Briefing

Proof of COVID-19 vaccination in the context of border reopening: scientific and public health considerations

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

Contact for telephone discussion

Name	Position	Telephone
Dr Ashley Bloomfield	Director-General of Health	s 9(2)(a)
Maree Roberts	Deputy Director-General, System Strategy & Policy	s 9(2)(a)

Minister's office to complete:

☐ Approved ☐ Decline ☐ Noted

☐ Needs change ☐ Seen ☐ Overtaken by events

☐ See Minister's Notes ☐ Withdrawn

Comment:

Proof of COVID-19 vaccination in the context of border reopening: scientific and public health considerations

Security level:	IN CONFIDENCE	**Date:**	30 July 2021
To:	Hon Chris Hipkins, Minister for COVID-19 Response		

Purpose of report

1. This report provides you with advice on the scientific and public health considerations for how COVID-19 vaccination status can assist risk stratification of inbound travellers to reduce the risk of COVID-19 from entering New Zealand.

2. This report is an item in the *Reconnecting New Zealanders with the World* work programme that was considered by Cabinet on 5 July 2021 [CAB-21-MIN-0263 refers]. The focus for this briefing is primarily on vaccination status for **inbound** travellers to New Zealand. It does not cover the use of vaccination credentials for domestic use, i.e. to access venues, services or settings within New Zealand.

3. This briefing discloses all relevant information.

Summary

4. Used alongside country and travel route risk assessment ascertaining the vaccination status of inbound travellers can assist with individual risk stratification. It can also support more tailored mitigation measures such as testing and isolation/quarantine based on the risk an individual might present.

5. No vaccine is 100 percent effective against transmission however, and the evidence is still evolving. Uncertainties remain in key areas such as real-world vaccine effectiveness, duration/type of immunity, and the changing nature of these variables as new variants emerge.

6. COVID-19 control measures, including border rules around vaccination status, will need to be flexible and responsive to accommodate this dynamic scientific and epidemiological situation

7. Vaccination certificates are health records that can confirm a person has received a vaccination, however they cannot prove immunity or guarantee the bearer presents low or no risk of importing or transmitting COVID-19.

8. Where there may be significant benefits of having a vaccination certificate (such being granted an entry visa to another country or being exempt from managed isolation and quarantine), the credential itself can become a valuable commodity.

9. Currently, there are numerous vaccination certificate formats being issued internationally. A growing black market in fake COVID-19 vaccination and test certificates is reinforcing the need for global standards for COVID-19 credentials that have security features that provide authenticity and are able to be digitally verified.

10. Until international standards are adopted more widely, the variability in formats will present significant challenges for verifying vaccination status of inbound travellers to New Zealand. Key considerations for easing the border rules for vaccinated travellers should include our degree of confidence:

    a. in the authenticity of the vaccination certificate

    b. that the bearer of the certificate was the person who received the vaccination

    c. that the vaccine the person received meets our standards of efficacy.

11. The rigor around what New Zealand accepts as a valid proof of vaccination needs to reflect the Governments strategy to keep COVID-19 out of the New Zealand community.

12. Systems to transact and verify COVID-19 health credentials for inbound travellers to New Zealand, using a travel health declaration, are in development, led by Customs. The Ministry of Health is providing advice on health conditions and risk mitigation measures as part of the Reconnecting New Zealanders work programme.

13. Part of this work includes establishing New Zealand 'vaccination standards' for inbound travellers, such as:

    a. which vaccines would be accepted?

    b. what "fully vaccinated" means (i.e. number doses, dose intervals, and time before travel)?

    c. what form of proof we might accept?

14. The Ministry of Health is progressing the development of a digital COVID-19 vaccination certificate for people vaccinated in New Zealand, using a format aligned with the European Union standard. This will be widely available towards the end of 2021.

15. The Ministry of Health will continue to engage with other global standards including the International Civil Aviation Organisation Visible Digital Seal and World Health Organization Digital Documentation of COVID-19 Certificates to ensure we are able to create certificates that meet requirements of different jurisdictions. Officials are also working through the process for seeking country-to country or regional mutual recognition of vaccination certificates.

Recommendations

We recommend you:

a) **Note** that confidence in the vaccination status of people wishing to travel to New Zealand can assist with assessment and mitigation of risk at the border.

b) **Note** that no vaccine is 100 percent effective against transmission and evidence is still evolving around real world vaccine effectiveness, duration/type of immunity and the impact of variants on these variables.

c) **Note** that COVID-19 control measures, including border rules around vaccination status will need to be flexible to response to the dynamic scientific and epidemiological situation.

d) **Note** a growing black market of fake vaccination certificates is emerging internationally.

e) **Note** that until international standards are adopted more widely, the variability of formats will present significant challenges for verifying vaccination status of inbound travellers to New Zealand.

f) **Note** that key considerations for assessing traveller risk based on vaccination status include the level of confidence in the authenticity of the certificate; that the bearer of the certificate was the person who received the vaccination; and that the vaccine meets our standards for efficacy.

