Te Kāwanatanga o Aotearoa
New Zealand Government

MANATŪ HAUORA
MINISTRY OF HEALTH

Minister of Health

Measles Outbreak Preparedness

31 October 2024

These documents have been proactively released by the Ministry of Health on behalf of the Minister of Health, Hon Dr Shane Reti.

Title of Cabinet paper:

- Measles Outbreak Preparedness

Titles of Cabinet minutes:

- Report of the Cabinet Social Outcomes Committee: Period Ended 24 May 2024 (CAB-24-MIN-0179)
- Measles Outbreak Preparedness (SOU-24-MIN-0043)

Titles of briefing and other documents:

- Briefing: Measles Epidemic Preparedness (H2024036756)
- Aide-Mémoire: Update on measles epidemic preparedness – "people, parts, and policies" (H2024039333)
- Briefing: Measles Epidemic Preparedness – draft Cabinet paper (H2024039982)
- Aide-Mémoire: Review of measles readiness assessment – report from local expert group (H2024043986)
- Aide-Mémoire: International assessment of New Zealand's measles epidemic readiness assessment (H2024045121)
- Aide-Mémoire: Progressing actions in response to external reviews of New Zealand's measles outbreak preparedness (H2024045125)

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Briefing

Measles Epidemic Preparedness

Date due to MO:	22 March 2024	**Action required by:**	N/A
Security level:	IN CONFIDENCE	**Health Report number:**	H2024036756
To:	Hon Dr Shane Reti, Minister of Health		
Consulted:	Health New Zealand: ☒ Māori Health Authority: ☒		

Contact for telephone discussion

Name	Position	Telephone
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Minister's office to complete:

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☐ See Minister's Notes	☐ Withdrawn	

Comment:

Measles Epidemic Preparedness

Security level:	IN CONFIDENCE	**Date:**	22 March 2024
To:	Hon Dr Shane Reti, Minister of Health		

Purpose of report

1. This briefing provides additional material following your request of 26 February 2024 for broader assurance that we have the necessary "people, policies and parts" to prevent and manage a measles outbreak in New Zealand.
2. This advice has been informed with input from Health New Zealand | Te Whatu Ora (Health NZ). Specifically, the National Public Health Service (NPHS), Hospital and Specialist Services, and the Commissioning Directorate. Te Aka Whai Ora | Māori Health Authority were also consulted.

Summary

3. In response to low measles vaccination rates, and recent importations of measles cases from overseas, you sought assurance regarding the readiness of the system to respond to a measles outbreak.
4. New Zealand is generally well prepared to respond to outbreaks of measles. However, a large and/or prolonged epidemic would create considerable pressure on our health system. Opportunities to strengthen key aspects of preparedness are identified, including priority areas for further action.
5. Despite our readiness to respond to measles, prevention of outbreaks through vaccination should remain a priority. This briefing also includes as appendices:
    - Appendix 1 – Measles Readiness Assessment
    - Appendix 2 – National Public Health Service Response Activities
    - Appendix 3 – Measles Priority Actions
    - Appendix 4 – Commentary on Baker et al. paper *Urgent action needed to prevent a measles epidemic in Aotearoa New Zealand*
    - Appendix 5 - A preliminary scenario model based on data from the 2019 measles epidemic.
6. We can provide you with further information on any matters raised in this briefing at your request.

Recommendations

We recommend you:

a) **Note** that: **Noted**

i. New Zealand remains at high risk of a measles outbreak due to low immunisation coverage

ii. a large outbreak would place considerable pressure on the health system's ability to respond and protect those most at risk

iii. measles is not a good candidate for wastewater testing to inform public health action

iv. you have requested commentary on the Baker et al report, *Urgent action needed to prevent a measles epidemic in Aotearoa New Zealand*. This is addressed throughout this paper and a summary is attached at **appendix 4.**

b) **Agree** to receiving further advice from the Ministry of Health on:

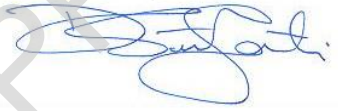
i. the Eligibility Direction review, including recommendations on scope and timing. **Yes / No**

ii. the role and functions of 2 advisory groups focused on measles preparedness:

- a measles outbreak technical advisory group -reviewing and guiding outbreak response decision-making, **Yes / No**
- a measles strategic oversight group – reviewing system preparedness and providing assurance that progress is being made against priority actions identified in this briefing. **Yes / No**

c) **Agree** to receiving further advice from the National Public Health Service within Health NZ on:

i. options to strengthen Māori and Pacific communities' preparedness and response to a measles outbreak. **Yes / No**



Dr Diana Sarfati

Director-General of Health

Te Tumu Whakarae mō te Hauora

Date: 22 March 2024

Hon Dr Shane Reti

Minister of Health

Date:

Measles Epidemic Preparedness

Context

New Zealand is vulnerable to a significant measles epidemic or multiple outbreaks[1]

Measles is one of the world's most contagious diseases and can have serious health consequences.

1. Measles is a highly contagious virus spread by infected droplets or aerosols. It frequently results in serious health impacts with up to 1 in 3 infected people developing complications such as ear infections, pneumonia, encephalitis, and immune suppression. The R_0 value of measles is between 12-18, meaning that an infected person will go on to infect 12-18 susceptible others on average. For context, the R_0 value for COVID-19, while variable by variant, is approximately 2.5.

but measles is highly preventable through vaccination, specifically with the Measles, Mumps and Rubella (MMR) vaccine.

2. The MMR vaccine is highly efficacious. Two doses are required for optimal measles control and elimination. The second dose is not a booster; it is given to increase vaccine efficacy from 95% to 99% by addressing primary vaccine failure.

3. Child immunisation coverage in New Zealand both on time at 12 and 15 months for MMR, and at the 2-year milestone is low; far beneath the 95% target required for herd immunity to maintain measles elimination, and to protect our youngest children who are most susceptible to severe disease and complications.

4. Immunisation coverage is especially low for our most vulnerable communities which include Māori, Pacific peoples, disabled peoples, and migrant communities.

5. The table below presents MMR coverage for children aged 1-17 years as at 14 March 2024. Coverage is calculated as children who have had all MMR vaccines, they are eligible for. For children aged 12-14 months, coverage is one dose of MMR, whereas for children aged 15 months and older, coverage is two doses of MMR. The denominator are all children recorded on the Aotearoa Immunisation Register (AIR).[2]

   Table 1: MMR coverage for children aged 1-17 years as at 14 March 2024.

Cohort	Māori	Pacific	Asian	Other	Total
1 – 4 years	69.0%	76.2%	86.7%	81.3%	79.3%
5 – 12 years	86.7%	88.0%	85.5%	87.7%	87.7%
13 – 17 years	88.5%	82.0%	72.0%	85.1%	84.1%

[1] **The terms epidemic and outbreak can be used interchangeably but this paper uses epidemic to describe a sustained increased in cases across more than one community.**

[2] **Coverage is lower for those aged 13-17 years across all ethnicities excluding Māori. This likely reflects missing data on the AIR (i.e., because the person has migrated to New Zealand and their immunisation records have not yet been entered into AIR), rather than lower immunisation coverage.**

6. Other age cohorts are also known to have low coverage. A sero-survey in 2014/15 identified that individuals born between 1980 and 1999 (currently aged 25 – 44 years) had low levels of measles immunity which ultimately led to the MMR catch-up campaign in 2020.

Māori and Pacific communities are most at risk of infection, hospitalisation, and mortality, and have been most impacted by past measles outbreaks.

7. Low vaccination rates coupled with the excessive burden of poverty and overcrowded housing experienced by Māori and Pacific peoples, barriers to quality health promotion and health services, and a lack of culturally appropriate care across the health system, makes these communities highly vulnerable to measles. Equity in vaccination coverage is achievable. Some former District Health Boards (e.g., Hawke's Bay) achieved close to equitable coverage prior to 2019. Targeted approaches to protect these communities is important if we are to achieve herd immunity.

8. There is also the risk of spread from New Zealand to the Pacific region as occurred with the 2019 measles outbreak.

Internationally, measles cases continue to rise,

9. The World Health Organization (WHO) Western Pacific Region (WPRO) recently reported an increase in reported measles cases (total confirmed and clinically compatible) from 1,421 in 2022 to 5,044 as of 20 January 2024 driven by recent large outbreaks, and sustained transmission in the Philippines and Malaysia.

10. Due to a decline in MMR vaccination globally, many traditionally measles free countries are reporting outbreaks and/or imported cases, including England, the United States and Australia.

and the resumption of pre-pandemic levels of international travel has led to increased border incursions.

11. Travel to and from high-risk countries will continue to pose a threat to the New Zealand community. New Zealand's public health response to measles has been tested to good effect since the beginning of 2023, with 7 incursions requiring varying degrees of response.

The most significant recent measles epidemic occurred in 2019, and since then our vaccination rates have dropped further.

12. In 2019, an overlapping series of measles outbreaks, predominantly in the Northern region, infected more than 2,000 people, and resulted in the hospitalisation of more than 700.

13. Previous advice from Health NZ (HNZ00036861 refers) noted that in light of our lower vaccination rates, an epidemic or series of outbreaks may be more severe than that experienced in 2019.

14. The 2019 epidemic predominantly affected young infants, particularly those under 2 years of age, followed by teenagers and young adults under the age of 30 years. This was, in part, a reflection of vaccination coverage, including a known issue with lower coverage for the second dose of MMR for a cohort aged 17 to 29 at that time (now 22 to 34).

Modelling can assist with preparations to give indications of likely magnitude of an epidemic and potential impacts on communities.

15. Among the age group most at risk of severe infection, a simple analysis of coverage data indicates that approximately 50,000 children aged 1-4 years are currently susceptible to measles infection with younger children (30,000 or more), especially those aged 6-11 months, also susceptible due to waning or absent maternal antibody protection.

16. It was estimated for a 2020 catch-up campaign that around 300,000 15–30-year-olds were not up to date with MMR vaccines, most of whom were not successfully reached by the campaign.

17. The Public Health Agency commissioned modelling from the Institute of Environmental Science and Research (ESR), which predicted (based on no uplift in current vaccination rates) a future outbreak to peak at 80-90 cases per week; and a 5% increase in vaccine coverage in one district (Counties-Manukau) to reduce the case count by about 50%. Reaching 95% coverage would reduce the peak by about 80%. The modelling is summarised at **Appendix 5.**

18. We are currently considering whether more detailed work is required, such as modelling the impact of focussing on increasing MMR-1 coverage for the older cohort described above.

Any epidemic will likely have sustained impact on the wider health system.

19. Any sustained epidemic of measles will impact on primary care, and hospital and specialist services, through increased presentations and hospitalisations. This will add further pressure to the health system, especially if outbreaks coincide with winter illness peaks or other significant health emergencies. As with any emergency, resources would likely need to be prioritised according to greatest need.

Role of expert advice in decision making

A Measles Clinical Technical Advisory Group exists to provide expert advice to support operational activities and overall management of an outbreak response.

20. You have sought advice on whether there is a need for a new expert advisory group or taskforce on measles. The NPHS first established a measles expert advisory group in 2022. The group undertook a comprehensive review of the public health management of measles and provided expert guidance on the response phases of the Measles Outbreak Response Plan and updates to the measles chapter of the Communicable Disease Control Manual.

21. In October 2023 the group expanded and refocused to form a Measles Clinical Technical Advisory Group (TAG) to support outbreak management during a measles response. The group is chaired by a public health physician from the NPHS Protection Group and includes a wide range of clinical and technical experts including public health, infectious diseases, epidemiology, vaccines, clinical microbiology, infection protection and control, laboratories, primary care, surveillance, intelligence, and Māori and Pacific health. It also includes representatives from the Public Health Agency.

22. The Measles Clinical TAG provides expert advice as required to support operational activities including case and contact management, testing, public communications, and vaccination. Additionally, the Measles Clinical TAG delivers independent advice across

medical, scientific, and epidemiological fields, directly supporting and shaping the response to the outbreak.

23. We are working with the NPHS to ensure the role, functions and membership remains fit for purpose.

Establishing a group focused on oversight of measles preparedness is an option to strengthen system-level stewardship.

24. In addition to the Measles Clinical TAG, there is a role for a group to provide system oversight and assurance for outbreak preparedness. This new group would be focused on providing strategic oversight of response planning, and providing assurance that progress is being made against priority actions.

25. We will provide separate advice on the form, function, and remit of a proposed outbreak system assurance group by the end of April. This advice will clarify the role of the Director of Public Health in response to both groups. In the interim, the Director General has included measles preparedness in the remit of her multi-agency Immunisation System Assurance Group.

Prevention remains the most effective approach to averting outbreaks

A 'wall of immunity' is required to protect all New Zealanders

26. Ultimately, improving MMR vaccination rates in New Zealand is the best way to protect our community from measles outbreaks.

27. The system must focus on both:

    a. achieving high, on-time, and equitable childhood vaccination rates as our youngest children are most vulnerable to the severe consequences of measles infection; and

    b. addressing 'pockets' of low vaccination coverage in older children and young adults with accessible immunisation options to achieve a 'wall of immunity' to stop ongoing transmission.

Pockets of low vaccination coverage increase risk to specific communities and our risk of outbreaks.

28. Current coverage data shows that there is a significant risk for tamariki Māori, particularly among those aged 1 to 4 years for whom coverage is more than 10% lower than the total population, and almost 30% below the target of 95%.

29. Regionally, Te Manawa Taki has the lowest MMR immunisation coverage among children aged 1 to 4 years at 71.6% overall and 62.2% for tamariki Māori. The Northern region is also at higher risk, at 76.5%, and 64.5% for the same groups respectively.

Gaps exist in our knowledge of older children and adults' measles immunity.

30. Individuals born in New Zealand prior to 1969 are considered immune due to the high likelihood of having been exposed to the measles virus prior to the roll-out of New Zealand's National Immunisation Programme.

31. Information on immunisation history is strongest for those born in New Zealand after the establishment of the National Immunisation Register (NIR) in 2005.

32. Anyone who is uncertain of their immunisation status should be encouraged to receive up to 2 MMR vaccine doses. This is currently free for everyone under 18 years of age

regardless of visa or citizenship status, and free for adults who are eligible for publicly funded healthcare.

Initiatives to increase childhood immunisation coverage are informed by the Immunisation Taskforce Report (2022).

33. There is a substantial level of activity to improve childhood immunisation coverage. You have recently received a briefing from Health NZ that detailed this work (HNZ00036634 *Update on Activities to Increase Uptake of Immunisations* refers). These activities include reviewing outbreak immunisation service delivery models, enhancing vaccinator workforce capability, strengthening new-born enrolment into primary care from birth, communication campaigns to address misinformation and improve trust in immunisation, and implementing a new immunisation governance structure.

34. The NPHS continues to explore other opportunities that could help increase community preparedness and population immunity. Where there are issues identified that need Ministerial action to resolve, we will provide advice and seek your decision.

Response Activities

When a case or outbreak is detected, the system mobilises to manage the threat to public health. Activity is undertaken to manage cases, contacts and ongoing transmission risk.

35. Response activities are complex, multi-faceted and shift according to the phase of measles response. **Appendix 2** is a matrix from the NPHS that summarises the core components of a response.

36. There are three phases of response:

    a. prepare (pre-response) – the impact of a measles outbreak is reduced through actions taken and the system is prepared to manage and support cases, contact and their whānau should a measles outbreak occur,

    b. stamp it out – intensive case management, contact tracing, source investigations and case finding to return to prevent transmission and return to a state of elimination,

    c. focused control – public health resources are prioritised to activities supporting outbreak control, with a focus on case management, high risk-exposure and increasing MMR coverage.

37. The decision to shift phases will be made centrally through an assessment of public health risk and resource capacity. The key decision makers will include the Director of Public Health, the Director and Clinical Director Protection, the Director Prevention and the public health service(s) affected, with advice from the measles clinical TAG.

Preparing to Respond

Underpinning any successful response is efficient, comprehensive, and well-socialised preparation across all aspects of the response.

38. Lessons from the COVID-19 response included the acknowledgment that our plans for respiratory virus pandemics were not sufficient and the response system, whilst ultimately successful, had to be established at pace and did not sufficiently address Te Tiriti obligations and consideration of impacts on equity from the start. In addition, the

measles outbreak in 2019 also showed that our preparation was not tailored sufficiently to support Māori and Pacific communities.

39. Preparation for a measles outbreak includes ensuring increased support for Māori and Pacific providers and communities, strengthening bespoke culturally appropriate health promotion, intelligence sharing and gathering at the local and national levels, and holistic and wraparound support. This includes establishing a process where Iwi Māori Partnership Boards (IMPB's) are included within the process and advise the system on equitable approaches that meet the needs of their communities.

Education sector

Previous outbreaks have had a significant impact on schools and school attendance.

40. Health and Education work together at all levels. At a local level, Public Health Services work with education settings to manage cases and contacts. Public Health Services work with Ministry of Education (MoE) regional offices and the MoE Directors of Education to ensure their protocols remain fit for purpose for the management of cases and contacts across local education settings. At the national level, the NPHS plans include specific resources and tools to support engagement within education settings, and the Ministry and Health NZ work with the MoE to develop and update public health messaging and advice.

41. Data sharing agreements have been set up to take on the functions envisaged by the Health (Immunisation) Regulations 1995, which require all early learning services and primary schools to keep an immunisation register of children attending their service or school. Matching data from the AIR against school rolls provides more accurate and up to date information than school immunisation registers to identify children at risk of measles and manage their attendance at school during an outbreak. However, further investigation is required on how best to ensure information is captured for any child who received childhood immunisations overseas.

Strong surveillance enables prompt action and the ability to track and adapt response

42. The Public Health Agency is set up to receive measles case and exposure notifications from overseas jurisdictions 7 days a week via the National Focal Point (NFP) system. We use this as part of our international surveillance approach which includes horizon scanning, undertaking threat assessments with ESR, and monitoring changes in global risks.

43. The NPHS is accustomed to producing regular surveillance reports on disease cases and contacts, including age, ethnicity, deprivation, geographic distribution, and trends over time. The NPHS has measles reporting templates to support a public health response. However, new IT systems are bedding in and are untested for a large response. An end-to-end simulation to test the system from data entry to reporting is under consideration.

Wastewater testing can be used in outbreak surveillance, but measles is not a good candidate.

44. Wastewater testing has 3 main functions – early warning of undetected infections, quantification of cases, and detection of genomic trends. Advice from ESR is that measles is not a good candidate for wastewater testing to inform public health action for the following reasons:

a. wastewater testing would not provide an early warning function due to low sensitivity of the test (a positive test would require a cluster of cases which likely would have been identified in the clinical setting),

b. the epidemic curve can be more reliably measured though the detection of symptomatic cases,

c. genomic data is less relevant for measles due to genetic stability.

Planning for increased vaccination demand

We have sufficient supply of MMR vaccines in New Zealand and are able to procure more at short notice.

45. In the event of an outbreak there would be a focus on prophylactic and ring vaccination[3] to exposed or possible contacts as well as targeted vaccination to communities at high risk. There is sufficient MMR vaccine supply including for the administration of a 'dose 0' on prescription, given during an outbreak to younger children. s 9(2)(b)(ii) [redacted]. During the 2019 outbreak monthly doses peaked at around 88,000.

46. s 9(2)(b)(ii) [redacted]

47. The ability to source sufficient vaccine at short notice may be a factor in our ability to respond in the case of sudden and ongoing high demand.

Readiness of core response activities

48. There are a number of core response activities led by the NPHS to support the wider sector and community management of the impacts of a measles outbreak.

A number of public health management tools are ready to support a response.

49. The measles chapter in the Communicable Disease Control Manual has been reviewed and updated. Also, national guidance for measles management, case and contact management charts, and translated resources are available on the Health NZ website.

50. The national measles 'HealthPathway' (online guidance for clinicians) has been reviewed and updated to ensure primary care clinicians have access to the information they need to identify, care for, and notify measles cases.

51. Further work is underway by the NPHS to ensure all necessary information is available and accessible for whānau.

Plans to support the Pacific community are in an advanced state.

