT documentation missing one of the six data points, the most common being the Date of Birth or Passport number.

- To date ten Infringement notices have been issued, nine at Auckland and one in Christchurch.
- Three passengers presented no evidence of undertaking PDT
- Four had more than one data element missing from PDT
- One pair of travellers presented altered PDT documentation
- One person had testing undertaken beyond the 72-hour time frame.

Table 1: Outcome of assessment of pre-departure documentation on arrival – to 10 May

Passengers subject to PDT	**22 936**	
Test certificates verified at Passport Control	21 121	
Exemptions verified at Passport Control	772	
Referred to secondary check for PDT	1 043	
Compliant at secondary check		988
Warnings		45
Infringements		10
Prosecution		0

Data is published daily at https://www.customs.govt.nz/covid-19/more-information/pre-departure-testing/

16. One passenger per flight subject to PDT screening is selected for a further check of their PDT documentation to ensure that the screening has been undertaken correctly. The date, flight number and passport number are recorded in a Customs database.

17. Customs does not retain copies of the PDT documentation unless there is an enforcement outcome that requires it for evidential purposes. Privacy statements and the legal framework do not allow for the collection of these data, and there are practical constraints such as that much of the documentation is electronic.

Ministry of Transport's assessment of airline procedures

18. In March, we noted that:

- The Ministry of Transport, in consultation with agencies, had developed operational guidance for airlines to support them in meeting their PDT obligations
- Airlines reported that they were turning away people that did not meet PDT requirements, or exhibited COVID-19 symptoms at check in
- While airlines did not have data on who was turned away at check-in, they informally said that that most people were compliant

- Airlines reported that passengers have been compliant and systems are working well
- Customs also reported that airlines have good compliance
- Airlines raised concerns about PDT quality issues in some countries, in particular India.

19. The Ministry of Transport's recent discussions with the Board of Airline Representatives of New Zealand (BARNZ) found that:
    - Airlines continue to report good passenger compliance, and now have well established systems to support PDT requirements
    - As more countries have added PDT requirements, the expectations on airlines have become more embedded and passenger understanding has grown
    - Compliance has been aided by low volumes of people flying to New Zealand – meaning systems and people are managing the additional work well
    - Anecdotally, airlines understand low numbers of people continue to be turned away from flights because they don't meet the requirements, but data on this is not available to airlines. One airline estimates, based on anecdotal feedback, that at most 1 or 2 people are turned away from each flight.
    - The Ministry of Transport has updated PDT operational guidance to reflect the requirements for "very high risk" countries
    - The PDT requirements around "very high risk countries" (including India) have been clear and are seen as straightforward.