Dr Ashley Bloomfield
Te Tumu Whakarae mō te Hauora
Director-General of Health
Date: 3/8/2021

Hon Chris Hipkins
Minister for COVID-19 Response
Date: 10/8/2021

This work is critical to the Reconnecting NZ programme.
We need to see a joined-up govt approach to this.
A digital solution linked to passports would be ideal.

Proof of COVID-19 vaccination in the context of border reopening: scientific and public health considerations

Proof of vaccination as a tool for managing the pandemic

16. Globally, the rollout of effective COVID-19 vaccines is seen as offering the best pathway to manage the pandemic, enabling the safer reopening of international borders and the resumption of most previously enjoyed freedoms. In New Zealand, vaccines are expected to help shape the phased approach for easing our border restrictions, supported by science, research and evidence.

17. The need for a high level of confidence about a person's vaccination status is driving the push towards trusted credentials that can prove to a third party that a person has been vaccinated against COVID-19. Knowing a person's vaccination status can enable decisions about the level of risk an individual might present and what mitigations might be needed in order to manage the risk. In the context of inbound travellers to New Zealand, the risk an individual traveller presents is also dependent on the numbers of people vaccinated domestically.

Technological solutions can assist with verifying COVID-19 health status

18. On 31 May 2021, the joint statement from Prime Ministers Rt Hon Jacinda Ardern and the Hon Scott Morrison for the annual Australia New Zealand Leaders' Meeting, noted that they had "tasked officials to explore technological solutions to verify vaccination status to enable Australians and New Zealanders to reconnect with the wider world…"

19. Internationally, countries are issuing a wide variety of vaccination certificates using variable formats. A growing black market in fake COVID-19 vaccination and test certificates is reinforcing the need to for countries to adopt global standards for COVID-19 credentials that have security features for authenticity and that are able to be digitally verified.

20. Where there are significant benefits of having a vaccination certificate (such as being granted an entry visa or being exempt from managed isolation and quarantine), the credential itself can become a valuable commodity.

21. As paper documents can be subject to fraud or falsification and can be easily lost or damaged, digital certificates can provide greater confidence that the person presenting the certificate is indeed the person who received the vaccination.

22. Work is progressing to develop a New Zealand issued verifiable digital COVID-19 health certificate for people vaccinated or tested in New Zealand. This is being developed alongside work for an accessible digital mechanism for people to be able to store and view their own COVID-19 vaccination and testing records. The ability for users to be able to request and upload a vaccination certificate as part of this functionality is expected to be widely available by the end of the year.

23. Recognising the importance of international interoperability, the Ministry of Health is designing the New Zealand issued vaccination certificate to be aligned with the emerging international standards. Initially the New Zealand credential will use the European Union Digital COVID-19 Certificate (EUDCC) standard. The Ministry of Health will continue to engage with other global standards including the International Civil Aviation Organisation Visible Digital Seal (ICAO VDS) and World Health Organization Digital Documentation of COVID-19 Certificates (WHO DDCC) to ensure we are able to create certificates that meet requirements of different jurisdictions.

24. This work sits within the Travel Health Pass work programme and is closely aligned with Reconnecting New Zealanders policy decisions. You recently received a briefing from the Ministry of Transport that provided an update on the Travel Health Pass Work Programme (OC210425,16 June 2021).

25. The Travel Health Pass work programme has two component parts - departures, and arrivals:

    a. **departures:** to ensure that people vaccinated in New Zealand can access a digital COVID-19 health credential (e.g. vaccination and test certificate) that can be used to facilitate international travel (led by the Ministry of Health)

    b. **arrivals:** a travel health declaration system that can check and verify a travellers COVID-19 health credentials to ensure travellers are in the correct entry pathway for their risk (led by Customs).

26. This briefing does not repeat the issues covered in that briefing, but rather provides an overview of how assessing the vaccination status of inbound travellers can be as a tool to reduce the risk of COVID-19 from entering the New Zealand community.

Internationally, many countries are introducing proof of vaccination for inbound travellers

27. An increasing number of countries have introduced varying isolation and test exemptions for travellers from low risk countries and who can provide proof of having been vaccinated against COVID-19.

