

Briefing

Cases Detected on Flight Route EK448

Explanatory note from the Ministry for Business, Innovation and Employment:

The ventilation in both the Pullman and Bay Plaza were fit for purpose for operating as hotels. The Infection Prevention and Control (IPC) requirements around ventilation were such that made them less viable as managed isolation facilities over time, and as most returnees became high risk.

Date due to MO:	7 April 2021	Action required by:	N/A
Security level:	IN CONFIDENCE	Health Report number:	20210807
To:	Hon Chris Hipkins, COVID-19 Response Minister		
Copy to:	Hon Dr Ayesha Verrall, Associate Minister of Health		

Contact for telephone discussion

Name	Position	Telephone
Patricia Priest	Chief Clinical Advisor, Epidemiology, COVID-19 Health System Response	s 9(2)(a)
Sue Gordon	Deputy Chief Executive, COVID-19 Directorate	s 9(2)(a)

Minister's office to complete:

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 Withdrawn | |

Comment:

Cases Detected on Flight Route EK448

Security level: IN CONFIDENCE **Date:** 7 April 2021

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

Cc: Hon Dr Ayesha Verrall, Associate Minister of Health

Purpose

1. This report provides our most up-to-date information and likely reasons for the recent increase in positive COVID-19 cases arriving on flight EK448. This investigation started when 10 cases were identified on Saturday 27 March 2021 in travellers arriving on Emirates flight EK448 from Dubai. All but one of the cases, and the three of the four that were detected later, started their journey in India.
2. This report also addresses your follow-up question about EK448 in response to a previous Health Report 20210610, *Analysis of Effectiveness of Pre-Departure Testing*. That report advised that the main effect of the January changes to testing at the air border was that cases are being detected earlier in Managed Isolation Facilities. That report also included an analysis that while Emirates flight EK448 from Dubai to Auckland had the highest number and proportion of positive cases detected within 4 days of arrival, the figures appeared to not be significantly higher than for other airlines or flights. Since then, seven more EK448 flights have landed, all with lower numbers and proportions of cases on board.
3. This report analyses the cases detected at the air border up to 4 April, with a focus on the first country of departure for each traveller rather than flight number or airline.

Summary

4. This report analyses the cases detected at New Zealand's air border from 1 January 2021 to 4 April 2021 arriving on flight EK448 from Dubai several times per week. Our focus is on the original country of departure for each traveller, rather than on the airline or flight number. Travellers from many countries transit onto EK448 at Dubai.
5. We find that India is the most frequent departure country for cases detected in arrivals on EK448 during the three-week period to 4 April, and that travellers from India who transit to EK448 were the main cause of an increase in cases detected at the border during March.
6. The most likely timing of the infections is after the pre-departure test, but before boarding in New Delhi and Mumbai. ESR reports that whole genome sequencing results for the 28 March flight are consistent with the infections being acquired before departure. Whole genomic sequencing is not consistent with transmission in-flight either from India to Dubai, in transit at Dubai, or on EK448 from Dubai to Auckland.
7. The overall proportions of active COVID-19 cases detected within 4 days of arrival from any country are low: they have fluctuated between 2 and 12 cases per 1000 arrivals each week between September 2020 and 31 March 2021. Different flight routes and different

countries have been the cause of those fluctuations during that time. Border cases were as low as 3 per 1000 arrivals in the first week of February but rose again in March.

8. In the three weeks to 4 April, there were about 11 cases per 1000 arrivals – which is 1% of all arrivals. While this includes the single flight on 27 March that had 14 cases, there have been seven later EK448 flights that all had fewer or even zero cases.
9. The overall rate of cases detected in or on arrival determines the case load at Managed Isolation and Quarantine (MIQ) facilities. That rate remains low at 1.4% for the week starting 28 March 2021. Our MIQ facilities, in combination with our day 0 or day 1 testing regime, remain our best defence for preventing COVID-19 entering our communities.
10. The exact reasons for the relatively high infection rate in travellers from India are not known. We note that after their pre-departure test, travellers may have complex journeys through a high-prevalence country, first to reach Mumbai or New Delhi airports before flying to Auckland with a transit in Dubai. We also note that India has reported a sharp rise in incidence of COVID-19 since early March.
11. Appendix 1 shows a map of the main locations of departure for all COVID-19 cases since 1 January 2021.
12. Appendix 2 shows all positive COVID-19 cases that arrived on flight EK448 between 29 January and 31 March. Of the 159 cases, 81 departed from India, representing 50.9% of all cases.