20. Airlines are very keen to hear whether PDT requirements may be reviewed for aircrew who have been vaccinated.

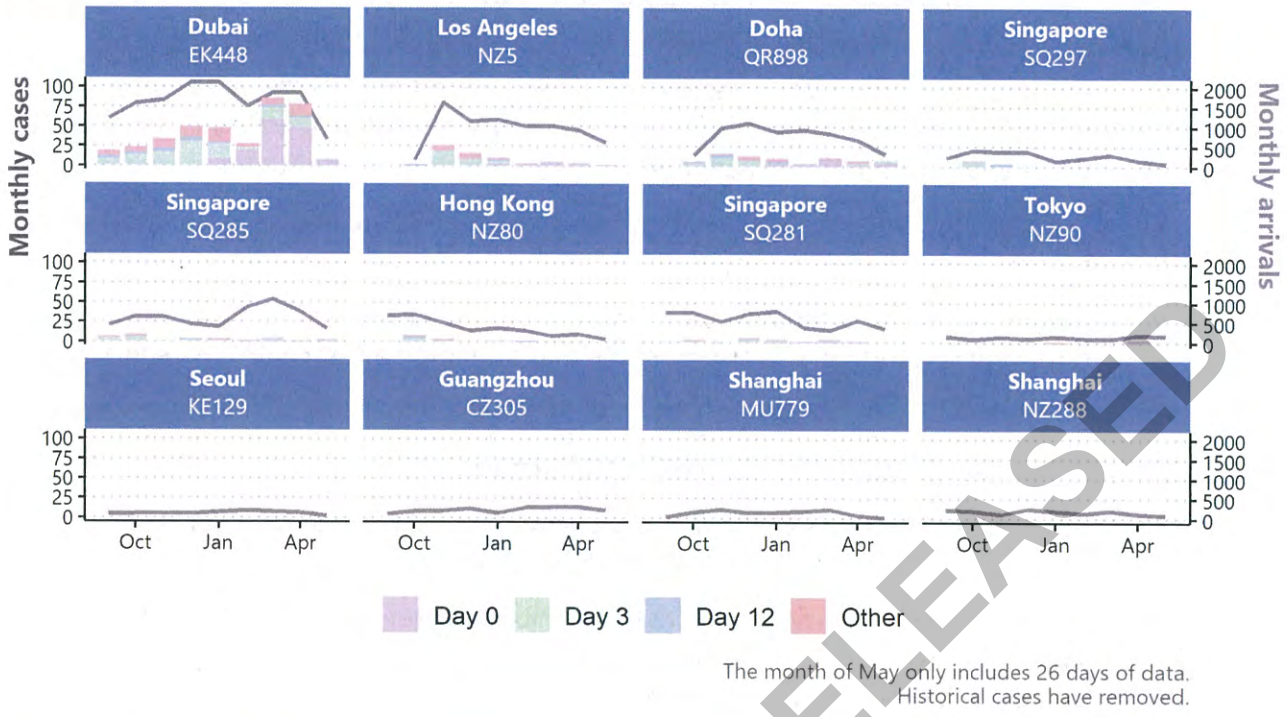
Risk by air travel route

21. The first chart below shows the number of acute (current) cases by flight number for the main passenger routes to New Zealand, along with the number of passengers. The second chart adjusts by the total number of passengers on each route.

22. The charts show that EK448 from Dubai consistently had both the most cases and the highest rate of cases per passenger, until the April pause on travel from India. Since then, its rate of cases per passenger has been similar to other routes.

Figure 1: Monthly acute cases by flight number and departure airport, September 2020 – May 2021

Bars: Weekly cases detected, by test day. Line: Arrivals (right axis).



The month of May only includes 26 days of data.
Historical cases have removed.

Figure 2: Monthly acute cases per 1000 passengers, by flight number and departure airport

Bars: Weekly cases per 1000 arrivals, by testing day. Line: Arrivals (right axis).

The month of May only includes 26 days of data.
Historical cases have removed.

"Other" cases are any test outside the Day 0/3/12 protocol. Before January, the category includes many symptomatic cases detected on day 0 or 1; at all times it includes cases found in close contacts, a number that will correlate with total cases detected.

Effectiveness of pre-departure testing at reducing arrival of acute cases

23. Since September, the three main sources of cases have been India, the UK, and the USA. In summary, the data on cases detected at the border suggest that:

- Pre-departure tests were effective at reducing cases travelling from the UK and the USA. Cases per passenger fell sharply, faster than the fall in new COVID-19 cases in those two countries in January 2021.
- Pre-departure tests were not enough to contain the surge in cases from India in March.

24. It is possible that there would have been even more cases from India without pre-departure testing; although it is also possible that attending a test centre there increased the infection risk for travellers.

How did pre-departure testing affect cases at the border?

25. There are three main drivers of the number of cases that may reach New Zealand from a given country, of which pre-departure testing is only one.

- First, there is the country-specific risk, driven by the prevalence of COVID-19 in that country and the general likelihood of a traveller getting infected shortly before starting the journey to New Zealand.
- Secondly, there is the number of travellers from each country.
- Third is the effectiveness of pre-departure testing in deterring or preventing active cases from boarding.

26. We have earlier reported that transmission in-flight is not a major risk, as shown by whole genomic sequencing finding that cases on each plane did not have a common source, and test data that suggests that most infections occurred before departure.