28. At this stage very few countries are requiring vaccination as a *mandatory condition* of entry, with the exceptions to date being Papua New Guinea, Indonesia, Samoa, Grenada, Azerbaijan, Equatorial Guinea and Palau.

29. The scope and extent of exemptions for vaccinated travellers vary based on risk-benefit trade-offs such as geographical proximity, epidemiological factors, response capacities, and socio-economic factors.

WHO position

The World Health Organization advises against proof of vaccination being a mandatory condition of entry

30. The World Health Organisation (WHO) advises against Members States requiring proof of vaccination as a condition of entry or departure across international borders. Their main concern is the limited evidence about the performance of vaccines in reducing transmission and the persistent inequity in the global vaccine distribution.

31. They also cite equity concerns in that preferential vaccination of travellers could result in inadequate supplies of vaccines for priority populations considered at high risk of severe COVID-19 disease.

Instead the WHO recommends a risk-based approach to international travel

32. While recognising the diverse epidemiological situation and that countries have varying response capacities, the WHO recommends Member States adopt a risk-based approach to international travel which considers:

    a. the risk posed by travel for the importation and exportation of cases in the context of the evolving epidemiology, including the emergence and circulation of virus variants of concern

    b. the expansion of the COVID-19 vaccination roll-out

    c. lessons learned while responding to the pandemic, including on the early detection and management of cases and the application of public health and social measures.

33. Key among the WHO recommendations are that Member States:

    a. not require proof of COVD-19 vaccination as a *mandatory* condition for entry to or exit from a country.

    b. consider a risk-based approach to the facilitation of international travel by lifting measures, such as testing and/or quarantine requirements, to individual travellers who:

        - were fully vaccinated, at least two weeks prior to travelling, with COVID-19 vaccines listed by WHO for emergency use or approved by a stringent regulatory authority, or
        - have had previous SARS-CoV-2 infection as confirmed by real time RT-PCR (rRT-PCR) within the six months prior to travelling and are no longer infectious as per WHO's criteria for releasing COVID-19 patients from isolation.

    c. if testing and/or quarantine requirements are lifted for travellers who meet the above-mentioned criteria, offer alternatives to travel for individuals who are unvaccinated or do not have proof of past infection, such as through the use of negative rRT-PCR tests, or antigen detection rapid diagnostic tests (Ag-RDTs).

    d. consider recording proof of COVID-19 vaccination in the International Certificate of Vaccination or Prophylaxis (ICVP) ("Yellow booklet") or in digital formats, as recommended by regional or global intergovernmental bodies. Where digital certificates of "COVID-19 status" are used, interoperable solutions should be sought to allow for cross-border verification.

Assumptions

Assumptions behind COVID-19 vaccination certificates

34. The assumption underlying the use of COVID-19 vaccination certificates domestically or for international travel is that vaccination not only protects the vaccinated individual from being infected and becoming severely ill from the disease, but it also reduces their risk of spreading it to others.

35. In the context of international travel, this assumption implies that vaccinated travellers:

    a. pose *less risk* of importing or exporting the virus

    b. pose *less risk* of transmitting the virus to others if they are infected

    c. are *less likely* to get severely unwell (personal protection)

    d. are *less likely* to place a burden on the health care system.

36. Requiring proof of vaccination allows the stratification of people by the risk they present, and enables a more nuanced approach to testing, and isolation/quarantine requirements based on that risk.

37. It is important, however, to understand just how much risk is mitigated through vaccination, and what risk a vaccination certificate bearer might present to others.

Science

What does the science say?

38. While no COVID-19 vaccine can block transmission of the virus 100 percent, it is clear that vaccines, particularly the Pfizer vaccine, can substantially reduce transmission of the virus. Evidence on the magnitude of the reduction in transmissibility is still emerging.

39. In order for a person to transmit the virus to another person (infectiousness), they must first become infected, which depends on their 'susceptibility' and degree of protection. The Pfizer vaccine has approximately 90% vaccine effectiveness against the first of these steps - viral infection - relative to unvaccinated individuals.

40. As an absolute measure of risk, once vaccinated, approximately <0.5% of Pfizer-vaccinated individuals become infected ('breakthrough' infections). While it is possible for these individuals to infect others, the rate at which a vaccinated infected person can transmit the virus is unknown. However, there is emerging evidence that people vaccinated with Pfizer are less infectious and that vaccinated cases tend to be more asymptomatic, have lower viral loads, and a shorter duration of infection.

Vaccine standards

41. There is variability in the efficacy of different COVID-19 vaccines currently in use internationally. Effectiveness against transmission can vary depending on the type of vaccine and the dominant variant in circulation. While most vaccines offer protection against severe disease, some do not appear to offer the same level of protection against transmission.