Consultation and Engagement

13. Officials from Ministry of Transport and Ministry for Business, Innovation and Employment (MBIE) have been consulted on a draft of this briefing.
14. We also report on a discussion with the Chief Medical Officers of s 9(2)(ba)(i) about s 9(2)(ba)(i) experience with pre-departure tests in India.

Recommendations

We recommend you:

- a) **Agree** that the Ministry continues to monitor flights EK448, examine the trend in positive cases and will continue to update you as required. **Yes/No**
- b) **Note** our current MIQF system and testing regime remain our best line of defence against COVID-19 reaching Aotearoa's communities from offshore locations.
- c) **Agree** our current management of positive cases off EK448 flights in MIQF is successful in addressing risks. **Yes/No**
- d) **Agree** that exclusive MIQ facilities for EK448 returnees is neither needed nor feasible. **Yes/No**
- i. **Note** you have received previous advice on cohorting returnees [MBIE 2021-2195].
- ii. If you do wish to reconsider MIQF cohorts, **direct** officials to provide additional advice, noting it is not recommended due to operational implications for MIQ. **Yes/No**
- e) **Note** that any case-by-case changes to New Zealanders' journey home, whether by airline or country of departure must consider the equity impacts.
- f) **Note** that the Ministry of Health and other government officials consider that airline and Custom's procedures for checking pre-departure test documents are robust.
- g) **Note** that the Ministry of Health and the Ministry of Transport are continuing to engage with Emirates and other airlines directly.
- h) **Note** that we will update the analysis on the effectiveness of pre-departure testing in May 2021.



Sue Gordon
Deputy Chief Executive
COVID-19 Health System Response
Date:

Hon Chris Hipkins
Minister for COVID-19 Response
Date:

Cases Detected on Flight Route EK448

Background

Pre-departure and Day 0/1 testing regime

15. As reported to you in HR 20210610, two steps were taken in January to strengthen the "Keep It Out" pillar of New Zealand's Elimination Strategy. Arrivals by air from high-risk countries are now required to,
 - a. provide evidence of a negative COVID-19 pre-departure test result within the 72 hours before departing their port of origin,
 - b. are tested on Day 0 or 1 of their stay in a Managed Isolation and Quarantine Facility (MIQF), and
 - c. are required to remain in their room until the result of the Day 0/1 test is available.
16. Day 0/1 testing was required for travellers from the United Kingdom and from the USA from 1 January 2021 onwards. Since 18 January 2021, it applies to travellers arriving from all destinations except Australia, Antarctica and most Pacific Islands.
17. 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 including meeting all the six elements, where relevant.
18. 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 pre-departure testing (PDT) evidence at check-in for the first leg of a multi-leg journey.
19. As noted in our previous advice to you, airlines flying to NZ, including Emirates, report to the Ministry of Transport that they have been complying with the PDT requirements and that their systems are good. The low numbers of warning letters and infringements issued by Customs suggest that airlines are witnessing the relevant PDT documentation before people board. Customs also reports that compliance by airlines has been good.

What we know about the cases off flight EK448, arrived 27 March 2021

20. As of 9:00am 6 April, 14 cases have been identified from Emirates flight EK448 that landed on Saturday 27 March 2021. Of the 14 cases, 12 were detected at Day 0/1 testing, one was detected at Day 3 testing, and one case identified as a close contact was detected at Day 8. All cases are considered to be acute. Although cases 9, 11 and 12 have relatively high Ct (cycle threshold) values, they are considered to be acute as they have symptom onset dates recently prior to their date of departure.
21. At this stage we cannot conclusively determine numbers of historical cases compared to acute cases off flight EK448.
22. If the cases with high Ct values on day 0 or day 3 tests remain without symptoms throughout their MIF period, it is likely this indicates they are historical cases with low risk of further spread.

23. Preventing symptomatic passengers from starting their travel to New Zealand is a known issue. This is complicated by many being 'self-reported symptoms' which may or may not be indicative of COVID-19 illness and may be reported post-arrival in New Zealand.
24. Twelve of these cases started their journeys in India, which is a high-risk country currently experiencing a significant increase in COVID-19 prevalence.
25. Additional measures have been put in place at MIQF for returnees who are identified as close contact of cases. This includes an additional test at Day 6/7 of exposure and restricted movement outside of room until a negative result is returned from the Day 6/7 test.