27. No data are available on the reasons why returnees choose to cancel or defer MIQ bookings, and New Zealand does not have access to laboratory records from other countries. Therefore it is not possible to identify how many people have deferred travel because of a positive pre-departure test.

28. The following analysis therefore focuses on the number of cases originating in each country, compared to the number of travellers from there.

Table 2: Most common departure countries of acute and historical cases detected at the border, Sept 2020 – May 2021

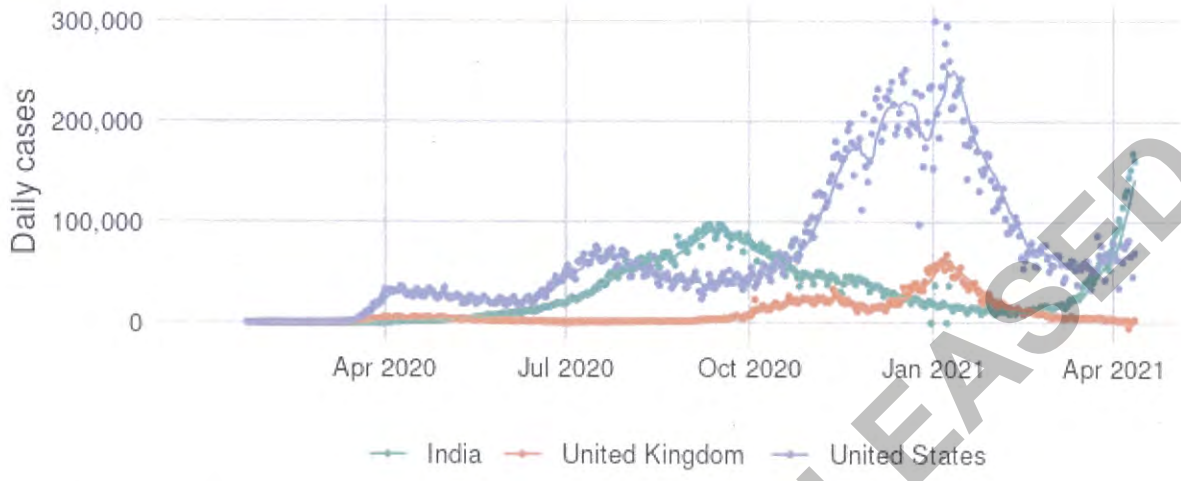
Departure Country	Cases
India	221
United Kingdom	120
United States of America	92
Russia	49
Pakistan	34
Philippines	21
United Arab Emirates	21

29. Since September 2020, the three main sources of cases have been India, the UK, and the USA. Russia is 4th on the list, but those cases were mostly in two events involving ship

crews flying here. UAE cases may include travellers who departed another country and transited through Dubai.