52. The Pacific Public Health Directorate in NPHS, in partnership with the Ministry of Health's Pacific Health team, has developed and will roll out a Pacific National Emergency Communications Plan in relation to Outbreak, Emergency and Environmental Health

[3] **Prophylactic vaccination refers to vaccination of an exposed person whereas ring vaccination is a strategy used for contacts of contacts and/or individuals in a specific community or network such as a school, marae, church or suburb**

Disasters and Response. This Pacific Emergency Communications Plan is specifically tailored to meet the needs of at least the 9 largest Pacific communities to ensure timely, accessible, and culturally appropriate public health communications.

53. Currently the Pacific Health Directorate of Health NZ has s 9(2)(b)(ii) with Pacific providers for immunisations. Pacific providers in the areas with the lowest coverage data, will be communicated with, and advised to prioritise MMR immunisation, by the end of March 2024.

54. The Pacific Health Directorate will also partner with the NPHS to facilitate and commission community action approaches in the regions that target 90% immunisation coverage for Pacific Tamariki at 24 months by 30 June 2024. The NPHS will contribute s 9(2)(b)(ii) to support this. This work is currently being commissioned ready to roll out by the end of March 2024.

55. Increased efforts and additional resourcing are still needed to increase Pacific (and Māori) communities' preparedness and response in the event of a measles outbreak. Health NZ have offered to provide you with a further briefing on these matters should you wish.

PCR Testing and Serology Capacity is known but should be cross-checked against likely scenarios.

56. The NPHS is confident that the laboratory network will be able to meet the demand for timely PCR and serology testing. They have confirmed the ability to process approximately 1,280 PCR and 850 serology tests throughout the National Laboratory Network daily whilst maintaining test turnaround times appropriate for outbreak control. Surge capacity exists for up to around 2,360 PCR and 2,170 serology tests per day and the ability to use private laboratories to support additional testing needs where justified. In the event that capacity is exceeded, prioritisation criteria for testing will be developed by the measles TAG.

Infection Prevention and Control guidance is ready, and there are sufficient PPE stocks, but strengthened systems for documenting staff immunisation status would be beneficial.

57. Healthcare workers must be immune to measles to provide care, but at present there is no nationally consistent approach to the collection and storage of this information. Airborne precautions must be followed as part of Standard Precautions care. A positive measles case should wear a type IIR medical mask until appropriately housed in an airborne infection isolation room (AIIR).

58. There are sufficient supplies of PPE to meet the increased demands of managing a measles outbreak, with a minimum of 12-week high pandemic use level of stock maintained.

59. The NPHS operational plans for managing a measles case/outbreak include specific resources and tools to support engagement within education settings including advice on infection prevention and control measures.

However, a number of public health management tools require additional work to be fully ready to support a future response (activities and mitigations are included at ***appendix 1).***

Contact tracing preparedness has been tested, but the capacity to maintain a response may be a risk.

60. Preparedness for contact tracing was well tested in 2023 through 7 discrete responses to measles with 4 of them occurring at the same time as other significant public health

emergencies. However, the system has not been tested for multiple and/or ongoing outbreaks. This means that we do not have confident estimates for how long the strengthened NPHS system can remain in a sustained stamp it out phase before needing to move to a focussed control approach.

61. A small team is currently available through NPHS' National Investigation Service to support contact tracing activities, alongside public health services. The ability of the system to surge to undertake large scale contact tracing will be constrained by the workforce available to complete contact tracing tasks.

62. The establishment of the new national technology platform, the Notifiable Disease Management System (NDMS), greatly increases surge capacity by enabling all public health services to work on one system so that case and contact management can be delegated across a national workforce. The NDMS has additional features that improve efficiency and thereby increase capacity through automated contact monitoring that frees up calling capacity to focus on those at highest risk or those not digitally enabled.

63. At present there is no long-term agreement for out of hours national operational tasks to support contract tracing including creating exposure events, uploading large lists of contacts and making initial calls to contacts to confirm immunity status beyond provision for limited support until 30 June 2024. The provision of these support services, made available through time-limited funding, are currently unconfirmed beyond June 2024.

Wrap around support services including alternative accommodation are important to prevent financial and social hardship.

64. Isolation of cases and quarantine of non-immune contacts during the period that they may be infectious is vital for preventing and containing a measles outbreak.

65. Adhering to these public health measures can however lead to financial and social hardship, especially for low socioeconomic groups. Despite Public Health Services working with local providers to provide as much support as possible to individuals they are not resourced to provide income support or other compensation for other hardships incurred from following public health advice. This situation risks undermining efforts to control an outbreak. There are interim solutions in place through to 30 June 2024 to access short-term manaaki support through the Ministry for Social Development (MSD) Community Connectors but no clear pathway beyond this date.

66. Developing a new mechanism for financial support to people affected by public health instructions would be a significant policy shift and is likely best undertaken at a broad policy level, rather than in response to a specific disease or outbreak.

67. In some situations, it may be necessary to provide accommodation supports if a person lacks secure housing or cannot safely isolate at home without risk to other family members. Accommodation supports are not included in the Ministry of Social Development Community Connectors support and there are currently no agreements or memorandums of understanding with other agencies to address this gap. There is some, but limited, ability for the NPHS to provide alternative accommodation, especially if a large epidemic occurred.

68. Advice is being prepared for your consideration on the National Quarantine Strategy, and the National Quarantine Capability (NQC) work programme as part of the broader pandemic preparedness work programme.

Protective options are needed for those at high risk of severe disease and work is required.

69. Immunoglobulin can be administered to contacts at high-risk of severe disease to boost immunity. Immunoglobulin must be prescribed by a doctor and accessed via the New Zealand Blood Service (NZBS). There are inconsistent delivery arrangements of immunoglobulin to high-risk contacts across the motu, and further work is required to establish delivery pathways. Currently there are 411 vials in stock across the country which would be enough for about 140 adults or 400 infants.

The wider health sector has a critical role in measles response and must also be prepared

Primary care remains the first point of entry to the health system for the majority of New Zealanders and is already under pressure.

70. Primary care plays a pivotal role in outbreak response. It is the setting where most childhood immunisations are provided and is also the setting where most measles cases will be diagnosed and treated.

71. General Practitioners (GPs) are aware of the risk of measles in New Zealand, and the need to notify the local Medical Officer of Health on suspicion. GPs have access to best practice information via HealthPathways including advice on infection control and patient flow.

72. However, ongoing challenges in the primary care sector may impact on the ability to respond to a measles outbreak, especially the loss of GPs and general practice nurses. Discussions between the NPHS and the Commissioning Directorates in Health NZ continuing to ensure measles cases, suspected cases and contacts are able to access primary care services. These discussions include consideration of continued free access when a case or contact is directed by a Public Health Service to primary care for a consultation, test or evidence of vaccination.

73. The national primary care team within Commissioning is now well linked into outbreak responses as they are stood up, and regional roles have connections with local GPs, but a means of consistently reaching all primary care clinicians remains a challenge. Virtual consultations are and will continue to be available, although with variation across the motu.

74. Further work needs to be undertaken to understand preparedness of other primary care providers such as Hauora Māori, Pasifika and pharmacy sectors.

75. Primary Health Organisations are likely to have a role. This could be explored further.

Measles outbreaks in New Zealand have resulted in high numbers of hospitalisations and more planning is required in this area.

76. It is likely that a measles outbreak would result in a high number of hospitalisations and expected modelling will assist with predicting the magnitude. Although measles usually results in around 10% of cases being hospitalised, the 2019 outbreak in New Zealand resulted in around 35% being hospitalised due to the high proportion of cases that were children aged 0 – 4 years.

77. This level of hospitalisation can affect other hospital services. High rates of people coming to emergency department (ED) and paediatric services can overwhelm a system, impact on the ability to maintain infection control practices, and pose heightened risk to

other hospital patients. Paediatrics, including Paediatric Intensive Care, like other specialities in the health system, is already impacted by shortages of workers which would be exacerbated further in an outbreak situation.

78. Hospitals, districts, and regions have escalation plans in place to manage periods of higher than normal or unanticipated volumes of people requiring assessment and hospitalisation. The escalation plans enable clinical and operational decision-making that ensures there are sufficient clinical areas for higher than usual volumes requiring isolation.

Managing health at the border in the context of a measles response

The border remains a critical barrier to protect both from import and export of infection.

79. Standard health messaging is in place at Auckland, Wellington, Christchurch, and Queenstown international airports advising inbound travellers to contact Healthline if they become unwell anytime within 30 days of arrival. The standard messaging states *"Free health advice, 24/7. If you feel unwell while in New Zealand, call Healthline to discuss your symptoms with a health professional."* Measles-specific messaging has been prepared for use if the national or international situation changes.

80. Agreed processes and triggers for making changes to border measures, even when public health threat levels are low, are necessary to ensure swift action. The NPHS will undertake a review to confirm these are in place and fit for purpose.

81. Border agency frontline personnel are at greater risk of being exposed to measles given their interactions with international travellers. This workforce regularly receives messaging on the importance of MMR immunisation through measles border advisories, and engagement at local and national border sector meetings.

82. The info.health.nz website provides measles-specific messaging for travellers and advises people to make sure they are fully immunised against measles before they go overseas. The 'Safe Travel' website can also provide measles specific messaging to travellers and action is underway to update the content to reflect current advice.

83. Further work could be undertaken to develop ways to ensure travellers to New Zealand, including students and temporary workers, are aware of the need to check their immunisation status prior to travel.

The New Zealand Traveller Declaration (NZTD) supports our public health management approach.

84. The digital New Zealand Traveller Declaration (NZTD) is a voluntary tool that was introduced by Customs in mid-2023 to replace the paper arrival card at the border, and to support contact tracing efforts. The NZTD also provides a mechanism for providing information to travellers arriving from, or declaring travel to, high-risk countries, noting that there is no legislative mandate to support or require health screening and/or vaccination on arrival.

85. Currently, about 30% of declarations are made digitally using the tool, leaving 70% still completed in paper form and requiring manual processing. Customs has a planned programme of work to support increasing the use of the tool to 70% by December 2024. In the meantime, existing memorandums of understanding with Customs and other organisations (e.g., airlines) are used to expedite the sourcing of contact details of travellers and flight manifestos to identify contacts.

86. New Zealand has systems and processes in place, including memorandums of understanding with other government agencies, to obtain contact details and ensure the contacts are referred to their local public health service for assessment and management. A future review of legislation is being planned for under the Strategic Approach to Health at the Border programme (under the Border Executive Board) which may strengthen this area.

New Zealand also has a responsibility to prevent the export of measles to our Pacific neighbours and the wider global community

87. New Zealand's measles preparedness must consider and manage risk for the Pacific region, as well as contribute to preparedness activities. The Polynesian Health Corridor programme, based in the Ministry of Health and funded by the Ministry for Foreign Affairs and Trade, leads New Zealand's support to the region's health development. Activities are focused on improving access to immunisation, vaccination coverage and strengthening disease surveillance and diagnostics. They are also well placed to support the development of an agreed approach to managing the border in the event of an outbreak.

88. Legal mechanisms are in place to ensure that individuals subject to directions or orders to isolate or quarantine can be prevented from travel.

Eligibility for free or subsidised health services

The Health and Disability Services Eligibility Direction 2011

89. The Health and Disability Services Eligibility Direction 2011 (the Direction) describes the groups of people who are eligible for free or subsidised health and disability services (including vaccinations) in New Zealand. Under the Direction, there are some groups of people who are not eligible for publicly funded health services who are at risk of measles, such as Recognised Seasonal Employer (RSE) scheme workers, some international students, and some foreign nationals.

90. The Ministry commenced review of the Direction last year, as required by the Crown Entities Act 2004, to be done every 5 years.

91. The review aims to ensure that the Direction is fit for purpose and aligns with current Government priorities, health legislation, immigration settings and international commitments.

92. Any changes to the Direction that extend eligibility to certain groups of people (e.g., to provide for population-level communicable disease prevention) will have fiscal implications and would need to be considered through Budget processes. This would also require consideration of wider system-level implications, such as additional pressures on health services and workforces. Changes will also require Cabinet approval.

93. The Ministry of Health will provide you with further advice on the Direction review, including recommendations on scope and timing.

System Gaps and Risks

94. Whilst many components of the system are well placed to prevent, prepare and respond to measles, there are gaps and associated risks with these. Part of the Ministry's role is to

highlight when aspects of the system are not working well, and work in partnership with our cross-agency colleagues to successfully remediate these.

95. A detailed system assurance framework, organised by parts, people and policies is attached as **Appendix 1** and a series of gaps and identified actions for agencies is attached as **Appendix 3.**

With any decisions there are financial implications to consider

96. Each of these policy responses would have financial implications to implement. We can provide further advice on financial implications, depending on any policy decisions progressed.

ENDS.

Appendices

Appendix 1 – Measles Readiness Assessment

Appendix 2 – National Public Health Service Response Activities

Addendum: Appendix 2 released as an appendix to the relevant Cabinet paper.

Appendix 3 – Measles Priority Actions

Appendix 4 – Commentary on Baker et al. paper *Urgent action needed to prevent a measles epidemic in Aotearoa New Zealand*

Appendix 5: A preliminary scenario model based on data from the 2019 measles epidemic

1. This modelling was commissioned to help begin to characterise the magnitude of a potential outbreak of measles. The models characterised the impact of 4 vaccination scenarios in 2 cohorts (i.e., the total District Health Board (DHB) population and Māori and Pacific peoples only), for a total of 8 scenarios. The vaccination scenarios were the following increases of +2%, +5%, +10% over current coverage levels, and reaching the 95% target level. Given the timeframe and complexity of the question, the initial modelling focused on characterising a potential outbreak in one region, the former Counties Manakau DHB (CMDHB) with some simplifying assumptions. Further refinements and question will likely need to be answered in follow-up work, e.g., to model a national outbreak.

2. This model is regional, in the sense that it aims to describe potential outbreak in CMDHB region and is not a national model. It does not consider several outbreaks occurring at the same time or a national epidemic.

3. Another important caveat and focus for next steps are gaps in the immunisation data that are used to build the model. For instance, the current model is developed from national coverage data in various age and ethnicity subgroups, rather than region-specific immunization records (although that may be possible to update for the next round). In addition, the immigration-related immunization data is unreliable (i.e., missing data for children who immigrate at older ages), which tends to underestimate coverage for children with Asian ethnicity. Note also that the current model assumes that individuals born before 1969 are considered "fully immunized" due to likely measles exposure, but this doesn't account for those not exposed previously or the potential for waning immunity in the elderly.

4. Other assumptions include vaccination is simplified as a binary choice (i.e., fully vaccinated, yes or no), and outbreak control measures such as quarantine, school closure, and social distancing are not currently incorporated into this model.

5. The results indicated that even small improvements in coverage had substantial impact on the number of cases, both for worst case scenarios and central scenarios. Improvements in coverage also bring the peaks forward 1-2 weeks sooner, compared to current coverage levels. For most scenarios, focussing on an uplift in coverage to Māori and Pacific communities alone, is associated with similar gains to uplifting coverage for the total population, but for fewer total numbers of vaccinations.

6. Specifically, the results indicated that:

    a. Based on previous outbreaks and current vaccination coverage, the model would expect an outbreak to peak at about 80-90 cases a week. Worst case scenarios estimate a peak of around 130 cases per week.

    b. Improving coverage by +5% overall in CMDHB, is estimated to reduce the weekly case count in the most likely scenarios (middle scenarios) by about 50%, and worst-case scenarios by about 60%. Reaching 95% coverage, reduces the peak by about 80%.

    c. If the uplift in coverage is delivered successfully to Māori and Pacific communities alone, a +5% increase reduces the peak by about 40%. Reaching the 95% coverage

in Māori and Pacific peoples alone, reduces the peak by about 60-70%, lower than if target-levels of coverage are reached for all.

d. In the short term, focusing an uplift on Māori and Pacific communities may result in the biggest gains for fewer total vaccinations, but in the long-term the 95% target needs to be reached overall to prevent outbreaks in the region.

Minister's Notes

Appendix 1 *(1 of 4)*
Measles Readiness Assessment: People, Parts and Policies

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment					
		People		Parts		Policy	
Governance, technical advice and leadership	• The planning process and response plans are compliant with Te Tiriti obligations • There are agreed roles and responsibilities (including decision-making process) across the health agencies and into other connected areas of Government. • Planners and decision-makers have access to experts • Readiness and response plans have been reviewed by experts • Plans prioritise protecting vulnerable populations and address prior review findings		• Strong Māori and Pacific leadership are in place across the health agencies and connected into measles preparedness work. • Experienced public health clinicians and emergency management teams in place in both the Public Health Agency and National Public Health Service • Clinical Technical Advisory Group exists– membership and TOR under review to assess fit with Te Tiriti compliance and focus on system preparedness • Some engagement is occurring with teams/sectors outside of public health, but response preparedness would benefit from strengthened whole of system leadership including community representation		• Accountabilities framework work is underway to clarify roles and responsibilities • Some established systems including connections to the broader sector have been disrupted by ongoing health reforms and are in a rebuilding phase • Clarity of roles and responsibilities for both the escalation and de-escalation through response phases is being confirmed • A national measles public health outbreak response plan exists ready for review by a preparedness focussed advisory group • Need to establish a process where Iwi Māori Partnership Boards are included within the process and advise the system on equitable approaches that meet the needs of their communities		
Surveillance	• Systems in place to monitor the international measles situation • Effective system for timely notification of travellers to NZ who have been exposed to measles • Health care workers have been reminded of when and how to notify suspected measles cases • All laboratories have SOPs for notifying positive cases		• Dedicated roles/roster for monitoring and responding to National Focal Point notifications 7d/week • PHA, NPHS and ESR have staff with responsibilities for monitoring domestic and international situation.		• National Focal Point system in place to receive and send measles notifications internationally • Direct Laboratory Notification of Measles in place for positive tests to ESR from diagnostic Laboratories • Clinicians are aware of measles risk and have access to up-to-date best practice advice including requirement to notify • ESR routinely reviews and report international surveillance intelligence		
Border	• All reasonable steps have been taken to limit chance of/impact from measles infected person arriving from overseas • There is an agreed plan on how to protect Pacific countries should a NZ have a measles case/outbreak		• PHA and NPHS Border teams/roles in place and are connected into Border Executive Board and agencies such as Customs and Immigration. • Polynesian Health Corridors and Global Health teams are well established		• General health advice in place at major NZ airports. Measles-specific messaging is ready to go • Pro-active follow up of affected flights into Australia for NZ bound travellers • Foreign language schools engaged with by NPHS to strongly advise students to get vaccinated before departure • NPHS engagement has occurred with MBIE on vaccination status of temporary workers		• Medical Officers of Health can direct a person to refrain from travelling outside of NZ. Sharing this information with a border agency or airline would need to be assessed for each case be would likely be justified in terms of the health information privacy code • No existing policy mandating that travellers (incoming and outgoing) must have their vaccinations up to date.