What we know about travellers on EK448 flight route

26. This flight is a connecting route for travellers from across Africa, Europe, Middle East and South Asia. It travels from Dubai, transiting through Kuala Lumpur, Malaysia for refuelling (where travellers do not disembark) before landing in Auckland.
27. All but one of the 12 cases detected on arrival on 27 March began their journey in India. This suggests that transmission occurred prior to flight, as there were travellers from many other countries on that aircraft and it is unlikely that any Day 0 cases are due to in-flight transmission. This conclusion is supported by the first results of the whole genomic sequencing.
28. Seven more EK448 flights arrived between 28 March and 3 April; two had no cases from India; total cases ranged from 0 to 8 per flight. The overall trend for positive cases off flights EK448 is reassuring. At the peak, off the flight which landed in New Zealand on 27 March, the positive cases were 165 per 1000. In comparison the most recent flight on 3 April 2021 was 58 per 1000.

What we know about travellers departing from India

29. The most likely hypothesis for the increase in cases leaving India and arriving in New Zealand on EK448 is that the prevalence of COVID-19 infection in India has significantly increased since early March.
30. After their pre-departure test, travellers may have complex journeys through a high-prevalence country with high-risk corridors, first to reach Mumbai or New Delhi airports, then on to Auckland with a transit in Dubai.

How travellers on EK448 are currently managed on arrival in New Zealand

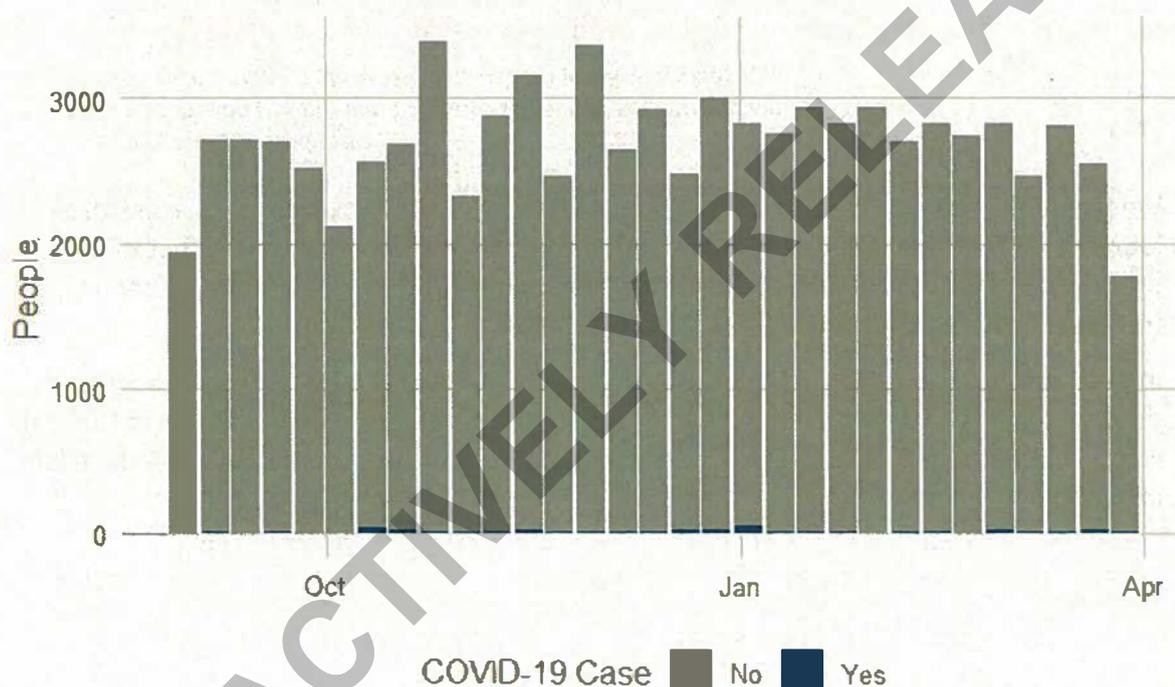
31. Flight EK448 arrives in New Zealand five times per week, s 9(2)(b)(ii)
32. Due to the observed number of positive cases arriving on flight EK448 as compared to other flights, MBIE-MIQ minimises the movement and interactions of travellers on this flight where practicable. This includes the following measures:
 - a. Travellers on EK448 are only placed in Managed Isolation Facilities (MIFs) in Auckland and not transferred outside of Auckland.
 - b. Each group of arrivals on EK448 is accommodated together in the same facility (or two facilities for larger groups).