42. Prevalent variants and the type of vaccine are important considerations for New Zealand when implementing proof of vaccination for inbound travellers, if the goal is to prevent the importation of the virus.

Not everyone develops the same immune response

43. Vaccination certificates are not immunity certificates. Not everyone will mount the same immune response to the vaccination - the same vaccine may be very effective in protecting one recipient and less so in another. So, while vaccination certificates are a record of a vaccination event they do not prove that a person is immune to the disease.

And some people cannot be vaccinated or may not have had the opportunity to be vaccinated

44. Should requiring proof of vaccination be introduced as a requirement for inbound travellers, consideration needs to be given to people who cannot be vaccinated, such as children or people with particular health conditions. Currently there are a variety of approaches in place for children seeking to travel internationally. Some countries require full testing and managed isolation and quarantine; some require 14 days self-isolation; and others waive all testing and isolation requirements if children are travelling with fully vaccinated family members or caregivers.

45. Whether or not inbound travellers have had the opportunity to be vaccinated may also be a consideration. This may be an issue for maritime crew for example.

Vaccine standards for international travel

The core vaccination standards are relatively consistent

46. Countries that have introduced vaccination status as a consideration at the border tend to have common criteria such as confirmation the required doses have been administered with the correct intervals, and that the last dose was received at least 14 days prior to travel. As the evidence is still emerging on the duration of vaccine induced immunity, some are also specifying that the last vaccination is received within six months prior to entry.

But some vaccines are more widely accepted than others

47. There is more variability in which vaccine a country recognises for cross-border travel. Not all vaccines are accepted consistently across jurisdictions. Some countries refer to the full set of WHO approved vaccines, while others specify a narrower list.

48. The WHO recommends that countries recognise all COVID-19 vaccines validated by the WHO Emergency Use Listing (EUL) or those approved by a Stringent Regulatory Authority (SRA). On 1 July 2021, COVAX issued a statement urging all regional, national and local government authorities to recognise as fully vaccinated all people who have received COVID-19 vaccines that have been deemed safe and effective by the WHO and/or the 11 Stringent Regulatory Authorities approved for COVID-19 vaccines when making decisions as to who is able to travel or attend events.

49. The COVAX statement noted that any measure that allow only people protected by a subset of WHO-approved vaccines to benefit from the re-opening of travel into and with that region would effectively create a two-tier system. It stated this risks further widening the global vaccine divide and exacerbating the inequities we have already seen in the distribution of COVID-19 vaccines. The COVAX statement also noted that moves to prioritise one vaccine over another for international travel were already undermining the confidence in life-saving vaccines already shown to be safe and effective, affecting uptake of vaccines and potentially putting lives at risk.

Unintended risks

Vaccination certificate schemes could have unintended consequences that risk public health

50. In assessing the benefits of ascertaining the vaccination status of inbound travellers, any potential unintended public health consequences also need to be considered.

51. Where vaccination certificates are a condition of certain entitlements, such as being granted an entry visa or being exempt from testing or MIQ requirements, the credential itself can become a valuable commodity. This may increase the risk of falsification or fraud. Depending on what other measures are wrapped around an inbound traveller (such as pre-departure testing or testing on arrival), there is the potential that a non-vaccinated person using a falsified credential could unwittingly import the virus and transmit COVID-19 to unvaccinated or vulnerable people.

52. While on one hand, benefits associated with a vaccination certificate could incentivise more people to receive a vaccine, it could also mean that some individuals may be less willing to disclose their medical history and (potential) contraindications which could increase the risk of adverse events.

53. Further, if the scope and use of vaccination certificates are not clearly defined, there is a risk that they could be used for purposes other than those originally intended, such as by third parties (e.g. commercial entities, insurance companies), which could lead to a distrust in the health system, the government's COVID-19 response or to vaccine hesitancy.

There is a need to be clear about the intended uses for a vaccination certificate

54. The WHO recommends that members states set out clear and specific policies, and laws if needed, on the limits to legitimate uses of a vaccination certificate. It states that use of vaccination certificates to restrict the right to freedom to movement and other human rights is only justified when it supports the pursuit of a legitimate aim during a public health emergency and is provided for by law, is proportionate, of limited duration, based on scientific evidence, and not imposed in an arbitrary, unreasonable or discriminatory manner.

55. Separate to international travel, some jurisdictions have introduced policies to require proof of vaccination to enter specified public venues and settings, such as museums, cinemas, and indoor events. There are significant ethical, legal, equity and public health considerations regarding limiting access to public settings based on vaccination status that are not covered in this briefing.