Red Risk identified that needs priority action and/or decision
Amber Some identified gaps or unknown vulnerabilities requiring targeted action
Green No concerns identified regarding preparedness
Grey No action planned presently

Te Pou Hauora Tūmatanui Public Health Agency

MANATŪ HAUORA MINISTRY OF HEALTH

Appendix 1 *(2 of 4)*
Measles Readiness Assessment: People, Parts and Policies

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment		
		People	Parts	Policy
Case and contact investigation and management	• Clear mechanisms established to stand up effective contact tracing in the short (first days) and medium (weeks) terms • Plans in place for managing surge capacity • Logistical means to isolate and support contacts and cases in place	• Increased public health surge capacity through establishment of the National Public Health Service • Further work is required to better understand surge workforce capacity across the response phases • Small national investigation service team in place to support activities • An agreement that provides outsourced out of hours surge capacity for operational tasks related to contact management ends in June 2024	• CDC Manual recently refreshed and up to date along with documents such as case/control management available • The new national Notifiable Diseases Management System is in place to enable national collaboration but is still bedding in. • Digital New Zealand Traveller Declaration (NZTD) available for contact tracing for travellers, but low use to date • The level of available immunoglobulin is insufficient for a large outbreak and further work is needed to confirm national access and delivery pathways	• Case isolation and contact quarantine requirements are voluntary. Mandatory requirements can only be made on an individual basis • There is a gap in operational capability to provide, at short-notice, wrap around support to individuals and groups to enable them to safely and effective isolate/quarantine when required.
Immunisation approach	• Focussed on most vulnerable to serious illness/sequelae • Focussed on those most likely to reduce size of outbreak (under-vaccinated populations) • Sufficient vaccine supply and means of re-distribution • Accessible services • Community-led prevention and outbreak response programmes supported • Workforce available for vaccination surge during outbreak	• Various Immunisation Taskforce recommendations are underway to support expansion of vaccinator workforce, including plans to simplify authorisation process • The existing vaccinator workforce continues to grow with the addition of pharmacy for MMR and could be deployed to assist with surge capacity	• Hauora Māori providers have received additional funding for immunisation activities • Aotearoa Immunisation Register (AIR) has been stood up but requires further development. • Data is available with details for most children who are overdue but not all children are captured, and AIR may not hold this information for older age cohorts • NPHS have confirmed there is sufficient stock of measles vaccine and rapid procurement of further stock possible if required • Good visibility and management of MMR stock across pharmacy via the Inventory Portal established for COVID-19 but GPs use the Pharmac stock management system which doesn't provide visibility of stock on hand once it is distributed to provider sites	• Current eligibility direction does not allow all measles susceptible individuals to receive free MMRs (e.g. seasonal workers, temporary residents aged over 18 years old) • s 9(2)(f)(iv) [redacted]

Appendix 1 *(3 of 4)*
Measles Readiness Assessment: People, Parts and Policies

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment			
		People	Parts	Policy	
Intelligence	• Effective systems for gathering information in place • Effective systems for distributing information in place • Intelligence is available to inform prevention and preparation activities • Planning and preparation has occurred in anticipation of intelligence needs should an outbreak occur	• Resources are available within NPHS, PHA and ESR to gather and generate intelligence.	• Measles case and contact data is available through EpiSurv and NDMS • The reporting functionality for data out of AIR and NDMS is not streamlined for automated reporting • Roles and responsibilities for commissioning and developing intelligence are not yet harmonised post health reforms • Initial modelling completed and need for more being considered • Report templates exist from prior outbreaks that will be re-used in the event measles outbreak • Plans exist to undertake an end-to-end simulation across measles from data entry to report • It is a challenge to maintain up-to-date distribution lists, especially in an evolving health structure	Immunisation data sharing agreements between Ministry of Education and HNZ in place for the purpose of enabling the provision of information to HNZ and statutory public health officers to assist the mitigation of an infectious disease outbreak Immunisation regulations provide for early childhood centres and primary schools to keep immunisation registers. These are potentially redundant given AIR
Laboratory testing and network	• Capability, capacity and networks exists to provide timely measles-related testing (PCR and serology) for case detection, contact management and effective outbreak control • Reporting systems in place	• NPHS is confident that both measles PCR and serology testing capacity is sufficient within existing contracted laboratories • Option exists to prioritise individual tests for processing and to engage additional laboratories for extra surge capacity	• Usually test turnaround times will meet requirements • There are sufficient laboratory supplies to support testing for an outbreak • All laboratories have systems for timely reporting of PCR results to Public Health Services • Modelling of outbreak scenarios and /or comparison with demand in prior incursions are needed to enhance confidence in evaluating capacity readiness	• Privacy Impact Assessment is underway to enable access to serology results in a delegated model
Infection Prevention and Control	• IPC guidance and expert advice is available and accessible • Providers can quickly access immune status of workforce • Health care workers are equipped to manage infection risk from measles cases • Systems are in place to effectively triage and isolate arriving patients in Airbourne Infection Isolation Room (AIIR)	• Infection Prevention and Control advice is now provided through limited resource in the Chief Clinical Officer's Team rather than a specialist team as occurred during COVID-19	• There are sufficient supplies of Personal Protective Equipment (PPE) for a measles outbreak via the national reserves stockpile • There is a need to better understand hospital capacity to ensure timely placement of patients in AIIR and contingency plans in place if AIIR capacity is exceeded • Accessible and robust guidance exists from IPC to manage measles risk within healthcare settings • General practice may have limited capacity for isolation	• Mask use requirements are governed by health and safety policy rather than legislation

Appendix 1 *(4 of 4)*
Measles Readiness Assessment: People, Parts and Policies

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment					
		People		**Parts**		**Policy**	
Primary care	• Primary care clinicians have easy access to best practice information • Workforce available to support prevention immunisation activities and surge during outbreak • Workforce available to support increased volume of consultations during an outbreak • Means in place for supporting routine (non-measles related) primary care during an outbreak • Transmission reduction mechanisms in place	• Within General Practice capacity is already constrained with shortages of both doctors and nurses • There is limited information on surge capacity for across all types of primary care services		• Up to date best practice information for measles is available via Health Pathways. • Virtual consultations will continue to be available • There are no systems that can ensure communications will reach all clinicians		• Funding to enable free access to consultations or testing for suspected cases or contacts when referred by Public Health Services is in place until 30 June 2024 with work is underway to extend this funding beyond the end of June.	
Hospital and Specialist Services	• Isolation plans and facilities available with sufficient capacity • Plans in place for managing unknown numbers of seriously ill children (including potential transport of infectious individuals) • Immunity of staff has been confirmed and documented, with documentation readily available on short notice • Plans are in place to manage infection risk in Emergency Departments	• Limited information is currently available on workforce surge capacity for hospital services including PICU • Many specialties including Paediatrics are already impacted by workforce shortages • Documentation of staff immunity can vary and is not always readily available		• Hospitals have escalation plans to manage higher than normal volumes of people requiring assessment and/or hospitalisation • Modelling and/or comparison with demand in prior incursions may help inform confidence in preparedness and what additional actions need to be taken			
Public Information Management	• Clear allocation of responsibilities • Support available for rapid production of accurate and reliable information for the public (situation updates, disease information, and "what you need to do")	• Staff with communications expertise are available within NPHS Protection, NPHS Promotion and the PHA • Predicting the exact information and the necessary translations to address all potential outbreak scenarios is not feasible		• Templates for letters and other resources are prepared • Translated resources are available on the Te Whatu Ora website • The Pacific Public Health Directorate have developed and will roll out a Pacific specific National Emergency Communications Plan		• Clarification is needed on where the public spokesperson role would sit for the various outbreak scenarios e.g. national vs local	
Other Government Agencies and sectors	• Clear roles and responsibilities • Effective communication and relationships between agencies • Mechanisms in place for health sector to support other agencies, including technical advice and communication resources	• NPHS has good working relationships with border staff • Health and Education work together at all levels: national, regional and local • Links with other sectors could be strengthened		• NPHS has specific resources to support educational settings including advice on infection prevention and control • NPHS could provide advice to schools to also collect robust information on immunisation status of staff and encourage MMR vaccination if not up to date • NPHS will continue to engage with MBIE re temporary workers		• Consider options for robust documentation of immunisation status of older students who did not receive childhood immunisation in New Zealand	

Appendix 3
Measles Priority Actions Framework

Prioritisation	Identified risk or gap	Actions underway to address or mitigate	Responsible Agency/Directorate
Highest Priority	Low MMR coverage rates and especially low rates among Māori and Pacific children	Many actions are already underway by NPHS including the recommendations from the Taskforce. Additional options are being considered.	National Public Health Service
	Existing measles clinical technical advisory group may not have the right membership to ensure system wide measles preparedness	Review membership and terms of reference for existing Clinical TAG to ensure fit for purpose Establish outbreak preparedness group to provide strategic oversight and assurance Prepare further ministerial advice on form, function, remit of both groups	Public Health Agency & National Public Health Service
	There is a gap in operational capability to provide, at short-notice, wrap around support to individuals and groups to enable them to safely and effective isolate/quarantine when required.	A briefing on options for the future of the National Quarantine Capability work is being developed	Public Health Agency & National Public Health Service
	Iwi Māori Partnership Boards (IMPBs) have not had the ability to advise that approaches will meet the needs of their communities	Establish process whereby IMPBs can advise the system on equitable approaches that will meet the need of their communities	National Public Health Service
	There is no means by which adult temporary residents/visitors to New Zealand can receive free MMR vaccine without themselves being a contact of a case.	Advice to Minister on options to address this risk is being prepared	Ministry of Health
	Formal surge plans are not yet available, but the new NPHS operating model and enabling technology has provided surge capacity for the recent measles incursions. This is a significant advance on where Public Health Services were in 2019.	As part of this preparedness assessment connections with relevant teams have been strengthened and work continues to better understand surge response capabilities across the system. Modelling is critical to inform this work and is underway (see below). NPHS is also establishing 24/7 national on-call rosters within NPHS for all critical functions.	National Public Health Service
	Further clarification of roles and responsibilities for clinical leadership and decision-making for the response is required, including for both the escalation and de-escalation through response phases and in relation to local vs national decision-making ability.	Progress work to finalise accountabilities framework for Public Health Clinical Leadership, Surveillance and Outbreak Management across the health agencies.	Public Health Agency & National Public Health Service
Medium Priority	Detailed modelling of potential outbreak scenarios is not yet available.	Initial limited modelling has been received; commissioning of more detailed analyses is being considered.	Public Health Agency
	There is missing information on immunisation status for children who received childhood immunisations overseas, which impacts on timely quarantine decisions	Consider options for robust documentation of immunisation status of children who received childhood immunisations overseas Prepare a summary for the Minister on the role and regulatory framework of immunisation registers in ECEs and school	National Public Health Service & Public Health Agency
	The digital tools we rely on, such as AIR and NDMS, to collect and report both immunisation and measles case and contact information have recently been undergoing major change and are still being bedded in.	An end-to-end simulation across measles from data entry to report is being explored	National Public Health Service
	Challenges in immunoglobulin access include uncertainty about stock quantity necessary for outbreak preparedness and inconsistent delivery across the country to contacts at high risk of severe disease.	Work should be undertaken to understand likely demand for immunoglobulin in an outbreak and to develop consistent approaches to delivery across the country.	National Public Health Service
	Time limited funding currently in place to cover Primary Care costs for cases and contacts, preventing costs from being passed to patients, is due to end 30 June 2024.	Work is underway to explore extending this funding beyond 1 July 2024	National Public Health Service & Commissioning (Health NZ)
	There is no systematic approach for recommending pre-departure vaccination and/or need to bring immunisation evidence for groups such as overseas students and temporary workers.	Work should be undertaken to enhance inter-agency coordination and sector engagement to ensure overseas students and temporary workers take action before entry into New Zealand.	Ministry of Health
Longer-Term Priorities	Ensuring communications in an outbreak consistent reach all Primary Care clinicians remains a challenge.	Work continues with the national primary care team to ensure relationships are fostered both nationally and locally.	National Public Health Service (Health NZ)
	Documentation of healthcare service staff immune status can vary and is not always readily available.	Consider engaging with occupational health teams locally on a systematic approach	Hospital and Specialist Services (Health NZ)

Appendix 4 – Ministry of Health Commentary on Baker et al, 22 February 2024

"Urgent action needed to prevent a measles epidemic in Aotearoa New Zealand", 22 February 2024, Michael Baker, Nikki Turner, Mamaeroa David, Amanda Kvalsvig, Oz Mansoor, Nick Wilson (link), published by the Public Health Communication Centre Aotearoa

Key recommendations in the paper	Ministry of Health Response and/or Comment
Reduce the risk of importing measles • Advise all travellers to New Zealand to check their measles vaccine status, bring documentation with them, and vaccinate prior if susceptible. • New Zealanders travelling overseas should check status and vaccinate prior to travel if susceptible • During outbreak exit screen travellers to Pacific, require evidence of measles vaccination – reduce transmission to Pacific Islands • Require migrants to be vaccinated for measles and enrolled in AIR • Wastewater test arriving aircraft	• Advising travellers to check vaccine status prior to departing New Zealand is done through the Safe Travel website and through community specific communications. NPHS periodically runs social media campaigns directed at reaching those planning to travel to countries with large outbreaks, recommending that they are up to date with vaccinations before travelling. • The need to work with Pacific countries to identify their desired approach at the border in the event of a significant outbreak is covered through the Polynesian Health Corridor programme. • Information on migrant children's immunisation status is often entered at point of contact with primary care. The ability to input retrospective data into AIR for other new migrants exists, however the resource required to undertake this means it is currently not feasible nor for all NZ-born cohorts prior to establishment of NIR. • Advice from ESR is that wastewater testing will not be helpful given current test limitations.

Address immunity gaps through catch-up immunisation for children and young adults with equity focus
• These strategies include:
  • supporting Māori-led immunisation programmes that engage with communities;
  • responding to misinformation/disinformation relating to vaccination;
  • improving use of the Aotearoa Immunisation Register (AIR) to track under-vaccination and support vaccine delivery; school-based delivery; and
  • considering incentives for providers and families
	• The NPHS Prevention Directorate is currently underway with addressing immunity gaps through catch up immunisation.

Continue work to raise coverage through the routine childhood immunisation programme An immunisation Taskforce produced a set of recommendations to lift childhood coverage focussed on the routine programme. Health Minister Dr Shane Reti has announced a $50 million investment in measures to raise vaccination rates with a priority focus for Māori	• Nil further to add
Prepare to manage outbreaks when they occur taking into account: Recommendations from the independent review of the response to the 2019 measles epidemic. Ventilation of crowded spaces such as schools and hospitals. Implementing an integrated respiratory infectious disease surveillance and control strategy	• This briefing highlights the preparedness of the system to manage outbreaks and has included recommendations from the independent review of the 2019 epidemic. • Indoor ventilation is an area of work that you have recently received advice on [H2024036633 refers]. • Some integrations are already in place and further progress towards an integrated respiratory infectious disease surveillance and control strategy will be supported through work already underway in the Public Health Knowledge and Surveillance System work programme.

Aide-Mémoire

Update on measles epidemic preparedness – "people, parts, and policies"

Date due to MO:	12 April 2024	**Action required by:**	N/A
Security level:	IN CONFIDENCE	**Health Report number:**	H2024039333
To:	Hon Dr Shane Reti, Minister of Health		
Consulted:	Health New Zealand: ☒		

Contact for telephone discussion

Name	Position	Telephone
Dr Andrew Old	Deputy Director-General, Public Health Agency – Te Pou Hauora Tūmatanui	s 9(2)(a)
Dr Nicholas Jones	Director of Public Health, Public Health Agency – Te Pou Hauora Tūmatanui	s 9(2)(a)

Aide-Mémoire

Update on measles epidemic preparedness – "people, parts, and policies"

Date due:	12 April 2024		
To:	Hon Dr Shane Reti, Minister of Health		
Security level:	IN CONFIDENCE	**Date:**	12 April 2024

Purpose: This aide-mémoire responds to your request for an interim update on the measles readiness assessment as provided in appendix 1 of *Measles Epidemic Preparedness* (H2024036756 refers). This interim update focuses on areas where assessment of readiness has changed, and updates about areas that have been recently tested through recent suspected cases. The aide-mémoire also summarises what will be provided in coming weeks.

Summary:

- This aide-mémoire provides an interim update on measles readiness, following the initial briefing provided to you on 22 March 2024 (H2024036756 refers).
- A small number of areas have improved (shifting from amber to green), while some are now assessed as being of 'higher' or 'greater' risk. These new areas of concern were identified through the system response to suspected cases in the Waikato. Whilst these were later determined to be false positives, they provided a 'test-case' for response preparedness.
- There is substantial work underway to progress the actions, and this is outlined.
- A substantive update of the RAG status of people, parts, and policies will be provided as an appendix to the Cabinet paper you have requested for May 2024.
- We are also addressing your request for an independent review of measles readiness and will provide further advice in the first week of May.
- Officials are available to discuss any matters raised in this aide-mémoire at your request. This aide-mémoire discloses all relevant information.

Dr Andrew Old
Deputy Director-General
Public Health Agency | Te Pou Hauora Tūmatanui

Update on measles epidemic preparedness – "people, parts, and policies"

Context

1. A briefing on measles epidemic preparedness was provided to you on 22 March 2024 (H2024036756 refers) that provided an initial assessment of measles response readiness, identifying opportunities to strengthen key aspects of preparedness and priority action areas.

2. This aide-memoire provides an update on measles epidemic preparedness, highlighting changes to the risk ratings. A detailed update will be included in the Cabinet paper you have requested for 6 May 2024.

3. Health agencies have continued to work in partnership and together are progressing measles preparedness across the system and addressing identified risks.

4. Recent suspected measles cases have also served as a real-world test of the outbreak response system.[1] Whilst many components of the system worked as intended and public health services responded swiftly, the incident highlighted potential vulnerabilities.

Advancing expert oversight for strategic response planning and reporting

5. We are rapidly progressing work to ensure we can offer recommendations to strengthen system-level stewardship through an independent review of the measles readiness assessment. Additionally, this mechanism will advise on the assessment adequacy and identify any areas either not assessed or where evidence is inadequate.

Key Readiness Assessment Updates

6. Given the short interval since the previous briefing, we have a modest number of updates and shifts in risk to report, informed by health agency collaboration and insights from real-world testing.

7. Key updates as of 11 April 2024 are summarised in Table 1. A full updated measles readiness assessment framework, with these changes shown in bold, is provided in **Appendix 1**.

[1] Over the Easter weekend (29 March – 1 April), there were suspected measles cases in the Waikato region managed by local public health services. These were later confirmed false positives; however, provided a 'test case' for response.

Table 1: Key shifts in readiness assessment, current 11 April 2024.

System Component	PPP	Preparedness Readiness Assessment Update	Rationale
De-escalation of readiness assessment (from 'amber' to 'green')			
Case and contact investigation and management	Parts	The new national Notifiable Diseases Management System (NDMS) is in place to enable national collaboration.	The recent response to suspected cases tested NDSM to a degree, enhancing confidence in its use, noting that a full-scale national response was not initiated.
Escalation of readiness assessment (from 'green' to 'amber')			
Intelligence	Parts	Measles case and contact data is available through NDMS, but integration with EpiSurv is not automated.	The response to recent suspected cases emphasised the need to progress enhancements in integration between EpiSurv and NDMS to reduce the need to rely on time consuming manual processes.
Laboratory testing and network	People	NPHS is undertaking work to enhance confidence that both measles PCR and serology testing capacity is sufficient within existing contracted laboratories.	The response to suspected cases highlighted opportunities to refine laboratory processes and strengthen confidence in outbreak testing capacity.

Next Steps

8. The Public Health Agency, with input from the National Public Health Service (NPHS) – Health New Zealand, is preparing a Cabinet paper for the meeting on 6 May 2024, which will provide a substantive update of measles epidemic preparedness and RAG status of readiness.

9. Officials will provide further advice on specific aspects of measles readiness. This will include:

    a. further advice on the Eligibility Direction review

    b. consideration of the current evidence for improving ventilation to decrease transmission risk

    c. options to strengthen system-level stewardship

    d. more detailed advice regarding costings of preparedness recommendations which require funding to process

    e. options to strengthen Māori and Pacific communities' preparedness and response to a measles outbreak.