- 33. On arrival at the MIF, all passengers arriving on EK448 are subject to day 0/1 testing and room restrictions. Any positive cases (along with their bubbles) are relocated as soon as possible to the Jet Park Quarantine facility.
- 34. All MIQ facilities operate in Level 4 environments, which means that every returnee is treated as if they may have COVID-19. Of over 120,000 returnees there have been less than ten cases of intra-MIF transmission (outside of peoples' own bubbles).

Analysis

- 35. Overall, the rate of COVID-19 cases detected in or on arrival at a MIQF remains low: between 2 and 14 cases per 1000 arrivals each week between September 2020 and 4 April 2021. Figure 1 shows that while the number of arrivals ranges from about 1750 to 3375 per week, case numbers ranged from 2 to 58.

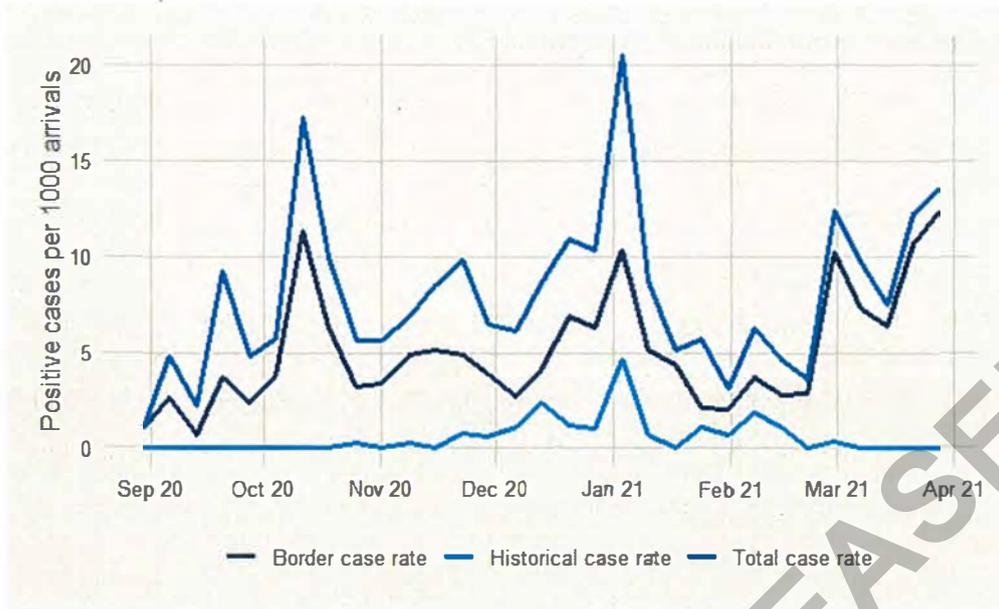
Figure 1 Weekly arrivals, by COVID status



Notes: Includes all COVID-19 cases: Historical, Day 0/1, Day 3, Day 12 & Other
Last updated: 6 April 2021

- 36. The next chart shows cases as a proportion of arrivals, focussing on "border cases" detected within the first 4 days of arrival, as they include the ones most likely to have been infected before travelling. The proportion of positive cases rose during March, to levels similar to the peaks in October 2020 and January 2021. Serology testing is expected to find that some of the recent cases are historical, i.e., not currently infectious cases.