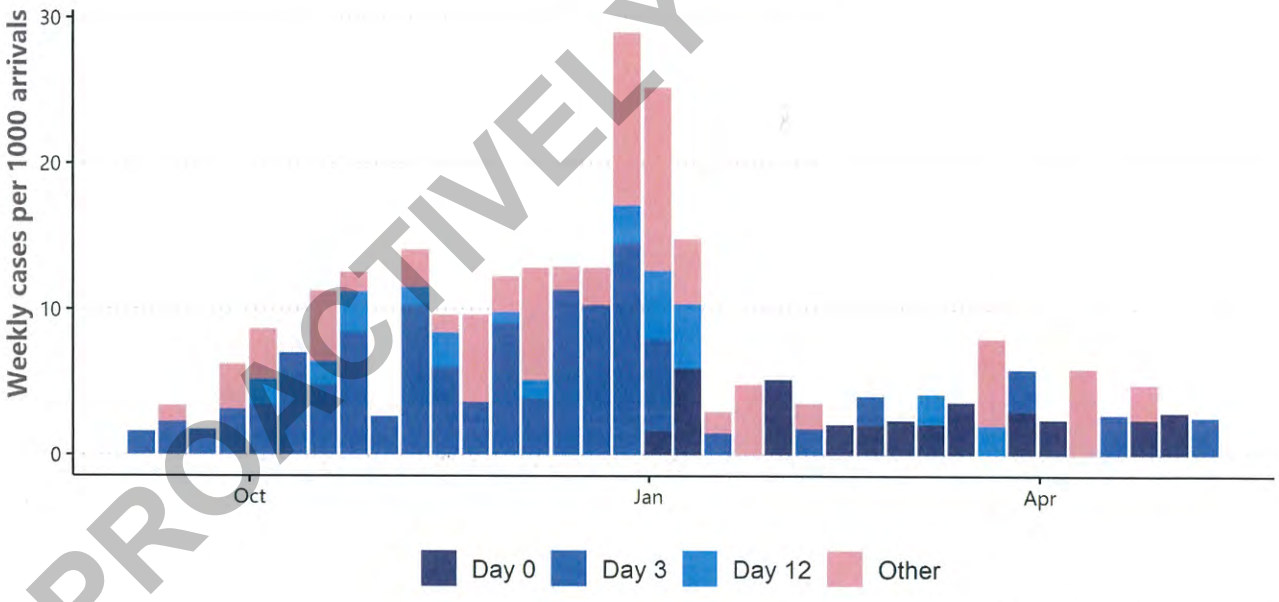
30. Looking at COVID incidence in the three countries, UK and USA cases peaked early in January, while India's surge started in March (Figure 3).

Figure 3: Daily new COVID-19 cases: UK, USA, India



31. The next chart shows that cases in travellers from the UK and US fell rapidly once pre-departure testing started early in January (Figure 4).

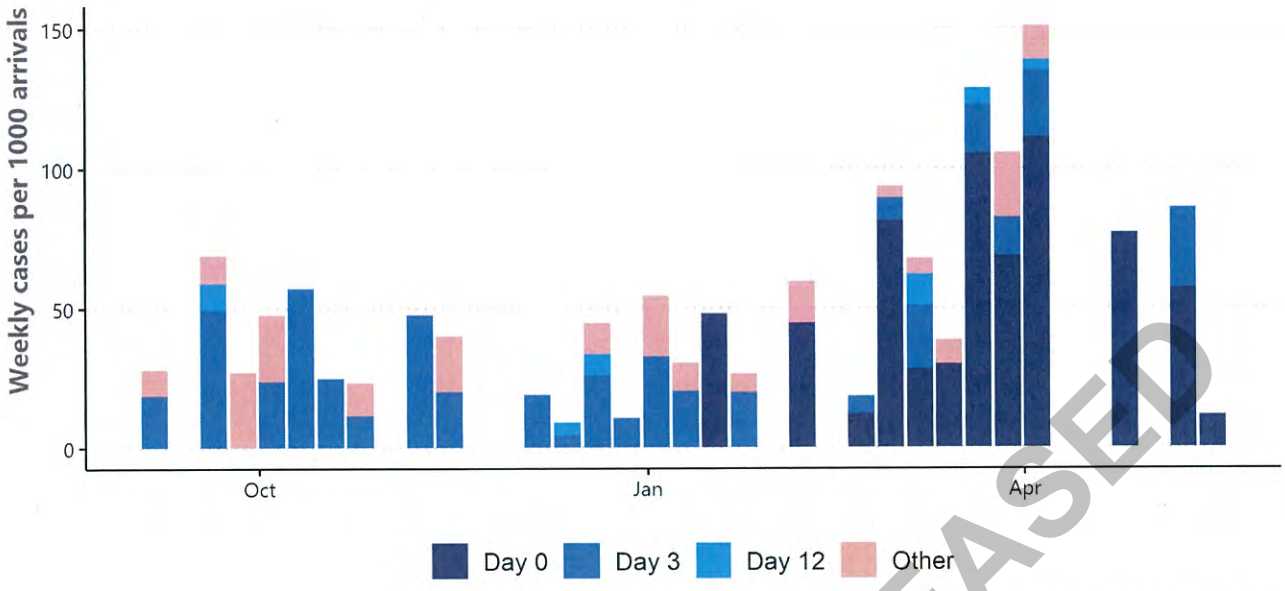
Figure 4: Cases detected per 1000 travellers from UK and USA only



Historical cases have removed.