END

Minister's Notes

Appendix 1 *(1 of 4)*
Measles Readiness Assessment: People, Parts and Policies

Version 2 as of 11 April 2024

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment					
		People		Parts		Policy	
Governance, technical advice and leadership	• The planning process and response plans are compliant with Te Tiriti obligations • There are agreed roles and responsibilities (including decision-making process) across the health agencies and into other connected areas of Government. • Planners and decision-makers have access to experts • Readiness and response plans have been reviewed by experts • Plans prioritise protecting vulnerable populations and address prior review findings		• Strong Māori and Pacific leadership are in place across the health agencies and connected into measles preparedness work. • Experienced public health clinicians and emergency management teams in place in both the Public Health Agency and National Public Health Service • Clinical Technical Advisory Group exists– membership and TOR under review to assess fit with Te Tiriti compliance and focus on system preparedness • Some engagement is occurring with teams/sectors outside of public health, but response preparedness would benefit from strengthened whole of system leadership including community representation		• Accountabilities framework work is underway to clarify roles and responsibilities • Some established systems including connections to the broader sector have been disrupted by ongoing health reforms and are in a rebuilding phase • Clarity of roles and responsibilities for both the escalation and de-escalation through response phases is being confirmed • A national measles public health outbreak response plan exists ready for review by a preparedness focussed advisory group • Need to establish a process where Iwi Māori Partnership Boards are included within the process and advise the system on equitable approaches that meet the needs of their communities		
Surveillance	• Systems in place to monitor the international measles situation • Effective system for timely notification of travellers to NZ who have been exposed to measles • Health care workers have been reminded of when and how to notify suspected measles cases • All laboratories have SOPs for notifying positive cases		• Dedicated roles/roster for monitoring and responding to National Focal Point notifications 7d/week • PHA, NPHS and ESR have staff with responsibilities for monitoring domestic and international situation.		• National Focal Point system in place to receive and send measles notifications internationally • Direct Laboratory Notification of Measles in place for positive tests to ESR from diagnostic Laboratories • Clinicians are aware of measles risk and have access to up-to-date best practice advice including requirement to notify • ESR routinely reviews and report international surveillance intelligence		
Border	• All reasonable steps have been taken to limit chance of/impact from measles infected person arriving from overseas • There is an agreed plan on how to protect Pacific countries should a NZ have a measles case/outbreak		• PHA and NPHS Border teams/roles in place and are connected into Border Executive Board and agencies such as Customs and Immigration. • Polynesian Health Corridors and Global Health teams are well established		• General health advice in place at major NZ airports. Measles-specific messaging is ready to go • Pro-active follow up of affected flights into Australia for NZ bound travellers • Foreign language schools engaged with by NPHS to strongly advise students to get vaccinated before departure • NPHS engagement has occurred with MBIE on vaccination status of temporary workers		• Medical Officers of Health can direct a person to refrain from travelling outside of NZ. Sharing this information with a border agency or airline would need to be assessed for each case be would likely be justified in terms of the health information privacy code • No existing policy mandating that travellers (incoming and outgoing) must have their vaccinations up to date.

Red Risk identified that needs priority action and/or decision
Amber Some identified gaps or unknown vulnerabilities requiring targeted action
Green No concerns identified regarding preparedness
Grey No action planned presently
Bold **Updated assessment and risk adjustment**

Appendix 1 *(2 of 4)*
Measles Readiness Assessment: People, Parts and Policies

Version 2 as of 11 April 2024

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment		
		People	Parts	Policy
Case and contact investigation and management	• Clear mechanisms established to stand up effective contact tracing in the short (first days) and medium (weeks) terms • Plans in place for managing surge capacity • Logistical means to isolate and support contacts and cases in place	• Increased public health surge capacity through establishment of the National Public Health Service • Further work is required to better understand surge workforce capacity across the response phases • Small national investigation service team in place to support activities • An agreement that provides outsourced out of hours surge capacity for operational tasks related to contact management ends in June 2024	• CDC Manual recently refreshed and up to date along with documents such as case/control management available • **The new national Notifiable Diseases Management System is in place to enable national collaboration.** • Digital New Zealand Traveller Declaration (NZTD) available for contact tracing for travellers, but low use to date • The level of available immunoglobulin is insufficient for a large outbreak and further work is needed to confirm national access and delivery pathways	• Case isolation and contact quarantine requirements are voluntary. Mandatory requirements can only be made on an individual basis • There is a gap in operational capability to provide, at short-notice, wrap around support to individuals and groups to enable them to safely and effective isolate/quarantine when required.
Immunisation approach	• Focussed on most vulnerable to serious illness/sequelae • Focussed on those most likely to reduce size of outbreak (under-vaccinated populations) • Sufficient vaccine supply and means of re-distribution • Accessible services • Community-led prevention and outbreak response programmes supported • Workforce available for vaccination surge during outbreak	• Various Immunisation Taskforce recommendations are underway to support expansion of vaccinator workforce, including plans to simplify authorisation process • The existing vaccinator workforce continues to grow with the addition of pharmacy for MMR and could be deployed to assist with surge capacity	• Hauora Māori providers have received additional funding for immunisation activities • Aotearoa Immunisation Register (AIR) has been stood up but requires further development. • Data is available with details for most children who are overdue but not all children are captured, and AIR may not hold this information for older age cohorts • NPHS have confirmed there is sufficient stock of measles vaccine and rapid procurement of further stock possible if required • Good visibility and management of MMR stock across pharmacy via the Inventory Portal established for COVID-19 but GPs use the Pharmac stock management system which doesn't provide visibility of stock on hand once it is distributed to provider sites	• Current eligibility direction does not allow all measles susceptible individuals to receive free MMRs (e.g. seasonal workers, temporary residents aged over 18 years old) • s 9(2)(f)(iv) [redacted]

Appendix 1 *(3 of 4)*
Measles Readiness Assessment: People, Parts and Policies

Version 2 as of 11 April 2024

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment		
		People	Parts	Policy
Intelligence	• Effective systems for gathering information in place • Effective systems for distributing information in place • Intelligence is available to inform prevention and preparation activities • Planning and preparation has occurred in anticipation of intelligence needs should an outbreak occur	• Resources are available within NPHS, PHA and ESR to gather and generate intelligence.	• **Measles case and contact data is available through EpiSurv and NDMS, however there is need to enhance integration between the two systems.** • The reporting functionality for data out of AIR and NDMS is not streamlined for automated reporting • Roles and responsibilities for commissioning and developing intelligence are not yet harmonised post health reforms • Initial modelling completed and need for more being considered • Report templates exist from prior outbreaks that will be re-used in the event measles outbreak • Plans exist to undertake an end-to-end simulation across measles from data entry to report • It is a challenge to maintain up-to-date distribution lists, especially in an evolving health structure	• Immunisation data sharing agreements between Ministry of Education and HNZ in place for the purpose of enabling the provision of information to HNZ and statutory public health officers to assist the mitigation of an infectious disease outbreak • Immunisation regulations provide for early childhood centres and primary schools to keep immunisation registers. These are potentially redundant given AIR
Laboratory testing and network	• Capability, capacity and networks exists to provide timely measles-related testing (PCR and serology) for case detection, contact management and effective outbreak control • Reporting systems in place	• **NPHS is undertaking work to enhance confidence that both measles PCR and serology testing capacity is sufficient within existing contracted laboratories.** • Option exists to prioritise individual tests for processing and to engage additional laboratories for extra surge capacity	• Usually test turnaround times will meet requirements • There are sufficient laboratory supplies to support testing for an outbreak • All laboratories have systems for timely reporting of PCR results to Public Health Services • Modelling of outbreak scenarios and /or comparison with demand in prior incursions are needed to enhance confidence in evaluating capacity readiness	• Privacy Impact Assessment is underway to enable access to serology results in a delegated model
Infection Prevention and Control	• IPC guidance and expert advice is available and accessible • Providers can quickly access immune status of workforce • Health care workers are equipped to manage infection risk from measles cases • Systems are in place to effectively triage and isolate arriving patients in Airbourne Infection Isolation Room (AIIR)	• Infection Prevention and Control advice is now provided through limited resource in the Chief Clinical Officer's Team rather than a specialist team as occurred during COVID-19	• There are sufficient supplies of Personal Protective Equipment (PPE) for a measles outbreak via the national reserves stockpile • There is a need to better understand hospital capacity to ensure timely placement of patients in AIIR and contingency plans in place if AIIR capacity is exceeded • Accessible and robust guidance exists from IPC to manage measles risk within healthcare settings • General practice may have limited capacity for isolation	• Mask use requirements are governed by health and safety policy rather than legislation

Appendix 1 *(4 of 4)*
Measles Readiness Assessment: People, Parts and Policies

Version 2 as of 11 April 2024

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment					
		People		**Parts**		**Policy**	
Primary care	• Primary care clinicians have easy access to best practice information • Workforce available to support prevention immunisation activities and surge during outbreak • Workforce available to support increased volume of consultations during an outbreak • Means in place for supporting routine (non-measles related) primary care during an outbreak • Transmission reduction mechanisms in place	• Within General Practice capacity is already constrained with shortages of both doctors and nurses • There is limited information on surge capacity for across all types of primary care services		• Up to date best practice information for measles is available via Health Pathways. • Virtual consultations will continue to be available • There are no systems that can ensure communications will reach all clinicians		• Funding to enable free access to consultations or testing for suspected cases or contacts when referred by Public Health Services is in place until 30 June 2024 with work is underway to extend this funding beyond the end of June.	
Hospital and Specialist Services	• Isolation plans and facilities available with sufficient capacity • Plans in place for managing unknown numbers of seriously ill children (including potential transport of infectious individuals) • Immunity of staff has been confirmed and documented, with documentation readily available on short notice • Plans are in place to manage infection risk in Emergency Departments	• Limited information is currently available on workforce surge capacity for hospital services including PICU • Many specialties including Paediatrics are already impacted by workforce shortages • Documentation of staff immunity can vary and is not always readily available		• Hospitals have escalation plans to manage higher than normal volumes of people requiring assessment and/or hospitalisation • Modelling and/or comparison with demand in prior incursions may help inform confidence in preparedness and what additional actions need to be taken			
Public Information Management	• Clear allocation of responsibilities • Support available for rapid production of accurate and reliable information for the public (situation updates, disease information, and "what you need to do")	• Staff with communications expertise are available within NPHS Protection, NPHS Promotion and the PHA • Predicting the exact information and the necessary translations to address all potential outbreak scenarios is not feasible		• Templates for letters and other resources are prepared • Translated resources are available on the Te Whatu Ora website • The Pacific Public Health Directorate have developed and will roll out a Pacific specific National Emergency Communications Plan		• Clarification is needed on where the public spokesperson role would sit for the various outbreak scenarios e.g. national vs local	
Other Government Agencies and sectors	• Clear roles and responsibilities • Effective communication and relationships between agencies • Mechanisms in place for health sector to support other agencies, including technical advice and communication resources	• NPHS has good working relationships with border staff • Health and Education work together at all levels: national, regional and local • Links with other sectors could be strengthened		• NPHS has specific resources to support educational settings including advice on infection prevention and control • NPHS could provide advice to schools to also collect robust information on immunisation status of staff and encourage MMR vaccination if not up to date • NPHS will continue to engage with MBIE re temporary workers		• Consider options for robust documentation of immunisation status of older students who did not receive childhood immunisation in New Zealand	

Briefing

Measles Epidemic Preparedness – draft Cabinet paper

Date due to MO:	24 April 2024	**Action required by:**	30 April 2024
Security level:	IN CONFIDENCE	**Health Report number:**	H2024039982
To:	Hon Dr Shane Reti, Minister of Health		
Consulted:	Health New Zealand: ☒		

Contact for telephone discussion

Name	Position	Telephone
Tagaloa Dr Junior Ulu	Acting Deputy Director-General, Public Health Agency – Te Pou Hauora Tūmatanui	s 9(2)(a)
Dr Nicholas Jones	Director of Public Health, Public Health Agency | Te Pou Hauora Tūmatanui	s 9(2)(a)

Minister's office to complete:

☐ Approved ☐ Decline ☐ Noted

☐ Needs change ☐ Seen ☐ Overtaken by events

☐ See Minister's Notes ☐ Withdrawn

Comment:

Measles Epidemic Preparedness – draft Cabinet paper

Security level:	IN CONFIDENCE	**Date:**	24 April 2024
To:	Hon Dr Shane Reti, Minister of Health		

Purpose of report

1. As requested, this paper provides you with a draft Cabinet paper to take to Cabinet on the readiness of the health system to respond to a measles outbreak.

Background

2. The Ministry of Health (the Ministry), along with Health New Zealand - Te Whatu Ora (Health NZ), conducted a measles epidemic readiness assessment and provided you with advice on 22 March 2024 (H2024036756 refers) on our preparedness to prevent, manage, and respond to a measles outbreak in New Zealand.
3. The previous advice included a measles readiness red, amber, and green (RAG) assessment of the health system, organised by parts, people and policies. Opportunities to strengthen key aspects of preparedness were also identified, including priority areas for further action.
4. Following this, at the health officials meeting on 8 April 2024, you requested the Ministry prepare a Cabinet paper and an updated RAG for you to take to Cabinet to inform your Ministerial colleagues.

A draft Cabinet paper is attached

5. The draft paper (attached) is for noting and does not seek any decisions from Cabinet. It does:
   a. highlight that New Zealand is at a high risk of a measles outbreak due to low vaccination rates
   b. emphasise that prevention of an outbreak remains the health sectors priority
   c. outline the readiness of the health system to respond to a measles outbreak
   d. include an updated RAG assessment of health system readiness, detailing actions underway and provisional timelines for achieving green status (where this is not already in place).

Next steps and suggested timeframe

6. The paper is scheduled to go to Cabinet on 27 May 2024. If you approve the draft paper the key timeframes are set out below.

Table 1: Key timeframes for the draft Cabinet paper on measles epidemic preparedness.

30 April	provide any feedback on the attached Cabinet paper for the Ministry
2 May – 15 May	Ministerial consultation on the paper
16 May	paper lodged with Cabinet Office
22 May	Cabinet Social Outcome Committee
27 May	Cabinet

Recommendations

We recommend you:

a) **Approve** the draft Cabinet paper so it can undergo Ministerial consultation. **Yes/No**

Dr Diana Sarfati
Director-General of Health
Te Tumu Whakarae mō te Hauora
Date: 23/4/2024

Hon Dr Shane Reti
Minister of Health
Date: 9/5/2024

CAB-24-MIN-0179

Cabinet

Minute of Decision

Report of the Cabinet Social Outcomes Committee: Period Ended 24 May 2024

On 27 May 2024, Cabinet made the following decisions on the work of the Cabinet Social Outcomes Committee for the period ended 24 May 2024:

Out of scope

[redacted]

SOU-24-MIN-0043 **Measles Outbreak Preparedness** CONFIRMED
Portfolio: Health

Out of scope

[redacted]

Diana Hawker
for Secretary of the Cabinet

SOU-24-MIN-0043

Cabinet Social Outcomes Committee

Minute of Decision

Measles Outbreak Preparedness

Portfolio **Health**

On 22 May 2024, the Cabinet Social Outcomes Committee (SOU):

1 **noted** that New Zealand remains at high risk of a measles outbreak;

2 **noted** that a 2019 outbreak infected over 2,000 people with 700 hospitalised, at an estimated health system cost of $16 million, and that any future outbreak would likely cost significantly more due to lower vaccination coverage;

3 **noted** that six incursions and one possible incursion of measles were successfully investigated and stamped out in 2023, with an additional eight possible incursions investigated to date in 2024;

4 **noted** that a measles outbreak would add significant pressure on the health system, and impact at risk communities, the Government's health targets and priorities, and the wider economy;

5 **noted** that officials have completed an assessment of New Zealand's preparedness to respond to a measles outbreak across a people, parts, and policy functions measles preparedness framework;

6 **noted** that as of 16 May 2024, of the 86 actions included in the measles preparedness framework, 44 were assessed as green, 35 as amber, and seven as red;

7 **noted** that two independent reviews occurring in May 2024 will provide further assurance on New Zealand's measles preparedness and identify where further actions and investment are required to ensure health system readiness;

8 **invited** the Minister of Health to submit a paper to SOU as soon as practicable on the actions being taken to increase immunisation rates;

9 **noted** that in the event of a measles outbreak, the health system will require additional funding to support an effective response;

10 **noted** that in the event of a measles outbreak, the Minister of Health will return to Cabinet with further advice on what additional action and investment is required.

Jenny Vickers
Committee Secretary

Attendance: (see over)

Present:
Rt Hon Christopher Luxon
Rt Hon Winston Peters
Hon David Seymour
Hon Dr Shane Reti
Hon Paul Goldsmith
Hon Louise Upston (Chair)
Hon Mark Mitchell
Hon Tama Potaka
Hon Nicole McKee
Hon Casey Costello
Hon Penny Simmonds
Hon Karen Chhour

Officials present from:
Office of the Prime Minister
Officials Committee for SOU
Office of the Minister of Health
Ministry of Health

In Confidence

Office of the Minister of Health

Cabinet Social Outcomes Committee

Measles Outbreak Preparedness

Proposal

1. This paper advises Cabinet on the readiness of the health system to respond to a measles outbreak. It also identifies areas where further work and investment could improve our response to an outbreak.

2. This paper is for noting and does not seek any decision from Cabinet.

Relation to Government priorities

3. This paper contributes to the Government's priority to deliver better health outcomes and achieving timely access to quality health care.

Executive Summary

4. Health officials and experts consider that New Zealand is at high risk of a measles outbreak. This is due to a combination of the high transmissibility of the measles virus to people who have not been vaccinated, low vaccination rates, and outbreaks overseas, making importation of the virus to New Zealand likely.

5. Prevention of a measles outbreak through vaccination is the single most important action to reduce the risk and remains our priority. The Ministry of Health and Health New Zealand – Te Whatu Ora (Health NZ) have introduced a range of initiatives to improve delivery of scheduled vaccines while addressing areas of low vaccination coverage.

6. I have asked the health sector to be ready for an outbreak with a full assessment of what the health system requires to be prepared. This assessment is being independently reviewed to ensure the health systems readiness and identify any further actions that may be required.

7. In the event of a measles outbreak the health system will require additional funding to ensure an effective response. This would also help to minimise the impact on other health services, at risk communities, the Government's health targets, and the wider economy.

Background

8. Measles is a highly contagious airborne virus. It frequently results in serious health impacts with up to 1 in 3 cases being hospitalised. Cases can also suffer from long term immune suppression. The R0 value (measure of infectiousness) of measles is between 12–18, meaning that an infected person will go on to infect 12–18

susceptible (non-immune) others on average. For comparison, the R0 value of COVID-19 is approximately 2.5 across variants.

9. The Measles, Mumps and Rubella (MMR) vaccine used to present measles in New Zealand is highly effective. However, New Zealand is well below the 95% immunisation target at 2 years of age required to prevent transmission of measles within the community (known as herd immunity). This rate is especially low in Māori and Pacific communities.

10. Among the age group most at risk of severe infection, officials estimate that approximately 50,000 children aged 1-4 years are currently susceptible to measles infection with younger children aged 6-11 months (approximately a further 30,000), also susceptible due to waning or absent maternal antibody protection.

11. In 2020 it was estimated that around 300,000 15–30-year-olds were not up to date with MMR vaccines, most of whom remain at risk in the event of a measles outbreak.

12. The table below presents MMR coverage for children aged 1–17 years as of 14 March 2024. Coverage is calculated as children who have had all MMR vaccines that they are eligible for. For children aged 12–14 months, coverage is one dose of MMR, whereas for children aged 15 months and older, coverage is two doses of MMR. The denominator are all children recorded on the Aotearoa Immunisation Register (AIR).[1]

Table 1: MMR coverage for children aged 1–17 years as at 14 March 2024

Cohort	Māori	Pacific	Asian	Other	Total
1 - 4 years	69.0%	76.2%	86.7%	81.3%	79.3%
5 - 12 years	86.7%	88.0%	85.5%	87.7%	87.7%
13 - 17 years	88.5%	82.0%	72.0%	85.1%	84.1%

13. Comparing this data with MMR immunisation rates prior to the 2019 measles outbreak, shows that MMR immunisation rates have dropped markedly. While changes to both the timing of MMR vaccine doses (from at 15 months and 4 years to at 12 and 15 months) and how the information is gathered have made it difficult to compare exact numbers, there is a clear decline. Immediately prior to the outbreak, no ethnic group had coverage below 91% for the first dose due at 15 months, or below 89% for the second dose due at 4 years.

We are vulnerable to a measles outbreak

14. Due to a decline in MMR vaccination globally, other high and middle-income countries are seeing a rise in measles cases. Many traditionally measles free countries

[1] Coverage is lower for those aged 13-17 years across all ethnicities excluding Māori. This likely reflects missing data on the AIR (i.e., because the person has migrated to New Zealand and their immunisation records have not yet been entered into AIR), rather than true lower immunisation coverage.

are reporting outbreaks and/or imported cases, including England, the United States and Australia.