Figure 2: MIQ Case rates, by week of arrival

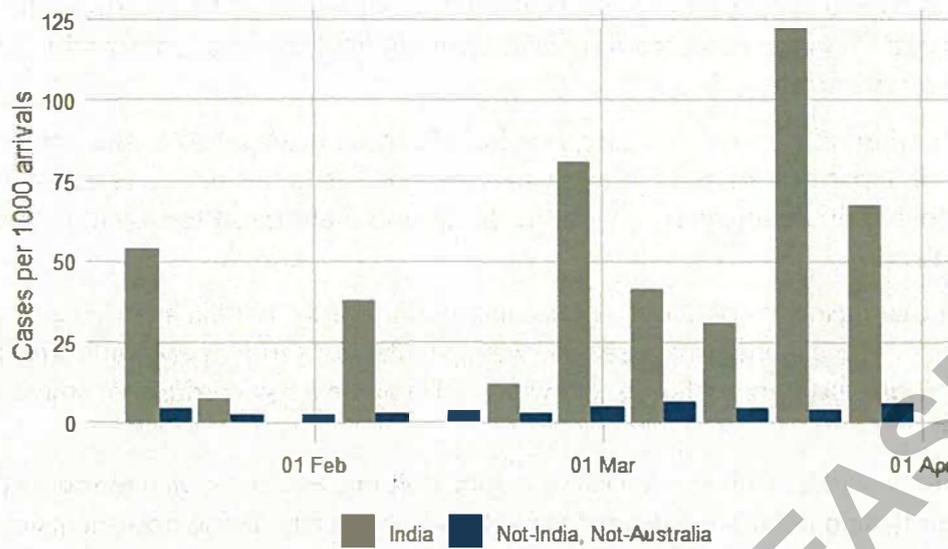


Notes: Some recent cases may be reclassified as historical cases.
 Border cases are defined as cases detected within 4 days of arrival
 Last updated: 6 April 2021

37. We used MIQ data on the departure country of travellers to look only at cases whose journeys started beyond Australia. The data by country of departure show that the proportion of cases found in arrivals whose journey started in India is higher than in travellers from other countries.
38. In the week including the 27 March EK448 flight, 12% of all travellers from India tested positive for COVID-19 within 4 days of arrival. In the seven more EK448 flights in the next week, that figure fell back to 6%. s 9(2)(b)(ii)

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Figure 3: Weekly border case rate: India compared with rest of world (all flights excluding Australia)

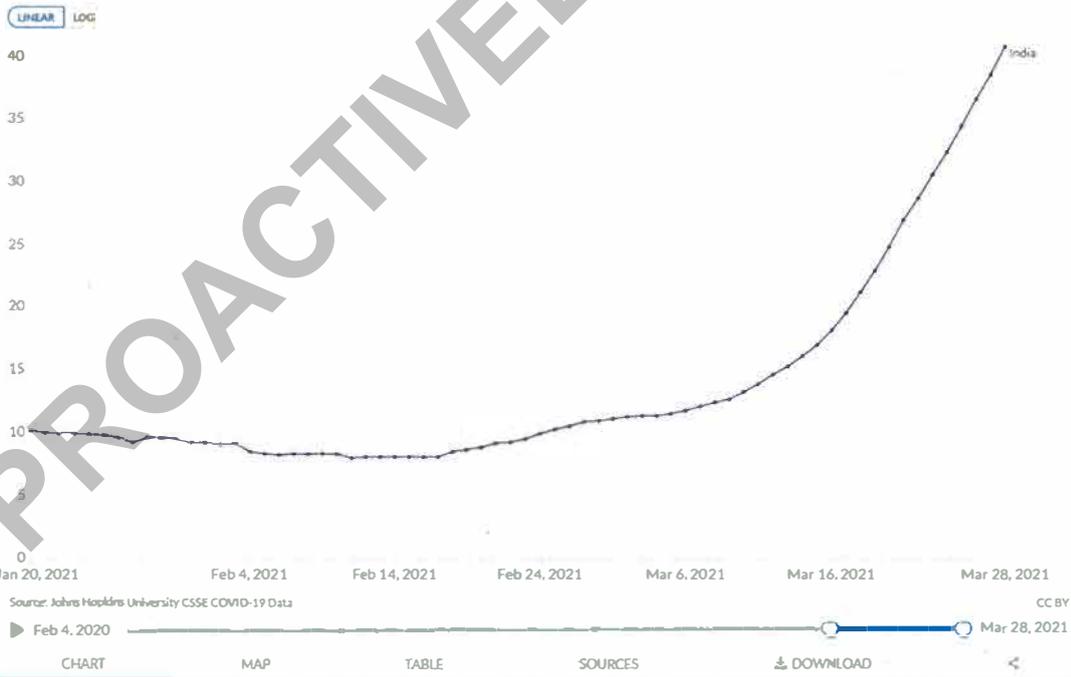


Notes: Border cases are defined as cases detected with 4 days of arrival. Exclusion of Australian departures will have excluded some non-Australian departures

39. Of relevance, in the last two weeks there has been a four-fold increase in new daily confirmed COVID-19 cases per million people in India. Incidence has surged from 10 cases per million people to 40 cases per million.