32. The time-series for cases from the UK and USA is very different from the series for India (Figure 5) and most other countries (Figure 6). While the UK and USA cases remained at a low level after January, an increase in cases per 1000 passengers from other countries only stopped with the April pause on travel from India and the other countries currently classified as 'very high risk': Pakistan, Brazil and Papua New Guinea.

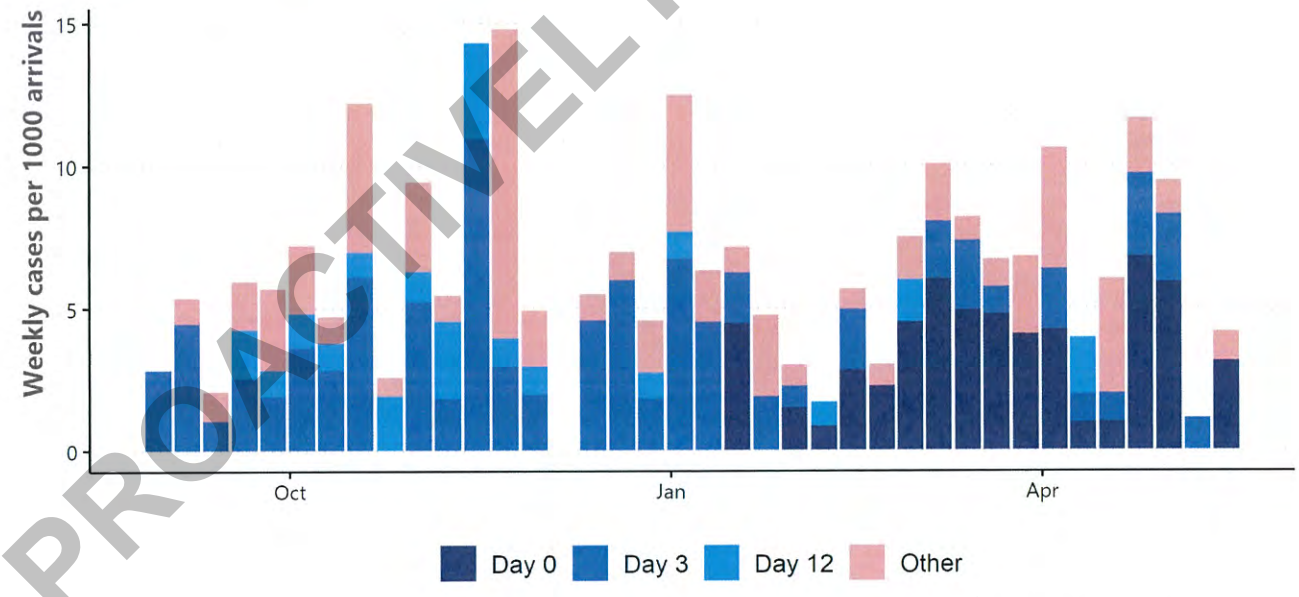
Figure 5: Cases per 1000 arrivals – journeys starting in India



Historical cases have removed.

33. The peak rate for India was 150 cases per 1,000 travellers, almost five times higher than the peak rate for travellers from the UK and USA. In May, there were only 10 cases, but on much reduced traveller numbers.

Figure 6: Cases per 1000 arrivals (other departure countries, except Russia and Ukraine, Australia Niue Samoa and Cook Islands)



Historical cases have removed.

Countries other than: UK, USA, India (displayed above); Australia, Niue, Cook Islands and Samoa (low risk and/or entered quarantine-free travel zone); Russia and Ukraine (small number of events, each with high number of cases).