15. Low vaccination coverage locally, combined with increasing cases overseas means we are more vulnerable to a serious measles outbreak than we were in 2019. At that time an overlapping series of measles outbreaks, predominantly in Auckland and Northland, infected more than 2,000 people, and resulted in hospitalisation of more than 700.

16. There have been 15 instances of measles or suspected measles cases since the start of 2023, as noted in table 2 below. This emphasises how fragile New Zealand's measles free status is and has provided a real-world test of the outbreak response system. Whilst many components of the system worked as intended and public health services responded swiftly, these incidents have highlighted potential vulnerabilities.

Table 2: New Zealand measles response since January 2023

Response	Confirmed/probable cases	Exposure events	Total contacts
Response 1, Jan 2023	None identified in New Zealand	1	50
Response 2, Feb 2023	1	16	107
Response 3, May 2023	2	5	1007
Response 4, Sep 2023 (1)	1	3	63
Response 5, Sep 2023 (2)	1	10	178
Response 6, Oct 2023	8	28	482
Response 7, Nov 2023	1	6	126
Response 8, Jan 2024 (1)	None identified in New Zealand	1	15
Response 9, Jan 2024 (2)	None identified in New Zealand	1	9
Response 10, Feb 2024 (1)	None identified in New Zealand	1	15
Response 11, Feb 2024 (2)	None identified in New Zealand	1	5
Response 12, Mar 2024 (1)	None identified in New Zealand	1	7
Response 13, Mar 2024 (2)	None identified in New Zealand	1	8
Response 14, Mar 2024 (3)	None identified in New Zealand	1	7
Response 15, Apr 2024	0 - vaccine strain positive result	7	33

17. Being able to effectively contact trace also becomes significantly more difficult when dealing with a cluster of cases rather than an isolated case of measles. On average the number of contacts needing to be actively followed up per case in 2023 was ~150, with an average of 20 contacts being found to be susceptible and needing to quarantine. With this number of contacts per case we will rapidly exceed our contact tracing capacity in the event of an outbreak.

18. Any sustained outbreak of measles will impact on primary care, as well as hospital and specialist services, through increased presentations and hospitalisations. This will add further pressure to the health system, especially if outbreaks coincide with winter illness peaks or other significant health emergencies, potentially impacting health target achievement, including emergency department wait times and planned care. It also has the potential to disrupt learning through student absences.

19. A sustained outbreak would also have significant wider societal and economic implications. Requirements to isolate and quarantine can disrupt school and work, and there are major long-term impacts on individuals and families who suffer from severe disease, with complications including brain damage and death.

20. I have been advised that an outbreak on a similar scale to that experienced in 2019 would likely cost the health system upwards of $16 million for national coordination, case management, community care and hospitalisations. This does not include an emergency vaccination campaign or the wider economic impacts. However, with vaccination rates now lower than in 2019, an outbreak today would likely be larger and cost substantially more.

21. Modelling work is underway to help characterise the magnitude of a potential outbreak of measles, based on previous outbreaks and current vaccination coverage. An economic impact assessment is also being carried out by the Ministry of Health. This work is expected to be completed by the end of May 2024.

This would put our Pacific neighbours and WHO status at potential risk

22. New Zealand has a stewardship role for the Pacific Islands, including for our realm nations of the Cook Island, Niue, and Tokelau. A measles outbreak within New Zealand risks spreading the disease to many western Pacific countries, as we saw in 2019 which resulted in 5,707 cases and 83 deaths in Samoa. 87% of the deaths were in children younger than 5 years, causing long-lasting impacts on local health systems and vaccination rates.

23. The World Health Organization's Regional Verification Commission designated New Zealand as measles and rubella free in October 2017. A measles outbreak that is unable to be contained may put this status at risk leading to a potential loss of international reputation and trust in New Zealand's health and surveillance systems.

Preparing for an outbreak

24. In February 2024 I requested the health system perform a readiness assessment of the people, parts and policies that support an effective response to a measles outbreak (a summary is attached as Appendix 1). Health officials assessed 12 aspects of the health system including immunisations, surveillance, border and the laboratory network. A total of 86 actions were assessed with:

    24.1. 44 being assessed as green with no concerns identified;

    24.2. 35 being assessed as amber meaning some identified gaps; and

    24.3. 7 being assessed as red meaning a risk is identified that needs priority action.

25. Further information on the actions being taken to address the actions assessed as amber and red is provided below.

Immunisation

26. Improving MMR vaccination rates in New Zealand is the best way to protect our community from a measles outbreak. One dose is up to 95% effective, and 2 doses are

up to 99% effective against measles. The vaccine is highly effective as the measles virus is stable and does not mutate over time (unlike influenza and COVID-19).

27. New Zealand has a sufficient supply of MMR vaccines and can procure more at short notice in the instance of a sudden and ongoing increase in demand.

28. The health system is focusing on both:

    28.1 achieving high, on-time, and equitable childhood vaccination rates as our youngest children are most vulnerable to the severe consequences of a measles infection; and

    28.2 addressing areas of low vaccination coverage in older children and young adults, to achieve a 'wall of immunity' to stop ongoing transmission.

29. Following the Immunisation Taskforce Report (2022) there has been a range of initiatives to deliver higher vaccination rates. These include:

    29.1 reviewing immunisation service delivery models;

    29.2 enhancing vaccinator workforce capability and capacity;

    29.3 strengthening new-born enrolment into primary care from birth to facilitate on-time vaccination;

    29.4 communication campaigns to address misinformation and improve trust in immunisation;

    29.5 implementing a new immunisation governance structure.

30. In March 2024, improved immunisation was also announced as one of the 5 health targets reinforcing this Government's commitment to improving immunisation rates.

Readiness

31. Health NZ have developed a response plan to be prepared for a measles outbreak. A summary of the activities and measures at each phase of the measles response ('Prepare,' 'Stamp it out' and 'Focused Control') is attached as Appendix 2.

32. Key features ensuring the system can respond quickly and effectively to a measles outbreak include:

    32.1 **Contact tracing** - Preparedness for contact tracing was tested in 2023 through 7 discrete responses to measles with 4 of them occurring at the same time as other significant public health emergencies. Most recently the system was tested again over Easter 2024. Health NZ is developing surge capacity plans for contact tracing as part of response planning. A new national technology platform, the Notifiable Disease Management System, greatly increases contact tracing capacity by enabling all public health services to work on one system so case and contact management can be delegated across a national workforce.

32.2 **Personal Protective Equipment (PPE)** - There are sufficient supplies of PPE to meet the increased demands of managing a measles outbreak, with a minimum of 12-week high pandemic use level of stock maintained.

32.3 **Border** - Standard health messaging is in place at Auckland, Wellington, Christchurch, and Queenstown international airports advising inbound travellers to urgently contact Healthline if they become unwell within 30 days of arrival. Measles-specific messaging is also in place to manage this risk. Further, in mid-2023 the New Zealand Customs Service (Customs) introduced the digital New Zealand Traveller Declaration which, along with existing memorandums of understanding with Customs and other organisations (e.g., airlines), is used to expedite the identification and follow up of passengers who had contact with a measles case on an international flight.

32.4 **Access to technical expertise** is available to both prepare and respond to a potential measles outbreak.

Priorities going forward

33. Despite the health systems preparations to respond to measles, there are areas of concern highlighted through a recent assessment that still need to be addressed and may require investment:

33.1 **MMR vaccination** - prevention remains the most effective approach to averting outbreaks and a 'wall of immunity' is required to protect all New Zealanders. Ultimately improving MMR vaccination rates in New Zealand is the best way to protect our community from measles outbreaks. The system must focus on both achieving high, on time and equitable childhood vaccination rates, and addressing 'pockets' of low vaccination coverage in older children and young adults with accessible immunisation options.

33.2 **Support services for cases and non-immune contacts -** due to the highly infectious nature of measles, isolation of cases and quarantine of non-immunised contacts while infectious is vital for preventing and containing a measles outbreak. Wrap-around support services including alternative accommodation are important to prevent financial and social hardship. Until 30 June 2024 the health system has access to the community connector support fund through the Ministry for Social Development to provide wrap around support to affected people, however there is no mechanism to provide alternative accommodation. Officials are reviewing options to provide support in the case of a future outbreak.

33.3 **Improved ventilation -** As outlined in paragraph 8, the measles virus is airborne and highly contagious. Educational settings are one of the most vulnerable environments in transmission of airborne infectious disease such as measles, due to a combination of the amount of time and interaction between students in these settings. Ensuring that classrooms and other indoor spaces have good ventilation and/or air purification is likely to be one of the top 3 levers to reduce transmission in primary schools and early childhood education settings following vaccination and case isolation. The Ministry of Education provided significant resources and support to state and state-integrated schools

to improve ventilation in 2022 as part of the COVID-19 response. This included information, CO_2 monitors, portable air cleaners and funding for maintenance required to improve ventilation. The Minister of Education, Hon Erica Stanford, and I have asked officials to provide a stocktake of what schools have available and prepare simple messaging for schools about how to ventilate classrooms to prevent disease transmission.

33.4 **Primary care** is an important component in both prevention of a measles outbreak through immunisations and during an outbreak in diagnosing and providing clinical care for cases. However, general practice capacity is already constrained with shortages of doctors and nurses and there is limited information on surge capacity across all types of primary care.

33.5 **Hospital and specialist services** are also important in providing clinical care for severe cases in the event of an outbreak. Like primary care, there are workforce shortages, and pressure is likely to increase over winter.

33.6 **Eligibility criteria for vaccines -** As noted, increasing MMR immunisation is the best way to protect our community from a measles outbreak. Currently there are no means by which adult temporary residents/visitors to New Zealand can receive a free MMR vaccine without themselves being a contact of a case. This group includes seasonal and migrant workers, who are at a higher risk of importing measles into New Zealand, and in some cases, exporting measles to higher risk countries. I have sought advice from health officials on whether it is possible to extend measles vaccination eligibility to all people regardless of their eligibility, including the cost and impact of expanding eligibility. Health NZ have conditionally approved one-off funding of up to $1.65 million until 30 June 2024 for the administration of MMR vaccinations to all RSE scheme workers currently in New Zealand.

33.7 **Free access to consultations or testing for suspected cases or contacts** when referred by public health services. A current system is in place until 30 June 2024 with work underway by Health NZ to determine whether this funding can be extended beyond the end of June 2024.

34. In the event of a significant measles outbreak the health system would likely require additional funding to support a range of emergency measures. In such a circumstance, I will likely return to Cabinet seeking further support. This could include support for:

34.1 emergency immunisations programmes within affected communities,

34.2 additional capacity within primary care;

34.3 support for positive cases (and their close contacts) to isolate safely;

34.4 laboratory costs for testing; and

34.5 additional capacity to support expanded public health and tele-health services.

35. Officials are unable to provide definitive figures without knowing the size of the outbreak or the communities it will affect. I have commissioned economic modelling

to provide a range of scenarios and indicative costs. This is planned to be available by the end of May 2024.

Assurance of our preparedness

36. Several expert and/or technical groups are in place to provide assurance and oversight of our preparedness and readiness to respond and manage a measles outbreak.

    36.1. Measles Clinical Technical Advisory Group (Measles TAG) - hosted within the National Public Health Service of Health NZ, this group provides clinical and technical advice to support an operational response during an outbreak.

    36.2. Interim Chief Executives Multi-Agency Measles Preparedness Group - this is an interim group that meets fortnightly to provide strategic oversight of the system's preparedness for measles.

    36.3. In addition I have commissioned two reviews of the health system's readiness:

        36.3.1. a review by New Zealand health experts as part of a special meeting of the National Verification Committee for Measles and Rubella Elimination; and

        36.3.2. a one-off review from an international expert nominated by the Western Pacific Region Office of the World Health Organization

    36.4. I anticipate both reviews will be completed over the coming weeks.

Cost-of-living Implications

37. Effective management of any future measles outbreak will reduce the risk of a larger outbreak with broader impacts on both individual health and the economy. The Ministry of Health is currently undertaking an economic impact assessment to understand the potential cost of a measles outbreak to the New Zealand economy.

Financial Implications

38. There are no financial implications of this Cabinet paper.

Legislative Implications

39. There are no legislative implications to this Cabinet paper.

Impact Analysis

40. There are no regulatory or climate implications of this Cabinet paper.

Population Implications

41. A significant lesson from the 2019 measles outbreak was that the health system did not tailor its response sufficiently to support those most at risk, specifically Māori and Pacific communities. This included not sufficiently addressing Te Tiriti obligations and consideration of impacts on equity from the start.

42. Preparation for a measles outbreak includes ensuring increased support for communities with low vaccination coverage, and providers that serve them (e.g. Māori and Pacific providers), strengthening bespoke culturally appropriate vaccination services, medical care, health promotion, intelligence sharing and gathering at the local and national levels, and holistic and wraparound support. This includes establishing a process where Iwi Māori Partnership Boards are included within the process and advise the system on equitable approaches that meet the needs of their communities.

Human Rights

43. This proposal is consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

Use of external Resources

44. No contractors or consultants were involved in the development of this Cabinet paper.

Consultation

45. This paper was prepared by the Ministry of Health. Health NZ and the Treasury were consulted.

Communications

46. The Health NZ *Measles Outbreak Communications Plan* provides a framework for communications between national and regional responses. A national social marketing and community action campaign are currently underway to reduce complacency and promote on-time childhood immunisations, which includes the MMR vaccine.

Proactive Release

47. I intend to proactively release this paper within 30 days of being considered by Cabinet, with any appropriate redactions where information would have been withheld under the Official Information Act 1982.

Recommendations

The Minister of Health recommends that the Committee:

1. note that New Zealand remains at high risk of a measles outbreak;

2. note that a 2019 outbreak infected over 2,000 people with 700 hospitalised, at an estimated health system cost of $16m, and that any future outbreak would likely cost significantly more due to lower vaccination coverage;

3. note that 6 incursions and 1 possible incursion of measles were successfully investigated and stamped out in 2023, with an additional 8 possible incursions investigated to date in 2024;

4. note that a measles outbreak would add significant pressure on the health system, and impact at risk communities, the Government's health targets and priorities, and wider economy;

5. note that officials have completed an assessment of New Zealand's preparedness to respond to a measles outbreak across a people, parts, and policy functions measles preparedness framework;

6. note that, as of 16 May 2024, of the 86 actions included in the measles preparedness framework, 44 were assessed as green, 35 as amber and 7 as red;

7. note that two independent reviews occurring in May 2024 will provide further assurance on New Zealand's measles preparedness and identify where further actions and investment are required to ensure health system readiness;

8. note that in the event of a measles outbreak the health system will require additional funding to support an effective response;

9. note that in the event of a measles outbreak I will return to Cabinet with further advice on what further action and investment is required.

Authorised for lodgement.

Hon Dr Shane Reti

Minister of Health

Appendix 1: Measles Readiness Assessment

Appendix 2: National Public Health Service Response Activities

Appendix 1 *(1 of 4)*
Measles Readiness Assessment: People, Parts and Policies

As of 22 March 2024

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment					
		People		Parts		Policy	
Governance, technical advice and leadership	• The planning process and response plans are compliant with Te Tiriti obligations • There are agreed roles and responsibilities (including decision-making process) across the health agencies and into other connected areas of Government. • Planners and decision-makers have access to experts • Readiness and response plans have been reviewed by experts • Plans prioritise protecting vulnerable populations and address prior review findings		• Strong Māori and Pacific leadership are in place across the health agencies and connected into measles preparedness work. • Experienced public health clinicians and emergency management teams in place in both the Public Health Agency and National Public Health Service • Clinical Technical Advisory Group exists– membership and TOR under review to assess fit with Te Tiriti compliance and focus on system preparedness • Some engagement is occurring with teams/sectors outside of public health, but response preparedness would benefit from strengthened whole of system leadership including community representation		• Accountabilities framework work is underway to clarify roles and responsibilities • Some established systems including connections to the broader sector have been disrupted by ongoing health reforms and are in a rebuilding phase • Clarity of roles and responsibilities for both the escalation and de-escalation through response phases is being confirmed • A national measles public health outbreak response plan exists ready for review by a preparedness focussed advisory group • Need to establish a process where Iwi Māori Partnership Boards are included within the process and advise the system on equitable approaches that meet the needs of their communities		
Surveillance	• Systems in place to monitor the international measles situation • Effective system for timely notification of travellers to NZ who have been exposed to measles • Health care workers have been reminded of when and how to notify suspected measles cases • All laboratories have SOPs for notifying positive cases		• Dedicated roles/roster for monitoring and responding to National Focal Point notifications 7d/week • PHA, NPHS and ESR have staff with responsibilities for monitoring domestic and international situation.		• National Focal Point system in place to receive and send measles notifications internationally • Direct Laboratory Notification of Measles in place for positive tests to ESR from diagnostic Laboratories • Clinicians are aware of measles risk and have access to up-to-date best practice advice including requirement to notify • ESR routinely reviews and report international surveillance intelligence		
Border	• All reasonable steps have been taken to limit chance of/impact from measles infected person arriving from overseas • There is an agreed plan on how to protect Pacific countries should a NZ have a measles case/outbreak		• PHA and NPHS Border teams/roles in place and are connected into Border Executive Board and agencies such as Customs and Immigration. • Polynesian Health Corridors and Global Health teams are well established		• General health advice in place at major NZ airports. Measles-specific messaging is ready to go • Pro-active follow up of affected flights into Australia for NZ bound travellers • Foreign language schools engaged with by NPHS to strongly advise students to get vaccinated before departure • NPHS engagement has occurred with MBIE on vaccination status of temporary workers		• Medical Officers of Health can direct a person to refrain from travelling outside of NZ. Sharing this information with a border agency or airline would need to be assessed for each case be would likely be justified in terms of the health information privacy code • No existing policy mandating that travellers (incoming and outgoing) must have their vaccinations up to date.