A disproportionate focus on individual vaccination status could underplay the importance of collective effort

56. A further concern that has been raised is that a focus on individual proof of vaccination may underemphasise the collective nature of the challenge. It risks treating a collective problem as an individual one, and inadvertently suggests a binary certainty whereby holders of trusted certificates are 'safe', and those without are 'risky'. Ultimately it will be national and international vaccination population coverage that will offer greater protection.

Trust in the credential

How can we have confidence in the authenticity of a vaccination certificates

57. At present there are numerous formats being issued internationally, many of which are paper based, have no security features and are not able to be digitally verified. Until international standards are adopted more widely, this variability will present significant challenges for verifying vaccination status of international travellers into New Zealand.

58. The authenticity of a vaccination certificate may be less imperative for countries where the incidence of community transmission is still relatively high. For countries that have a low level of risk tolerance for COVID-19 entering across the border the need for confidence in the vaccination credential is much greater.

59. Key considerations for easing the border rules for vaccinated travellers should include our degree of confidence:

    a. in the authenticity of the vaccination certificate

    b. that the bearer of the certificate was the person who received the vaccination

    c. that the vaccine the person received meets our standards of efficacy.

60. Customs officials are working on a system that will include a pre-travel health declaration to collect information necessary for border agencies to process arriving travellers according to the level of COVID-19 risk.

61. Ideally, COVID-19 health credentials (such as vaccination or test certificates) would be verified digitally prior to travel, as the manual assessment of vaccination credentials is not only resource intensive but slows passenger flow through airports. Manual assessment also relies on subjective verification that is open to variability.

62. Digital verification of a test or vaccination certificate would involve scanning the QR code. This would reveal who the certificate is issued to, details around the test result or vaccine doses administered, along with a cryptographic digital signature confirming that the certificate was issued by a trusted entity. This ensures the information remains secure and provides confidence that the credential is authentic and has not been tampered with.

Setting vaccination standards for inbound travellers

63. In parallel to the policy work on future health settings for Reconnecting New Zealanders, officials are working through a process to determine:

    a. which vaccines might we recognise for inbound travellers?

    b. what "fully vaccinated" means (i.e. number doses, dose intervals, and period of time before travel)?

    c. what form of proof we might accept?

64. The Ministry of Health has commenced work with Medsafe and the COVID-19 Vaccine Science and Technical Advisory Group (CV-TAG) on vaccination standards for inbound travellers. Given the evolving evidence, technology and epidemiological situation, any standards New Zealand adopted would need regular review.

65. Once minimum standards are agreed, a process for agreeing which certificates are recognised need to be progressed. It is likely this will involve country-to-country mutual recognition agreements as well as broader reciprocity agreements through international bodies like ICAO or the EU.

66. New Zealand is in discussions with the EU (along with other 30 non-EU countries) about joining the EUDCC scheme. Being accepted as a 'third country' to the EUDCC scheme would allow us to recognise and have high confidence in the vaccination certificates issued by countries in the EUDCC scheme and, in turn New Zealand-issued certificates would be recognised by those countries who have joined the scheme.

67. We envisage mutual recognition agreements wouldn't require reciprocity of border settings. It is likely that New Zealand will require higher standards of entry from some mutual recognition agreement partner countries than would be required for New Zealanders to travel there.

68. New Zealand officials are in regular discussion with Australian counterparts on COVID-19 vaccination certificates. Australia is also developing a digital vaccination certificate which we understand is expected to be available to people vaccinated in Australia around October this year. We will continue to engage with Australia with the aim of mutual recognition of each other's digital COVID-19 certificates.

Equity

69. Criteria to guide the approach to COVID-19 vaccination certification in New Zealand includes the following equity considerations:

    a. vaccination certification will not increase health or other inequities, either domestically or globally

    b. everyone has the right to obtain and hold an authentic credential that documents their vaccination status.

70. While requiring inbound travellers to provide valid proof of their vaccination status may support efforts to reduce the risk of COVID-19 being introduced through the border, this requirement could risk exacerbating health inequities in the following ways:

    a. some populations may be disproportionately less likely to have an opportunity to be vaccinated and obtain a valid vaccination certificate

    b. vaccinated individuals with geographical, financial or disability barriers may also be excluded from obtaining and using a digital vaccination certificate depending on the administration process, cost and design

    c. vaccinated individuals from countries without the infrastructure to issue suitable vaccination certificates may be disproportionately impacted.

Next steps

71. The Reconnecting New Zealanders work programme is considering matters related to proof of vaccination as part of a risk-based approach to reconnection. Further public health advice on settings for entry pathways is being prepared for the Reconnecting New Zealand Ministerial Group for late August 2021.

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