Impact of day 0/1 testing

34. The policy rationale for day 0/1 testing is that it may increase the probability of infected travellers being detected and isolated early, reducing the potential for transmission in MIQ.

35. To assess whether infected travellers are being detected and isolated early, we considered the proportion of positive tests at day 0/1, day 3[1] and day 12 for managed isolation guests from November 2020 to May 2021. We excluded historical cases as they do not present an infection risk to New Zealand.

36. The 'other' category is people detected other than through routine screening, because they became symptomatic or were a contact of a case.

37. Between implementation of Day 0/1 testing at the beginning of January and 9 May 2021, 193 arrivals (0.4% of all arrivals) tested positive at Day 0/1 and were 'active', not historical, cases. These cases were therefore moved into quarantine two days earlier than if they had been detected at Day 3. This is a small proportion of the total time spent by arriving travellers in Managed Isolation but represents 53% of the total 361 active cases detected in MIQ over the four months.

Figure 7: Proportion of active cases detected in MIQ, by test day, November 2020 – May 2021

38. From January to 9 May, 75% of active cases were diagnosed through either Day 0/1 or Day 3 testing. This compares with 60% of cases having been diagnosed through Day 3 testing in November and December 2020. These data are suggestive that Day 0/1 testing has, as expected, reduced the proportion of arrivals who test positive at Day 3 but confirms the importance of retaining the Day 3 test. Fewer cases are now detected after Day 3.

39. Overall, our judgement is that the current testing schedule should be retained.

Quality of pre-departure testing

40. This assessment has not directly reviewed the quality of COVID-19 tests processed in departure countries, nor the authenticity of the documentation sighted by Customs officials.

[1] We calculated the difference between date of arrival at the border and of the test, assuming that tests taken on days 2 to 4 were 'day 3 tests' and those taken on days 11 and 12 were 'day 12 tests'. We were unable to distinguish between routine day 0/1, day 3, or day 12 tests and tests on people who developed symptoms.

41. We are increasingly likely to see countries and the travel industry require verifiable proof of a traveller's COVID-19 health status (e.g. vaccination and/or COVID-19 test results). However, the approach will be different for each country.

42. The Ministry of Transport and the Ministry of Health are coordinating the Travel Health Pass Work Programme with contributions from the Department of the Prime Minister and Cabinet, the New Zealand Customs Service, the Ministry of Business, Innovation and Employment including Immigration New Zealand, the Ministry of Foreign Affairs and Trade, the Department of Internal Affairs and other agencies with specific interests.

Trends in historical cases

43. There is no obvious trend in the number of historical cases being detected at the border.

44. Ministry of Health officials understand that regional public health units are not always able to consistently follow the protocol for determining whether all cases detected in MIQ are historical. At times of high workload, priority is given to initial case identification and management. Ministry of Health is updating the protocols for follow up of test results that initially have a high Ct value.

Options to improve monitoring of effectiveness

45. One objective of Aotearoa New Zealand's Surveillance Strategy is to collect and use data to assess the effectiveness of the response to COVID-19.

46. Assessing the effectiveness of pre-departure testing would be better if:

- Ministry of Health could routinely access data about cancelled MIQF bookings, and guests were asked questions about the reason for cancellation;
- Data were available on travellers turned away at check-in, with reasons; and
- Pre-departure test results could be directly uploaded by travellers to a New Zealand data repository.

47. Ministry of Health officials will work with other agencies to investigate whether any of these options can be implemented.

Equity

48. This analysis does not consider how the testing policy may affect equity, as incoming travellers to New Zealand are a small group who are not representative of the overall population.

Next steps

49. The Ministry of Transport is aiming to provide more detailed advice on the potential technical requirements to stand up a travel health pass in June/July 2021.

50. The Ministry of Health will continue to monitor and report on cases detected per passenger by flight number and departure country. We are also working with other agencies to improve information sharing to better identify departure country and to compare with cancelled MIQF bookings.

ENDS.