Red Risk identified that needs priority action and/or decision
Amber Some identified gaps or unknown vulnerabilities requiring targeted action
Green No concerns identified regarding preparedness

Te Pou Hauora Tūmatanui Public Health Agency

MANATŪ HAUORA MINISTRY OF HEALTH

Appendix 1 *(2 of 4)*
Measles Readiness Assessment: People, Parts and Policies

As of 22 March 2024

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment		
		People	**Parts**	**Policy**
Case and contact investigation and management	• Clear mechanisms established to stand up effective contact tracing in the short (first days) and medium (weeks) terms • Plans in place for managing surge capacity • Logistical means to isolate and support contacts and cases in place	• Increased public health surge capacity through establishment of the National Public Health Service • Further work is required to better understand surge workforce capacity across the response phases • Small national investigation service team in place to support activities • An agreement that provides outsourced out of hours surge capacity for operational tasks related to contact management ends in June 2024	• CDC Manual recently refreshed and up to date along with documents such as case/control management available • The new national Notifiable Diseases Management System is in place to enable national collaboration but is still bedding in. • Digital New Zealand Traveller Declaration (NZTD) available for contact tracing for travellers, but low use to date • The level of available immunoglobulin is insufficient for a large outbreak and further work is needed to confirm national access and delivery pathways	• Case isolation and contact quarantine requirements are voluntary. Mandatory requirements can only be made on an individual basis • There is a gap in operational capability to provide, at short-notice, wrap around support to individuals and groups to enable them to safely and effective isolate/quarantine when required.
Immunisation approach	• Focussed on most vulnerable to serious illness/sequelae • Focussed on those most likely to reduce size of outbreak (under-vaccinated populations) • Sufficient vaccine supply and means of re-distribution • Accessible services • Community-led prevention and outbreak response programmes supported • Workforce available for vaccination surge during outbreak	• Various Immunisation Taskforce recommendations are underway to support expansion of vaccinator workforce, including plans to simplify authorisation process • The existing vaccinator workforce continues to grow with the addition of pharmacy for MMR and could be deployed to assist with surge capacity	• Hauora Māori providers have received additional funding for immunisation activities • Aotearoa Immunisation Register (AIR) has been stood up but requires further development. • Data is available with details for most children who are overdue but not all children are captured, and AIR may not hold this information for older age cohorts • NPHS have confirmed there is sufficient stock of measles vaccine and rapid procurement of further stock possible if required • Good visibility and management of MMR stock across pharmacy via the Inventory Portal established for COVID-19 but GPs use the Pharmac stock management system which doesn't provide visibility of stock on hand once it is distributed to provider sites	• Current eligibility direction does not allow all measles susceptible individuals to receive free MMRs (e.g. seasonal workers, temporary residents aged over 18 years old) • s 9(2)(f)(iv) [redacted]

Appendix 1 *(3 of 4)*
Measles Readiness Assessment: People, Parts and Policies

As of 22 March 2024

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment					
		People		Parts		Policy	
Intelligence	• Effective systems for gathering information in place • Effective systems for distributing information in place • Intelligence is available to inform prevention and preparation activities • Planning and preparation has occurred in anticipation of intelligence needs should an outbreak occur		• Resources are available within NPHS, PHA and ESR to gather and generate intelligence.	• Measles case and contact data is available through EpiSurv and NDMS • The reporting functionality for data out of AIR and NDMS is not streamlined for automated reporting • Roles and responsibilities for commissioning and developing intelligence are not yet harmonised post health reforms • Initial modelling completed and need for more being considered • Report templates exist from prior outbreaks that will be re-used in the event measles outbreak • Plans exist to undertake an end-to-end simulation across measles from data entry to report • It is a challenge to maintain up-to-date distribution lists, especially in an evolving health structure		Immunisation data sharing agreements between Ministry of Education and HNZ in place for the purpose of enabling the provision of information to HNZ and statutory public health officers to assist the mitigation of an infectious disease outbreak Immunisation regulations provide for early childhood centres and primary schools to keep immunisation registers. These are potentially redundant given AIR
Laboratory testing and network	• Capability, capacity and networks exists to provide timely measles-related testing (PCR and serology) for case detection, contact management and effective outbreak control • Reporting systems in place		• NPHS is confident that both measles PCR and serology testing capacity is sufficient within existing contracted laboratories • Option exists to prioritise individual tests for processing and to engage additional laboratories for extra surge capacity	• Usually test turnaround times will meet requirements • There are sufficient laboratory supplies to support testing for an outbreak • All laboratories have systems for timely reporting of PCR results to Public Health Services • Modelling of outbreak scenarios and /or comparison with demand in prior incursions are needed to enhance confidence in evaluating capacity readiness		• Privacy Impact Assessment is underway to enable access to serology results in a delegated model
Infection Prevention and Control	• IPC guidance and expert advice is available and accessible • Providers can quickly access immune status of workforce • Health care workers are equipped to manage infection risk from measles cases • Systems are in place to effectively triage and isolate arriving patients in Airbourne Infection Isolation Room (AIIR)		• Infection Prevention and Control advice is now provided through limited resource in the Chief Clinical Officer's Team rather than a specialist team as occurred during COVID-19	• There are sufficient supplies of Personal Protective Equipment (PPE) for a measles outbreak via the national reserves stockpile • There is a need to better understand hospital capacity to ensure timely placement of patients in AIIR and contingency plans in place if AIIR capacity is exceeded • Accessible and robust guidance exists from IPC to manage measles risk within healthcare settings • General practice may have limited capacity for isolation		• Mask use requirements are governed by health and safety policy rather than legislation

Appendix 1 *(4 of 4)*

As of 22 March 2024

Measles Readiness Assessment: People, Parts and Policies

System Components	Assessment criteria for preparedness	Preparedness Readiness Assessment					
		People		**Parts**		**Policy**	
Primary care	• Primary care clinicians have easy access to best practice information • Workforce available to support prevention immunisation activities and surge during outbreak • Workforce available to support increased volume of consultations during an outbreak • Means in place for supporting routine (non-measles related) primary care during an outbreak • Transmission reduction mechanisms in place		• Within General Practice capacity is already constrained with shortages of both doctors and nurses • There is limited information on surge capacity for across all types of primary care services		• Up to date best practice information for measles is available via Health Pathways. • Virtual consultations will continue to be available • There are no systems that can ensure communications will reach all clinicians		• Funding to enable free access to consultations or testing for suspected cases or contacts when referred by Public Health Services is in place until 30 June 2024 with work is underway to extend this funding beyond the end of June.
Hospital and Specialist Services	• Isolation plans and facilities available with sufficient capacity • Plans in place for managing unknown numbers of seriously ill children (including potential transport of infectious individuals) • Immunity of staff has been confirmed and documented, with documentation readily available on short notice • Plans are in place to manage infection risk in Emergency Departments		• Limited information is currently available on workforce surge capacity for hospital services including PICU • Many specialties including Paediatrics are already impacted by workforce shortages • Documentation of staff immunity can vary and is not always readily available		• Hospitals have escalation plans to manage higher than normal volumes of people requiring assessment and/or hospitalisation • Modelling and/or comparison with demand in prior incursions may help inform confidence in preparedness and what additional actions need to be taken		
Public Information Management	• Clear allocation of responsibilities • Support available for rapid production of accurate and reliable information for the public (situation updates, disease information, and "what you need to do")		• Staff with communications expertise are available within NPHS Protection, NPHS Promotion and the PHA • Predicting the exact information and the necessary translations to address all potential outbreak scenarios is not feasible		• Templates for letters and other resources are prepared • Translated resources are available on the Te Whatu Ora website • The Pacific Public Health Directorate have developed and will roll out a Pacific specific National Emergency Communications Plan		• Clarification is needed on where the public spokesperson role would sit for the various outbreak scenarios e.g. national vs local
Other Government Agencies and sectors	• Clear roles and responsibilities • Effective communication and relationships between agencies • Mechanisms in place for health sector to support other agencies, including technical advice and communication resources		• NPHS has good working relationships with border staff • Health and Education work together at all levels: national, regional and local • Links with other sectors could be strengthened		• NPHS has specific resources to support educational settings including advice on infection prevention and control • NPHS could provide advice to schools to also collect robust information on immunisation status of staff and encourage MMR vaccination if not up to date • NPHS will continue to engage with MBIE re temporary workers		• Consider options for robust documentation of immunisation status of older students who did not receive childhood immunisation in New Zealand

Measles Identified in NZ → Public Health Initial Risk Assessment → IMT established → National Response Activated

Experiences tell us communicable diseases disproportionately impact Māori, Pacific and other priority populations. Our response system is enabled by a whole system approach to embed Te Tiriti & equity in planning and services; with community-led initiatives with local providers to improve vaccination coverage; and prioritising case and contact management activities to those most at risk, guided by intelligence, equity & clinical leadership

Primary care services are critical in reducing pressure on hospitals & other health services, however there is a lack of available staff (especially nurses) in these settings which could compromise the ability to manage outbreaks. Hospitals, districts, and regions would activate escalation plans to manage higher than normal and unanticipated volumes, supported by plans to support patient management in appropriate clinical areas. An outbreak would significantly impact ED and paediatric services which are under existing pressure

Version 3.0 | 07/05/2024

Function	Prepare (Pre Response) ▶ The impact of a measles outbreak is reduced through actions and the system is prepared to manage and support cases, contacts and their whānau should a measles outbreak occur	Measles case identified & response established	Stamp it out ▶ Intensive case management, contact tracing, source investigation and case finding to prevent transmission and return to a state of elimination	PHRA agrees to shift response	Focused Control ▶ Resources are prioritised to activities supporting outbreak control, focused on case management, high risk exposures and an ongoing focus on increasing MMR coverage

Vaccination	• Immunisation Taskforce direct actions to increase childhood immunisation coverage to:
	  • Review service delivery models to support outreach to priority populations
	  • Build vaccinator workforce capability through additional training providers, & national authorisation to expand capability of all vaccinators for infant immunisation
	  • Expand community pharmacy immunisations to include infant vaccines
	  • Strengthening newborn enrolment into health services from birth
	  • Communication campaigns to improve public trust / counter misinformation
	• s 9(2)(b)(ii) [redacted]
			• PHSs are supported by vaccination teams to provide prophylactic vaccination to exposed contacts and a ring vaccination approach to contact management (for contacts, contacts of contacts, schools and/or the wider community)
			• Offer MMR0 and a shorter gap between doses where appropriate.
			• Pop up clinics, extended hours & outreach programmes are targeted to areas at risk, enabled with local Māori, Pacific and community providers
			• Communication and engagement campaigns to provide information on vaccine safety and the risk of measles infection, using healthcare and lay champions
					• Ring vaccination, pop up clinics, extended hours and outreach continues
					• Mass vaccination events to meet increased demand driven by the outbreak.
					• Communications campaigns continue to support uptake of vaccine and address vaccine hesitancy

Surveillance	• Timely High Index of Suspicion (HIS) notifications support rapid response from local PHSs • National Focal Point (NFP) notifications alert us of onward travel to New Zealand to support contact tracing and quarantine if necessary • Horizon scanning and threat assessment with ESR • EpiSurv infrastructure as national database for reporting notifiable diseases • Monitoring Immunisation coverage rates to identify communities at risk of outbreaks		• Genotyping for all cases to link with known cases / clusters • Immunisation coverage maps support targeted response activities e.g. ring vaccination for affected communities and prioritised contact tracing • Modelling provides intel to identify communities at risk • Reporting demography, geography and key trends for cases and contacts • Case and contact data summarised by ethnicity and deprivation level • NFP notifications to the countries (including Pacific) of any contacts identified in NZ which have travelled to that country		• Genotyping as required to inform outbreak management • Modelling and coverage maps inform the prioritisation of response activities, supported by equity considerations / models • Continued reporting of demography, geography and key trends • Continued (and increasing) NFP notifications to countries of known contacts travelling overseas from NZ
Emergency Management Coordination	• Response Plans are reviewed, and the lessons learned from previous responses are incorporated • On call roster is maintained for critical public health emergency functions (nationally and regionally) • Coordinated Incident Management System (CIMS) training and exercising builds workforce capability for response management • Initial Assessment Team meetings when notified of events / incidents • Partnerships identified and maintained with key internal and external stakeholders		• Initial Assessment Team meeting assesses the scope, size and risk of the incident and establishes the response management structure • Incident Management Team (IMT) and Measles Clinical TAG stood up with subsequent meetings held to confirm actions, response objectives and a daily rhythm • Daily Situation Reports (SitReps) produced • Daily briefings to executive / governance / Ministers to support situational awareness		• IMT meetings & SitReps continue for the duration of the response. • Coordination of other internal health system capabilities e.g. hospitals and primary care capacity to ensure continuity of end to end health and support services • Leading engagements with key stakeholders (e.g. education) to enable the shift to focused control supported with public health recommendations • Management of concurrent events (e.g. floods, earthquakes) and the impacts
PCR / Serology Testing	• Mapping of the testing pathway for local districts is completed to understand gaps and address these to enable timely sample collection and processing of results • Contracts are in place with National Laboratory Network (NLN) providers for testing		• PCR testing for contacts with symptoms capacity 1,280/day, up to 1,900/day • Serology to confirm immunity in contacts (enabling release from quarantine) 1,278/day, up to 3,000/day max • Confident demand can be met for PCR & serology ability to contract from NLN • Separate testing sites can be established for measles as to not compromise other testing operations		• PCR testing for new unlinked cases and healthcare/high risk settings not offered for contacts who develop symptoms • Serology testing continues if capacity constraints, priority given to individuals/settings to enable continuity of essential services • Ability to contract additional PCR/Serology capacity from NLN
Contact Tracing (CTx)	• Contact tracing is a BAU public health activity for Communicable Diseases • A contract with a telehealth provider is in place for weekends and public holidays for a limited scope of operational contract tracing tasks (to 30 June 2024) this covers baseline support of 2 staff • Notifiable Disease Management System (NDMS) digital infrastructure has been launched to support Measles outbreaks including case investigation and contact tracing		• PHSs capacity can be fully utilised to support intense contact tracing efforts, enabled by delegation of work across the country via NDMS • Active management of all exposure events and all close contacts • Publication of locations of interest • Promote self management of unknown contacts • The telehealth contract can be leveraged although further funding would be needed to engage a further 8 staff for operational contact tracing tasks		• Sustainability of PHS capacity may be constrained or limited; with prioritisation of resources guided by the Measles Clinical TAG • Delegation of work across the country continues • Active management of high risk exposure events, with core public health guidance provided for other events • Publication of locations of interest continues • Increased self management of contacts according to risk • CTx surge capacity likely available if required & funding available
Quarantine & Isolation	• An interim arrangement is in place to 30 June 2024 for cases and disease contacts experiencing hardship to access short term manaaki support through the MSD Community Connectors service. The level of support is limited and the service will scale down from 1 July 2024 • A policy paper is being prepared by the Ministry of Health to explore broader policy questions and options to address gaps		• Expected high compliance from the public with recommendations to quarantine if they are a case, or a non immune contact • Directions can be made under the Health Act before there would be a requirement for orders to require people to quarantine • Interim arrangements in place for manaaki support through MSD Community Connectors can be used to support individuals and whānau (to 30 June 24)		• PHSs actively manage cases and high risk exposure events and contacts to follow quarantine protocols • Public Health guidance for contacts to quarantine • Additional manaaki support is likely to be required to support high volumes of cases and contacts
Communications	• A national measles communications plan informs PIM activity and provides a framework for communications between national and regional responses • Pacific Emergency Communications Plan supports culturally sensitive comms • Comprehensive measles information and public health advice including advice on ventilation is available to public & stakeholders through media, web and social media channels, print resources & campaign activities, including translated materials		• Initial PIM activity is focused on raising awareness of and containment of cases, supported by latest public health advice and the Pacific Comms Plan • National and regional public health communications staff and partner agencies are tasked to support as needed • Channels include proactive media opportunities, social media campaigns and advertising activity, and direct communication with communities		• PIM messaging evolves through the outbreak, reflecting prioritised activities including contact tracing, & the focus on immunisations • Comms targeted via channels for audiences & priority areas
Clinical Leadership	• Updates to measles resources including the CDC Manual, the Measles Public Health Outbreak Response Management Plan and public facing information • Measles Clinical TAG advises on clinical management to inform measles resources • Working with high risk settings e.g. education to support them to maintain registers of immunisation status of staff before an outbreak		• Clinical TAG meeting regularly to provide advice, supported by equity advice, to guide case and contact management and overall response activities • The Director of Public Health, in conjunction with the Measles Clinical TAG conducts Public Health Risk Assessments to determine if the response should pivot		• Clinical TAG & equity advice supports preparations to move phases • Clinical advice guides prioritisation of resources / activities • Public health guidance supports people to self identify if they've been exposed at a location of interest, check vaccination status, quarantine / isolate and seek medical care if symptoms develop
Health at the Border	• Standard health messaging has been replaced by measles specific messaging at international airports, recognising the high risk of importing measles • CTx details received from Customs on travellers who may have been exposed measles • Border workforce receive messaging on the importance of immunisations • [illegible] with Customs on NZTD build and information sharing agreements Customs programme to lift NZTD use from 30% to 70% by December 2024		• Specific measles messaging supports travellers to seek health services if required • Direct access to NZTD CTx info via Information sharing agreements (by June) • MoUs are leveraged with other government agencies and Air New Zealand to obtain CTx and refer to PHSs for assessment and management		• Specific measles messaging continues to be in place • NZTD measures continue to support response activities • Data Quality and increased uptake of NZTD will be more critical in a focused response phase where contact management is prioritised and self management increases

Aide-Mémoire

Review of measles readiness assessment – report from local expert group

Date due to MO:	21 June 2024	**Action required by:**	N/A
Security level:	IN CONFIDENCE	**Health Report number:**	H2024043986
To:	Hon Dr Shane Reti, Minister of Health		
Consulted:	Health New Zealand: ☒		

Contact for telephone discussion

Name	Position	Telephone
Dr Andrew Old	Deputy Director General, Public Health Agency, Ministry of Health | Te Pou Hauora Tūmatanui	s 9(2)(a)
Dr Nicholas Jones	Director of Public Health, Public Health Agency | Te Pou Hauora Tūmatanui	s 9(2)(a)

Aide-Mémoire

Review of measles readiness assessment – report from local expert group

Date due:	21 June 2024		
To:	Hon Dr Shane Reti, Minister of Health		
Security level:	IN CONFIDENCE	**Health Report number:**	H2024043986

Purpose

1. This aide-mémoire provides you with the independent report 'External Assurance Review for Measles Epidemic Preparedness' (attached as Appendix 1), from the expanded National Verification Committee for Measles and Rubella Elimination (NVC), and outlines proposed next steps.

Context

2. In March 2024 you were provided with the Ministry of Health's (the Ministry) assessment of the health system's preparedness to respond to a potential measles outbreak in New Zealand (H2024036756 refers).
3. You subsequently requested, in April 2024, independent expert reviews of this assessment. Following a discussion with the Director-General of Health, you agreed to use the existing NVC with two additional members who have specific public health and outbreak management expertise for a local review, and to approach the World Health Organization to provide an international perspective.
4. The Ministry is expecting to receive the international review (conducted by Dr Chung-won Lee and Dr Xiaojun Wang from the World Health Organization Regional Office for the Western Pacific) on 21 June 2024.

External Assurance Review for Measles Epidemic Preparedness

A review of the Ministry's assessment was undertaken by the expanded NVC

5. The expanded NVC includes the membership of:
   a. Dr Corina Grey (Chair)
   b. Dr Nikki Turner
   c. Dr Rawiri McKree Jansen
   d. Dr Timothy Blackmore
   e. Dr Tony Walls
   f. Dr Gerard Sonder (additional member)
   g. Dr Marion Poore (additional member).

6. This group met on 23 May 2024 for a one-day workshop to conduct their review and consider whether the Ministry's assessment was adequate, comprehensive, and accurate. The NVC report summarises their review of the Ministry's assessment and puts forward recommendations to strengthen preparedness.
7. The Ministry provided secretariat resource to the NVC, including support with writing the final NVC report. The findings in the report reflect the independent views of the expanded NVC and have been approved by them.

Key findings

8. The key finding of the NVC review is that the Ministry's assessment was 'comprehensive [but] …. overly optimistic in some areas'.
9. The NVC identified five overarching themes to their findings that cut across multiple aspects of outbreak preparedness. The NVC report states that addressing these broad system level issues is essential for comprehensive outbreak preparedness. The five themes are:
    a. lack of clarity over governance arrangements and leadership functions
    b. inadequate prioritisation of urgent actions
    c. missed opportunities for better integration and coordination across the health sector
    d. insufficient emphasis on localised flexible responses
    e. inadequate funding and resources to support preparedness work.
10. The NVC report provided six urgent recommendations (to be completed by December 2024) and four longer term recommendations (to be completed by mid-2025) to strengthen measles outbreak preparedness. It recommended these latter recommendations be incorporated into broader outbreak planning.

Initial comments

11. The Ministry and Health NZ (National Public Health Service) acknowledge and accept all 10 recommendations from the NVC report and note that most recommendations align with current and planned activities. However, we will review these activities to determine if they need to be re-prioritised and aligned with the NVC report recommendations, and if additional work is required.
12. We agree with the urgent recommendation to 'clarify governance arrangements' and identify an enduring group to provide oversight for outbreak prevention, preparedness and response, and the need for this to be broader than measles outbreak planning. We will consider the scope and function for this group and provide further advice.
13. Of the longer-term recommendations, recommendation one 'develop a plan to protect Pacific Island Countries in the event of a New Zealand outbreak' identifies a gap in our assessment and we do not currently have clear actions planned. The single most effective way of preventing export of measles to the Pacific from New Zealand is to adequately prepare for, and respond to, any local outbreaks. In light of this recommendation we will consider next steps to address this more specifically, and provide further advice as part of our review process.
14. The report also raised concerns that the 'people, parts, and policies' Red, Amber, Green (RAG) assessment did not provide a sufficiently clear strategic focus and may not be the best

mechanism for providing ongoing assurance and monitoring activity. We will review the current RAG assessment and provide you with advice about incorporating it into an enduring, fit-for-purpose monitoring and assurance mechanism.