Daily new confirmed COVID-19 cases per million people

Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases: the main reason for that is limited testing.



What we know from arrival travel histories

40. The Ministry has reviewed notes from both MIQF and Public Health Unit interviews with the newly arrived cases off the flight EK448 which landed on 27 March 2021. There is no obvious pattern in the notes from travellers from India. There is a range of 'bubble size' and reasons for travel.
41. However, what does stand out is the number of segments travelled to the international airports of departure: a typical journey involves a day-long taxi ride to reach Mumbai or New Delhi airport, followed by a flight to Dubai, and then transit to EK448 departing to New Zealand
42. We note that incidence of COVID-19 has increased sharply in India even in recent weeks, with the country experiencing a second wave of infections (refer paragraph 37 above). Therefore, ground transportation following PDT may be a risk corridor for transmission en-route.
43. The Ministry worked with the Auckland Regional Public Health Service to request pre-departure testing documents from Cases 11 and 12 directly. These documents clearly state that these cases returned a negative test result taken 48 hours prior to travel.

What we know from whole genome sequencing

44. ESR reports that genome sequencing has not found any unexpected links between bubbles on the 27 March EK448 flight, although some tests failed to give a full result. The whole genome sequencing results are consistent with the infections being acquired before departure.

Our engagement with airlines

45. We contacted the Chief Medical Officers of Air New Zealand, s 9(2)(ba)(i) who are members of the Medical Advisory Group of IATA.
46. s 9(2)(ba)(i) flights from India and have had some experience of people testing positive shortly after arrival despite negative predeparture tests, particularly early in the pandemic.
47. Possible reasons include Indian laboratories using a different cut-off CT threshold for a 'positive' result, variable test-taking quality, crowding in test facilities and risk of infection while getting a test, and forgery.
48. s 9(2)(ba)(i)

Discussion

49. As noted in the analysis above, it is important to keep in mind that the overall rate of COVID-19 cases arriving into our MIQ facilities is low and therefore the relative risk from imported cases is low. However, there is no "zero risk" when considering the potential importation or exportation of cases in the context of international travel.
50. The recent rise in cases on the EK448 flight appears to be attributable to travellers whose journey started in India, not to travellers from other countries, nor to any new infection risk in the aircraft or during international transits.

51. There is no evidence to conclude that pre-departure tests are inaccurate or misleading. There are anecdotal statements that some passengers have cancelled travel. With a two-day incubation period, there are two possibilities. Either travellers were infected after a negative test but before departure, or the infection occurred shortly before their predeparture test and they were tested during the incubation period but before they became infectious.
52. In support of this hypothesis, we note that travellers departing India often have a complicated travel route to arrive in New Zealand. After their 72-hour PDT, often there is extensive domestic and international transit travel en-route to New Zealand. We also note that the incidence of COVID-19 reported in India has surged significantly during March.
53. It is also possible that at the time of pre-departure testing, cases may have been incubating the virus and would have returned a negative test. A traveller can return an authentic negative test before travelling but may be in the early stages of incubating the disease and hence they may have a positive test upon arrival in New Zealand.
54. Our analysis does not suggest there is an issue with Emirates' compliance with our PDT requirements. Emirates is working constructively with New Zealand government officials on these, and other issues as we work through improving our processes to border management in the context of COVID-19.
55. The Ministry of Transport notes that Emirates is entitled to fly here under their Air Services Agreement with New Zealand. s 9(2)(f)(iv)
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Conclusion

56. Cases arriving on EK448 on 27 March most likely contracted the virus en-route within India due to the current increase in cases reported by India, and the number of segments travellers from India must take to connect to their international flight.
57. It is less likely that there are issues with the airlines or PDT documentation.
58. It is also unlikely that the cases detected on arrival were due to in-flight transmission. This is supported by evidence of whole genome sequencing. Given the number of cases identified on this flight, it is possible that further cases may be detected in those that were identified as close in-flight contacts, however IPC measures in place are expected to reduce this risk.
59. Our current MIQF system and testing regime remain our best line of defence against COVID-19 reaching Aotearoa's communities from offshore locations, regardless of country of departure.