Next Steps

15. The Ministry is expecting to receive the international review of our measles readiness assessment on 21 June 2024. We will provide you with a copy of the international review shortly thereafter, along with our initial comments.
16. Following receipt of the international review, the Ministry will work with Health NZ to review and integrate the findings and recommendations from both the NVC review and the international review, into the ongoing work programme for measles outbreak preparedness.
17. We will provide you with a consolidated and prioritised work plan to address these recommendations, including an updated readiness assessment, by the end of July 2024.

Dr Andrew Old
Deputy Director-General
Public Health Agency | Te Pou Hauora Tūmatanui

Appendix 1: External Assurance Review for Measles Epidemic Preparedness

External Assurance Review for Measles Epidemic Preparedness

National Verification Committee for Measles and Rubella Elimination

June 2024

Foreword

Measles, the most infectious vaccine-preventable disease, was certified as eliminated in New Zealand by the World Health Organization in 2017. However, with current measles, mumps and rubella (MMR) vaccination rates well below the necessary 95% coverage, New Zealand is at imminent risk of losing this status.

We are deeply alarmed by the persistent decline in childhood immunisation coverage and the failure of current efforts to address this. A different approach is urgently needed to improve immunisation coverage. Further, with the number of children susceptible to measles growing, we need to rapidly undertake catch-up immunisation to close the immunity gap, starting in early childhood education centres and primary schools. Detailed recommendations for improving immunisation coverage are beyond the scope of this report; however, we can provide these if requested by the Minister of Health.

This report assesses the Ministry of Health's review of measles epidemic preparedness and underscores the urgent need for action. Timely MMR vaccination is by far more impactful and cost effective than outbreak response. Focusing on closing the immunity gaps especially in primary schools should remain the priority. However, we must urgently prepare for a significant measles outbreak, as over 500,000 people in New Zealand are susceptible to measles. The principles discussed herein also apply to other communicable disease threats facing New Zealand, including influenza, pertussis and highly pathogenic avian influenza.

While the disruption and confusion of roles and responsibilities may be part of establishing new health entities, it is vital for senior leadership to recognise and address these issues urgently. Without clear governance, leadership and decision making, any outbreak response will fail.

We commend Hon Dr Shane Reti, the Minister of Health for recognising the threat that a significant measles outbreak poses and the importance of this work to prepare. We have appreciated the opportunity to be part of this external review. We also recognise the substantial efforts of the Ministry of Health and Te Whatu Ora - Health New Zealand in working to strengthen outbreak readiness. We encourage the health sector to fully embrace the recommendations in this report. Without deliberate and urgent action, New Zealand will experience a large measles outbreak.

The National Verification Committee for Measles and Rubella Elimination

Executive Summary

This report from the National Verification Committee provides our external review of the Ministry of Health's (The Ministry's) self-assessment of measles epidemic preparedness across the health system. We considered whether the assessment was adequate, comprehensive and accurate. We note that the outbreak principles discussed and the findings of the review should be incorporated into broader outbreak planning, as they are directly applicable to other notifiable infectious diseases. Measles outbreak readiness should not be considered in isolation.

Key Findings

The Ministry provided an extensive assessment based on a range of criteria. While the Ministry's assessment was comprehensive, we found it to be overly optimistic in some areas. We identified the following recurring themes across our review:

(i) a lack of clarity over governance arrangements and leadership functions;
(ii) inadequate prioritisation of urgent actions;
(iii) missed opportunities for better integration and coordination across the health sector;
(iv) an insufficient emphasis on localised flexible responses; and
(v) inadequate funding and resources to support preparedness work.

Summary of Recommendations

The following recommendations are a summary of the more detailed recommendations included in this report.

Urgent Recommendations

1. Agree strategic and operational leadership functions

- Clarify, agree and communicate in advance strategic and operational leadership roles and responsibilities in the event of an outbreak.

2. Clarify governance arrangements

- Identify an enduring group to provide oversight for outbreak prevention, preparedness and response.

3. Review, evaluate and implement a strategic work programme to increase immunisation coverage to 95% equitably by geography, ethnicity and socioeconomic status

- Apply a systematic approach to three distinct aspects of immunisation:
  - Timely childhood immunisation
  - Catch-up for those aged 16 months – 50 years, prioritising preschool and primary school initially
  - Immunisation approaches during an outbreak response

- Update school immunisation registers and extend to include all education staff
- Standardise and improve the assessment and documentation of the immune status of all hospital and other frontline health staff

4. Ensure there is a fit-for-purpose national surveillance system for notifiable diseases

- Prioritise adequate ongoing investment and resources in national surveillance systems to:
    - Ensure New Zealand's surveillance system meets legal requirements and adheres to data quality standards
    - Review the integration of NDMS with EpiSurv
    - Utilise the Communicable Disease Control Manual to support the use of standardised case definitions and public health measures
- Appoint experts in the science of public health surveillance and surveillance systems to conduct further detailed work. This should involve Medical Officers of Health and National Public Health Service (NPHS)
- Ensure effective and timely distribution of information and intelligence from the surveillance system

5. Extend MMR eligibility to everyone in New Zealand

- Extend MMR eligibility to everyone susceptible to measles in New Zealand, with high priority given to Recognised Seasonal Employer (RSE) workers from the Pacific region

6. Ensure national outbreak planning, funding and coordination of key outbreak support functions, including:

- A comprehensive outbreak communication plan
- Laboratory capacity and capability
- Immunoglobulin management during outbreak situations
- Sufficient MMR vaccine supply with a clear prioritisation of use

Longer-term Recommendations

1. Develop a plan to protect Pacific Island Countries in the event of a New Zealand outbreak

2. Provide support for cases and contacts to isolate and quarantine

3. Ensure integration of primary care into outbreak response plans

4. Strengthen cross-agency collaboration

Contents

Section One: Background

In March 2024, the Ministry, in partnership with Te Whatu Ora - Health New Zealand (HNZ) and Te Aka Whai Ora - Māori Health Authority, undertook a self-assessment of measles epidemic preparedness across the health system (see **Appendix One** for a full list of teams involved). This self- assessment was undertaken amid growing concerns that low MMR immunisation coverage and the increasing incidence of measles globally would lead to a measles epidemic in New Zealand. The Ministry's self- assessment concluded that New Zealand is generally well prepared for a measles outbreak but identified several areas for improvement. A cross-agency work programme was established to address these areas.

In April 2024, the Minister of Health, Hon Dr Shane Reti, commissioned an external review of the Ministry's measles outbreak readiness assessment. This external review was conducted by New Zealand's National Verification Committee for Measles and Rubella Elimination (NVC), with two additional members co-opted for their specific public health and outbreak management expertise (see **Appendix Two** for a list of committee members).

The NVC was established in 2016 to review and validate the annual progress reports on the elimination of measles and rubella, and maintenance of that status, and reports to the Regional Verification Commission hosted by the World Health Organization (WHO) Western Pacific Regional Office.

Given the perceived high risk of a measles incursion, we, the NVC, undertook a rapid review to consider whether the Ministry's self-assessment was adequate, comprehensive and accurate. (See terms of reference in **Appendix Three**). We completed a desktop review of supplied documentation, met together for a one-day workshop, and had subsequent discussions by email and video conference. The Ministry provided the documents listed in **Appendix Four**. The time available for the review was limited, thereby limiting scrutiny of the available supporting material. Staff from the Ministry assisted in compiling this report.

This report summarises our review of the Ministry's assessment and puts forward recommendations to strengthen preparedness. It is informed by our professional experience, subject matter expertise and operational knowledge of past measles and other infectious disease outbreak responses.

Section Two: Findings

The Ministry provided an extensive assessment based on a range of criteria. While we agreed with the criteria used, we found the Ministry's assessment to be overly optimistic in some areas.

We identified several overarching themes to findings across multiple aspects of outbreak preparedness and response and have summarised the most critical of these in this section.

Our detailed findings follow the structure of the Ministry's assessment and are organised across the following system areas:

- Governance and leadership
- Immunisation approach
- Surveillance and Intelligence
- Case and contact investigation and management
- Laboratory testing and network
- Border
- Primary care
- Public information management
- Other government agencies and sectors
- Wider health system: hospitals and infection prevention and control

Key Overarching Themes

We have summarised overarching themes to our findings which cut across multiple aspects of outbreak preparedness. Addressing these broad system level issues is essential for comprehensive outbreak preparedness.

Lack of clarity over governance arrangements, strategic and operational leadership to enable effective decision making

Across every aspect of outbreak prevention, preparedness and response, there is a recurring theme of confusing governance arrangements and unclear roles and responsibilities for strategic and operational leadership. This lack of clarity risks confusion across the health sector and consequent failure to make timely and appropriate decisions.

Inadequate prioritisation of urgent actions

While the Ministry's assessment of measles outbreak preparedness was extensive, we found the people, parts and policy framework did not effectively prioritise the relative importance of different areas or provide a clear strategic focus. Certain risks identified as 'amber' or 'red' required more emphasis due to their critical role in outbreak preparedness, while others did not seem to significantly contribute to overall readiness.

Missed opportunities for better integration and coordination

Many aspects of the system suffer from poor integration and coordination, resulting in a disconnect between national strategies and local operational activities, including contracting. Effective outbreak support functions require local autonomy but also national coordination. This includes surveillance systems, laboratory planning and preparedness and the integration of primary care into a response.

Insufficient emphasis on localised flexible responses

The importance of local outbreak responses led by experienced public health professionals, aligned with the responsibilities and privacy matters outlined in the Health Act 1956 and Privacy Act 2020, was not sufficiently emphasised in the Ministry assessment. Managing outbreaks requires distinct approaches for each infectious disease given the differences in transmission routes, transmissibility and control measures.

Inadequate resource allocation for preparedness

There are significant concerns about preparedness in terms of resource allocation. Vaccine supply, laboratory testing capabilities, primary care role were either insufficiently captured or over optimistically rated. Better planning, clear prioritisation and national coordination of resources and funding in advance are needed to ensure readiness.

Detailed Findings

Governance and Leadership

Despite a number of documents and updates from the Ministry and HNZ, there was a lack of clarity with governance arrangements and a concerning disconnect between national and local teams. This is despite the existence of multiple governance and leadership groups. The initial assessment by the Ministry was undertaken when Te Aka Whai Ora was operational and there was no evidence of an updated assessment of the current Māori leadership capacity, given subsequent further health system reforms. We found the assessment did not clearly articulate the interconnected but distinct areas of governance arrangements, leadership at national and local levels and technical advice.

We note several senior leadership roles within the Ministry and the NPHS are involved in outbreak responses, including but not limited to:

- the Director of Public Health (Ministry),
- National Director of NPHS,
- the National Director of Health Protection (NPHS)
- the Clinical Director of Health Protection (NPHS); and
- the Regional Clinical Directors (NPHS).

It is unclear how these roles integrate and manage day-to-day outbreak response control.

We recognise work is underway to address some of these issues, however, there has been insufficient progress since the assessment in March 2024. It is critical to expedite these efforts due to the importance of governance, leadership, and technical expertise which impact and influence almost every aspect of outbreak response.

Immunisation Approach

Outbreak prevention through timely MMR immunisation is more important, impactful and cost-effective than responding to an outbreak A coordinated effort into increasing immunisation coverage will pay huge dividends.

The Ministry's assessment merged three distinct but interconnected aspects of immunisation: routine childhood immunisation, catch-up immunisation programmes (with the first priority to focus on preschool and primary schools) and the immunisation response to cases and outbreaks. The approach to

the latter was unclear. This plan will need to include arrangements for out-of-hours access, plans for upscaling of workforce, vaccine supply considerations and address the limitations of the Eligibility Direction (which sets out who is eligible for free or subsidised healthcare in New Zealand).

We note that the Health (Immunisation) Regulations 1995 leaves gaps in intermediate and secondary school immunisation coverage data and there is no requirement for documenting evidence of staff immunity. The introduction of the Aotearoa Immunisation Register (AIR) provides an opportunity to improve data access and sharing and review the best approach to ensuring accurate and accessible immunisation registers in educational institutes. In an outbreak response, it is critical to ensure Public Health Services (PHS) and Medical Officers of Health have access to this data to enable timely public health action.

The documents provided to us did not address our concerns about the supply of MMR vaccine stock in the event of an outbreak, as well as the planning and prioritisation of its use. In an outbreak we would expect to see a substantial increase in people wanting to be immunised, even if not an immediate contact and it is crucial to ensure there is a both sufficient supply of the vaccine, accessibility and workforce to administer it. Clear priorities for vaccine use in an outbreak need to be agreed in advance, to effectively and equitably manage:

- Post-exposure vaccination of contacts
- Ring vaccination to support outbreak control
- Responding to increased demand for catch-up MMR vaccination
- Maintaining ongoing childhood immunisation programmes
- Preparing for potential (global) stock shortages.

Surveillance and Intelligence

A high-quality public health surveillance system is crucial for effective infectious disease control in New Zealand. The Ministry's assessment failed to adequately capture the role and importance of surveillance and intelligence for measles as a notifiable disease. There were gaps in the assessment, particularly the lack of consideration of the legislative and policy frameworks that are foundational to the New Zealand notifiable disease surveillance system.[1]

The Ministry's assessment was overly optimistic and did not reflect potential shortcomings in data quality and the subsequent impacts on measles outbreak preparedness and response. From the documents provided, it is unclear whether the current surveillance system meets the criteria for national surveillance under the Health Act 1956, international requirements under the IHR, and the specific requirements for measles surveillance necessary for maintaining elimination status.

The documents provided suggest the Notifiable Disease Management System (NDMS) supports high-quality surveillance data. We note the NDMS is an operational system for case and contact management developed during the Covid-19 response and was not developed around national surveillance criteria as set out by The Institute of Environmental Science and Research (ESR) or the requirements of the Health Act 1956. NDMS is a contributor to deteriorating surveillance data quality and cannot be regarded as a surveillance system.

[1] See: the Health Act 1956; Manual for Public Health Surveillance in New Zealand, ESR 2006; Guidance on Infectious Disease Management under the Health Act 1956, Ministry of Health 2017; the International Health Regulations (IHR) 2005; Guidelines on verification of measles and rubella elimination in the Western Pacific Region Second Edition. World Health Organization Regional Office for the Western Pacific. 2018.

NDMS also does not integrate with the official current national notifiable disease surveillance system database, EpiSurv. This lack of integration bypasses EpiSurv's standardised uniform surveillance data collection and quality control mechanisms, further impacting data quality.

Additionally, we could not be assured that there is an effective system for disseminating critical surveillance information. This includes providing national surveillance data reports, to the right people, such as outbreak response teams at national and local levels. This system needs to also be compliant with the Privacy Act 2020 to maintain confidentiality of sensitive data. We also could not be certain that existing situational report templates meet the information needs or are of sufficient quality for a measles outbreak.

We acknowledge the complex and technical nature of the surveillance system. Some issues need addressing at a system level, extending beyond measles epidemic preparedness work to all notifiable diseases. A full discussion and recommendations on these issues are beyond the scope of this report and more detailed advice should be sought from public health experts.

Case and Contact Investigation and Management

In our review, the Ministry's assessment of gaps in this area appears accurate. The establishment of NPHS has improved surge capacity and public health expertise at a national level, but there are risks with over-centralisation and non-public health incident managers. There was insufficient emphasis on the need to have experienced public health physicians leading outbreak response and decision making, on a local as well as on a national level. As already highlighted, roles and responsibilities must be clarified ahead of an outbreak, including a clear process of when to move from one stage to the next.

It was not clear from the documents provided, but we want to underscore that outbreak preparedness and response requires distinct approaches from COVID-19 strategies. Given measles high transmissibility contact tracing has limited effectiveness beyond the early stages of an outbreak. As a result, it is essential to implement adaptable local and regional responses, to ensure sustainable and proportionate responses which avoid unnecessary adverse economic and social impacts.

Laboratory Testing and Network

The role of laboratory testing is not clearly articulated in the Ministry assessment. Polymerase chain reaction (PCR) testing is essential for the first measles cases to establish whether the case is due to wild type or vaccine virus. This becomes less important as case numbers increase. Serological testing can be used to establish whether an exposed person is immune if there is no accurate vaccination record. The need for testing will depend on whether the exposed person was born in New Zealand or overseas, their age and how easy it is to confirm vaccine history. Improving records of immunisation will alleviate some pressures on the laboratory system in the event of an outbreak.

In planning documents, we found a lack of focus on resilience in the assessment of risks. Too often laboratory services during an outbreak are reliant on goodwill and lack appropriate funding and contracts. The information provided in the Ministry's assessment was too optimistic and failed to describe:

- Testing delays for regions of the country without a local major laboratory
- The differences in lab processing times during weekends and public holidays
- The need for adequate stockpiles of laboratory reagents to be held and sufficient staff to perform extra testing to meet increased demand and national coordination of these factors

Border

The priority at the border needs to include ensuring that we do not export measles to the Pacific as happened in 2019 with devastating consequences for Samoa. We found no evidence of a clear strategy to prevent New Zealand from exporting measles to the Pacific in the event of another outbreak, which should be fundamental to any measles preparedness work. Extending MMR eligibility to every susceptible person in New Zealand, with prioritisation of RSE workers, should be part of this strategy.

There is room to strengthen work with border agencies to ensure messaging reaches inbound travellers, including the use of New Zealand Traveller Declaration and encouraging vaccination pre-departure.

Primary Care

The broad primary care network, including general practices and other primary care services such as pharmacies and hauora Māori partners, are essential in the response to measles outbreaks. It is vital they have strong links with operational public health. The Ministry assessment did not sufficiently emphasise the role of primary care in a public health response nor was this role adequately defined. It remains unclear:

- what is expected of all types of primary care providers in an outbreak, at a local or national level, and if there is adequate funding in place to support preparedness and outbreak response; and
- how primary care is integrated into Incident Management Teams.

Public Information Management

Effective communication during an outbreak is vital. Although the Ministry assessment noted a strong Pacific communication plan, we were not provided with the plan to assess its veracity, nor did we see confirmation of its endorsement by Pacific communities. There was an absence of comment or rating regarding a Māori communication plan.

The use of social media, local champions and strategies to address disinformation and misinformation should all be part of public information management and nationally coordinated, but these elements were not evident in the assessment.

Other Government Agencies and Sectors

Many agencies were missing from the initial assessment and it was unclear how the agencies that were mentioned are working together, if at all. Education and Health is a key partnership which needs to be strengthened to support both agencies working to increase immunisation coverage, but also to mitigate the impacts of potential outbreaks. Many lessons on cross-agency collaboration were learnt during the COVID-19 response and weren't captured in the planning but should be implemented.

Wider Health System: Hospitals and Infection Prevention and Control

While the hospital system and Infection Prevention and Control (IPC) are essential components of the healthcare system, they are less of a priority in measles preparedness planning. There are multifaceted workforce issues across the health sector that limit surge capacity and extend beyond the context of measles and will take time to address. Healthcare workers are already required to have had the MMR vaccine and are immune (though we note inconsistent occupational health processed related to documentation of immunity). In addition, personal protective equipment is generally insufficient to contain highly transmissible diseases like measles. IPC is a fundamental aspect of healthcare that extends beyond measles and requires a comprehensive national strategy.

Section Three: Recommendations

Our recommendations focus on the most critical aspects and are prioritised based on their potential impact, drawing from our expertise, experiences, and the documents provided. Given that these outbreak principles apply to all notifiable infectious diseases, implementing these recommendations will strengthen overall outbreak prevention, preparedness and response.

Several recommendations reinforce action points noted in the original assessment, which we have either reiterated or expanded due to their critical nature. Strengthening outbreak preparedness requires adequate funding and resource, without these, initiatives are unlikely to achieve their intended impact.

We have categorised the necessary actions into two levels: **urgent** priorities and **longer-term** priorities**.**

Urgent Recommendations

We expect plans to address these points within **two months**, with the majority of actions completed by December 2024. These recommendations are presented in order of priority.