Should the Government act, and if so, how?

60. Since the beginning of the COVID-19 pandemic, Government has remained clear that all New Zealanders have the right to return home regardless of the country they have been living, or staying in, up to this point. We would not recommend changing this policy to exclude or restrict any group of returnees.
61. Any case-by-case change to how we manage New Zealanders as they journey home, whether by airline or country of departure must take into consideration the equity impacts.
62. It is also important to keep in mind that the overall rate of COVID-19 cases arriving into our MIQ facilities is low. In the past week to 4 April 2021, 1.4% of all arrivals into MIQF tested positive.
63. We do not recommend any additional actions as our current MIQF system and testing regime remain our best line of defence against COVID-19 reaching communities. Our current management of positive cases off EK448 flights in MIQF is successful in addressing risks.

Exclusive facilities for flight EK448 – not recommended

64. As mentioned above, MBIE-MIQ has put in place measures to specifically manage the risk posed by travellers arriving on flight EK448.
65. MIQ have advised that setting up exclusive facilities for flight EK448 is not operationally feasible as it would require 5-8 facilities (depending on facility capacity and the number of travellers) and result in significant room wastage. It would also severely constrain MBIE's operational ability to respond across a range of other MIQ requirements (e.g. hotel maintenance, ventilation reviews, aircrew and maritime MIF requirements, targeted 500 reduction in occupancy, group arrivals etc).
66. With the exception of the Pullman and Bay Plaza facilities, there has not been any public health advice that other MIQ facilities are not fit for EK448 travellers (or any other long-distance flight), or that IPC practices are not sufficient.
67. As such, MBIE-MIQ intends to continue to operationally manage EK448 arrivals as per current planning and logistics protocols.

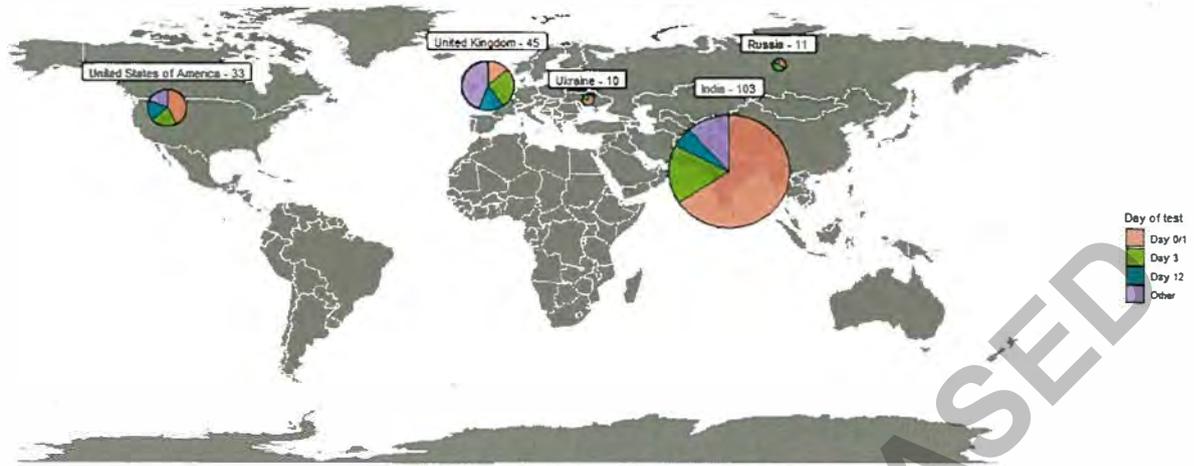
Next steps

68. The Ministry of Health and the Ministry of Transport are continuing to engage with both Emirates and other airlines regarding pre-departure testing and other matters relating to passengers on who on transit to New Zealand from India, on flight EK448.
69. The Ministry continues to monitor the situation as per our normal practice.
70. The Ministry of Health will update the analysis of pre-departure testing in May 2021.

ENDS.

Appendix 1

Confirmed positive cases detected in MIQ by departure country and day of testing
countries with 10 or more cases reported between 1 Jan and 31 Mar 2021



For questions/feedback, please contact Evren Ozdogru

Data source: ESR

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