1. Agree strategic and operational leadership functions

- **Operational and strategic leadership roles and responsibilities in the event of an outbreak must be agreed, understood and communicated in advance**. This is fundamental to a successful outbreak response and enables efficient and timely decision making.

- **Roles and responsibilities need to be aligned with the Health Act 1956**.

2. Clarify governance arrangements

- **Identify an enduring group to provide oversight for outbreak prevention, preparedness and response.** This should utilise an existing group if possible, focusing on simplifying and consolidating the multiple and confusing governance arrangements across the health system. The group's focus should be broader than measles.

3. Review, evaluate and implement a strategic work programme to increase immunisation coverage to 95% equitably by geography, ethnicity and socioeconomic status

- There need to be a systematic approach to three distinct aspects of immunisation:

    1. **Timely childhood immunisation:** This should be the most important priority, with an aim to ensure each new annual cohort of children has equitably received MMR with at least 95% coverage. Equity is particularly crucial by geography, ethnicity and socioeconomic status. While there is significant current focus on the declining immunisation coverage rates, the current approaches at times appear to be lacking coordination and integration at many levels. At the local level, more can be done by establishing community hubs and focussing on building trust with local communities. This needs to include effective local communications and contracting.

2. **Catch-up for those aged 16 months – 50 years:** Addressing the immunity gap requires a dedicated strategy and approach. Catch-up should have an initial focus on those aged 16 months to 9 years as the highest priority susceptible population. This needs to include collaboration with ECEs and schools, as high-risk settings for measles outbreaks. The second stage focus should include high schools and younger adults.

3. **Immunisation during an outbreak response:** An outbreak immunisation approach needs to be central to planning, with clear roles, responsibilities and an implementation strategy ahead of any outbreak. This must be an equity-focused, prioritised response incorporating learnings from the 2019 measles outbreak.

- **Update School Immunisation Registers and extend to include all education staff**
    - Collaborate with the education sector to ensure accurate and accessible records of student and staff immunity across educational institutes, utilising the AIR
    - Prioritise ECEs, Kōhanga Reo and primary schools, followed by secondary schools
    - Ensure local PHS and Medical Officers of Health are integrated into this work
- **Standardise and improve the assessment and documentation of health staff immune status**

4. Ensure there is a fit-for-purpose national surveillance system for notifiable diseases

- **Prioritise adequate ongoing investment and resources in national surveillance systems to ensure:**
    - New Zealand's surveillance system meets legal requirements under the Health Act 1956 and the International Health Regulations, and adheres to data quality standards
    - Review the integration of NDMS with EpiSurv
    - Utilise the Communicable Disease Control Manual to support the use of standardised case definitions and public health measures
- **Appoint experts in the science of public health surveillance and surveillance systems to conduct further detailed work. This should involve Medical Officers of Health and NPHS**
- **Ensure effective and timely distribution of information and intelligence from the surveillance system**
    - Use existing communication channels, such as Public Health AIDE, and address disconnections between national and local levels within the health sector
    - Ensure critical information reaches the appropriate people promptly, avoiding repetition and information overload, whilst ensuring compliance with the Privacy Act 2020

5. Extend MMR eligibility to everyone in New Zealand

- **Extend MMR eligibility to everyone susceptible to measles in New Zealand**, including non-residents over 18
- High priority for MMR must be given to Recognised Seasonal Employment (RSE) workers from the Pacific region

6. Ensure national outbreak planning, funding and coordination of key outbreak support functions

Key priorities are:

- **A comprehensive outbreak communication plan**
- **Laboratory capacity and capability**
    - Integrate laboratory planning with wider outbreak planning and include both PCR and serology testing
    - Interrogate testing arrangements for regional areas and out of hours services
    - Provide appropriate funding to ensure readiness and stockpiles of reagents
- **Immunoglobulin management during outbreak situations**
    - Assess and ensure sufficient immunoglobulin stock for projected needs
    - Establish clear national guidance and local pathways for appropriate use, including reprioritisation in times of shortage
    - Identify clear responsible entities for development and maintenance of local pathways for use of immunoglobulin
- **Sufficient MMR vaccine supply with a clear prioritisation of use**
    - Develop a robust plan for managing vaccine stock and clear prioritisation to handle national and global shortages and facilitate outbreak prevention through catch-up campaigns and timely childhood immunisation
    - This needs to include immunisation strategy in the event of an outbreak, including ring vaccination

Longer-term Recommendations

These recommendations should have plans in place by **three months**. Recognising that some involve complex policy development, we would expect actions to be completed by mid-2025.

1. Develop a plan to protect Pacific Island Countries in the event of a New Zealand outbreak

- Agree an approach to prevent the exportation of measles to Pacific Island Countries in the event of an outbreak in New Zealand

2. Provide support for cases and contacts to isolate and quarantine

- Provide income support and access to essential needs such as food and medications to minimise hardship due to public health measures

3. Ensure integration of primary care into outbreak response plans

- Explicitly include primary care and clearly define the role and expectations in an outbreak response, including funding mechanisms to support this
- Develop a strategic approach to communication from NPHS to primary care for timely and streamlined information sharing

4. Strengthen cross-agency collaboration

- Confirm and clearly outline the role of other sectors and progress steps required to strengthen cross-agency collaboration, this should include Ministry of Education, Ministry of Social Development, Ministry of Business, Innovation and Employment and Immigration New Zealand
- Include Whakarongorau (the national telehealth service), New Zealand Blood Service and primary care providers as key stakeholders in healthcare planning

Appendix One: Contributing Teams to the Measles Epidemic Preparedness Assessment March 2024

Agency	Teams/Groups
Manatū Hauora | Ministry of Health	PHA – including Office of the Director of Public Health, Intelligence Surveillance and Knowledge, Global Health, Polynesian Health Corridors, Pacific Health, Māori Health, Public Health Policy & Regulation Group
	Strategy, Policy and Legislation
	Health Legal
Te Whatu Ora | Health New Zealand	NPHS Protection
	NPHS Prevention
	NPHS Intelligence
	NPHS Pacific health
	NPHS Hauora Māori Tūmatanui
	NPHS - Northern Region (formally known as Auckland Regional Public Health Service)
	NPHS Regional Clinical Directors
	NPHS Health Promotion
	Office of the National Director, NPHS
	Hospital and Specialist Services
	Commissioning
	People & Communications
Te Aka Whai Ora | Māori Health Authority	Public and Population Health
The Institute of Environmental Science and Research	
Pharmac	
Laboratories (that provide measles testing)	

Appendix Two: Committee Members and Areas of Expertise

Dr Corina Grey (Chair), Public Health Physician and Epidemiologist, Deputy Secretary Policy & Insights, Ministry for Pacific Peoples

Dr Timothy Blackmore, Infectious Diseases Physician and Microbiologist, Health NZ: Capital, Coast and Hutt Valley and Awanui Laboratories

Dr Rawiri McKree Jansen, Specialist General Practitioner, previously Chief Medical Officer, Te Aka Whai Ora and Hauora Māori Services Health NZ

Dr Osman David Mansoor, Public Health Physician and Medical Officer of Health, National Public Health Service, Health NZ Tairāwhiti

Dr Marion Poore, Public Health Physician and former Medical Officer of Health

Dr Gerard Sonder, Public Health Physician and Epidemiologist, Pacific perspectives Ltd and Faculty of Medical and Health Sciences, University of Auckland

Dr Nikki Turner, Professor, Dept of General Practice and Primary Care, University of Auckland and Medical Director, Immunisation Advisory Centre

Dr Tony Walls, Infectious Diseases Specialist and Paediatrician and Professor, Dept of Paediatrics, University of Otago Christchurch

Areas of subject matter expertise include:

- communicable disease control
- public health
- primary care
- paediatrics
- Māori health
- Pacific health
- immunisation
- microbiology and hospital infection prevention and control
- epidemiology
- paediatric and adult infectious disease
- outbreak management

Appendix Three: Review Terms of Reference

Special Meeting of the National Verification Committee for Elimination of Measles and Rubella

Measles Epidemic Preparedness Independent Review 2024: Terms of Reference

Background

New Zealand is vulnerable to a significant measles epidemic or multiple outbreaks due to low MMR vaccination coverage. Ultimately, improving MMR vaccination rates is the best way to protect from measles outbreaks, and an extensive programme of work is underway to address this issue. However, improving immunisation coverage will take time, and in the interim, it is crucial that New Zealand is prepared to respond rapidly and effectively to a measles epidemic. New Zealand also has a responsibility to prevent the export of measles to its Pacific Island neighbours and the wider global community.

In light of this, Hon Dr Shane Reti, Minister of Health, requested an assessment of New Zealand's readiness to respond to a significant outbreak or epidemic. Throughout March 2024, the Public Health Agency (PHA) within the Ministry of Health, along with Te Whatu Ora | Health New Zealand (HNZ), and Te Aka Whai Ora | Māori Health Authority, conducted a measles epidemic readiness assessment.

The readiness assessment concluded that New Zealand is generally well prepared but noted a number of areas that can be improved upon. A cross-agency programme of work has been established to address the areas identified for improvement.

Review Purpose

The Minister of Health has now requested an independent review of the measles epidemic readiness assessment to provide assurance that the assessment and work programme efforts are adequate and robust.

Review Members

The review is to be conducted by the National Verification Committee for Elimination of Measles and Rubella (NVC) plus additional members (the Committee).

The existing NVC Terms of Reference (ToR) will remain applicable. In addition, members should not have contributed to the readiness assessment. The terms outlined in this document will only apply to the independent review of the measles epidemic readiness assessment.

Appointment of Additional Members

Additional members are appointed by the Director of Public Health and have been chosen to ensure expertise in measles outbreak response.

Review Scope

The review will:

- Review the readiness assessment briefing and papers provided to the Minister
- Consider whether the readiness assessment is adequate, comprehensive and accurate
- Advise whether the programme of work across agencies, including prevention, is appropriate and adequate to address any gaps in readiness

- Offer expert advice to the Minister of Health regarding measles outbreak preparedness
- Provide recommendations to improve measles outbreak preparedness, including:
    - Opportunities to improve equity of outcomes for Māori, Pacific and other at-risk groups
    - Opportunities to mitigate the risk of spread of measles from New Zealand to the Pacific region

Review Process

The Committee will review relevant documentation, held by the Ministry, HNZ or Te Aka Whai Ora, relating to measles preparedness. The PHA will provide these in advance to the committee.

For the purposes of carrying out the review the committee may request any additional information held by the Ministry, HNZ or Te Aka Whai Ora that is directly relevant to the subject matter of the review.

Confidentiality Note

To allow members to receive confidential/unpublished information and allow an open discussion among members, no information should be shared outside the committee, unless officially released.

Members must not discuss or divulge information obtained from the work of this review, including matters discussed at meetings, findings and recommendations, until the information has been officially released by the Minister of Health.

With the permission of the Minister of Health the NVC will be allowed to share a summary of the report with the Regional Verification Commission and the WHO Western Pacific Region Regional Director.

Programme of work

The following programme of work and time commitments are anticipated:

- Initial meeting: 30 minutes
- Preparation and review of documentation: 4 hours
- Pre workshop meeting: 1 hour
- Half day workshop, to be held in Wellington
- Review of final written report: 2 hours

Secretariat support will be provided by the PHA.

Deliverables

The Committee will set out in a report:

- The details of its review
- The conclusions it has reached
- The recommendations that it makes as a result of that review

Given that there are a number of workstreams in place to improve vaccination coverage generally, including the Immunisation Taskforce Recommendations, the report is expected to focus on epidemic readiness and response.

The Committee is expected to provide a final report to the Minister of Health. While the exact submission date will be confirmed in consultation with the committee, it is anticipated that the report will be delivered by the end of June 2024.

The Committee is an expert advisory body and therefore does not perform functions related to the implementation, coordination, regulation, or funding of measles outbreak planning.

Fees and Expenses

Members will be eligible for fees as per the existing NVC ToR.

Declaration of interests

Conflicts of interest will be managed as per the existing NVC ToR, with all members required to complete a declaration of interest.

END.

Appendix Four: Table of Documents Provided

Document Name	Explanation
Measles Epidemic Preparedness Briefing (22 March)	Responds to the Minister's request for assurance that the system has the necessary "people, parts and policy" in place to prevent and manage a measles outbreak in New Zealand.
Appendix 1 Measles Readiness Assessment	Presents a detailed system assurance framework, organised by parts, people and policies and Red-Amber-Green ratings.
Appendix 2 National Public Health Service Response Activities	Matrix from NPHS summarising core components of a measles response. (Note: this version is updated as of 7 May)
Appendix 3 Measles Priority Actions Table	Lists gaps and prioritised actions for agencies, informed by 'DOC-02 Appendix 1 Measles Readiness Assessment'
Appendix 4 Commentary on Baker et al. Paper	Provides a response to PHCC briefing: Urgent action needed to prevent a measles epidemic in Aotearoa New Zealand.
Updated Measles Readiness Assessment: Update 18 April	Offers an updated and more detailed version of 'Appendix 1 Measles Readiness Assessment', documenting progress and detailing what is needed to strengthen preparedness.
Methodology Overview: Measles Epidemic Preparedness Assessment	Outlines the background and methodological approach to the briefing, measles readiness assessment, and measles priority actions table
Health Sector Response to the 2019 Measles Outbreaks – Independent Review	2019 measles outbreak independent review, authored by Dr Gerard Sonder and Dr Debbie Ryan.
Summary of Activities in Response to Recommendations 2019 Measles Outbreaks Review	Document outlining responses to recommendations form the 2019 review. Note: from February 2023.

Aide-Mémoire

International Assessment of New Zealand's Measles Epidemic Readiness Assessment

Date due to MO:	5 July 2024	**Action required by:**	N/A
Security level:	IN CONFIDENCE	**Health Report number:**	H2024045121
To:	Hon Dr Shane Reti, Minister of Health		
Consulted:	Health New Zealand: ☒		

Contact for telephone discussion

Name	Position	Telephone
Dr Andrew Old	Deputy Director General, Public Health Agency, Ministry of Health | Te Pou Hauora Tūmatanui	s 9(2)(a)
Dr Nicholas Jones	Director of Public Health, Public Health Agency | Te Pou Hauora Tūmatanui	s 9(2)(a)

Aide-Mémoire

International Assessment of New Zealand's Measles Epidemic Readiness Assessment

Date due:	5 July 2024		
To:	Hon Dr Shane Reti, Minister of Health		
Security level:	IN CONFIDENCE	**Health Report number:**	H2024045121

Purpose

1. This aide-mémoire provides you with the international review (attached as Appendix 1) of measles readiness assessment, from Dr Chung-won Lee and Dr Xiaojun Wang of the World Health Organization (WHO) Regional Office for the Western Pacific. It also outlines proposed next steps.

Context

2. In March 2024, you received the Ministry of Health's (the Ministry) assessment of the health system's preparedness to respond to a potential measles outbreak in New Zealand (H2024036756 refers).
3. Subsequently, in April 2024, you requested independent expert reviews of this assessment. You received an independent review from a local expert group, consisting of the expanded National Verification Committee for the Elimination of Measles and Rubella (NVC), on 21 June 2024 (H2024043986 refers).
4. The Ministry also approached Dr Saia Ma'u Piukala, Regional Director, WHO Western Pacific Regional Office to support an international review of the assessment. The lead reviewers nominated by Dr Piukala were:
    a. Dr Chung-won Lee, Medical Officer, Measles and Rubella Focal Point, Vaccine-Preventable Diseases and Immunisation Unit, WHO Regional Office for the Western Pacific
    b. Dr Wang Xiaojun, Medical Officer, Acting Coordinator Vaccine-Preventable Diseases and Immunisation Unit, WHO Regional Office for the Western Pacific.

International Perspective

A review of the Ministry's assessment was undertaken by the WHO Regional Office for the Western Pacific

5. The measles readiness assessment and accompanying documents were reviewed by the lead reviewers, WHO technical staff focusing on measles and rubella, and the Chair of the Regional Verification Commission (RVC) for Measles and Rubella Elimination in the Western Pacific.

Key findings and initial comments

6. The reviewers commended the Government of New Zealand for recognising the risk of measles outbreaks and conducting a comprehensive risk assessment. Overall, the reviewers agree that New Zealand is generally well prepared for responding to potential measles outbreaks, due the country's strong surveillance and response capacity.
7. The Ministry acknowledges and agrees with the review findings that prevention is the best strategy against large-scale measles outbreaks, primarily through high levels of population immunity, a strong public health surveillance system and robust outbreak response capacity.
8. Six areas to focus on to strengthen outbreak preparedness were highlighted in the review:
    a. increasing population immunity
    b. prioritising early and aggressive intervention to 'Stamp it Out' in an outbreak response
    c. targeted approaches to support Māori and Pacific communities
    d. ensure rapid information sharing domestically and internationally
    e. agreeing on prioritised approaches for laboratory testing in the event of an outbreak, including the role of genomic analysis
    f. considering a single group for both technical and strategic oversight.
9. Many recommendations align with both current and planned activities and the review from the NVC. We will assess this review alongside the NVC review and current work programme to determine if activities need to be re-prioritised and if additional work is required.

Next Steps

10. The Ministry will work with Health New Zealand to review and integrate the findings and recommendations from both the NVC review and the international review into the ongoing work programme for measles outbreak preparedness.
11. We will provide you with more detailed advice by the end of July 2024.

Dr Andrew Old
Deputy Director-General
Public Health Agency | Te Pou Hauora Tūmatanui

Appendix 1: Cover Letter and Report - Measles Epidemic Preparedness in New Zealand – WHO comments

WORLD HEALTH ORGANIZATION **ORGANISATION MONDIALE DE LA SANTE**

REGIONAL OFFICE FOR THE WESTERN PACIFIC **BUREAU REGIONAL DU PACIFIQUE OCCIDENTAL**

United Nations Avenue, P.O. Box 2932, 1000 Manila, Philippines

In reply please refer to:
Prière de rappeler la référence:

Dr Andrew Old
Deputy Director-General of Health
Public Health Agency
Te Pou Hauora Tumatanui
Ministry of Health
Manatu Hauora
Wellington
New Zealand
Email: globalhealth@health.govt.nz

24 June 2024

Dear Dr Old,

Subject: Measles epidemic preparedness in New Zealand

The World Health Organization (WHO) Regional Office for the Western Pacific sincerely appreciates the opportunity to independently review New Zealand's Measles Epidemic Preparedness report. The report and accompanying documents have been reviewed by WHO technical staff focusing on measles and rubella, and by the Chair of the Regional Verification Commission (RVC) for Measles and Rubella Elimination in the Western Pacific.

May I commend the Government of New Zealand on recognizing the risk of measles outbreaks and conducting a comprehensive risk assessment that resulted in the Measles Epidemic Preparedness report, along with supplemental documents. This clearly demonstrates the country's existing robust national and subnational capacity and ongoing system strengthening and outbreak mitigation efforts.

To complement what has already been identified in the report as areas needing further work, please find some recommendations for your consideration in the attached Annex. WHO in the Western Pacific will be glad to engage further with you and your team to answer any questions that may arise and to discuss feasible solutions together.

.../

... ENCL.: As stated.

cc: The Secretary, Attention: UNHC Division,
Ministry of Foreign Affairs and Trade, Wellington
The WHO Representative/Director, Pacific Technical Support, Suva

Telephone: (632)8528 8001 Facsimile: (632)8521 1036 (632)5381 0214 E-mail: wpropostmaster@who.int Website: http://www.who.int/westernpacific

I look forward to our continued collaboration.

Yours sincerely,

Dr Chung-won Lee
Measles and Rubella Focal Point

Annex

Measles epidemic preparedness in New Zealand: WHO comments

Population immunity

While the report recognizes the significant measles immunity gaps in the country, it lacks specific plans for rapidly filling these gaps, especially among Māori and Pacific peoples.

To address this issue, please consider doing the following:

(1) Set "population immunity" as the highest-priority criterion for assessing and ensuring measles outbreak readiness.

(2) Conduct further detailed analysis of immunity gaps by population characteristics (birth cohort, geography, race/ethnicity, socioeconomic status, etc.) using currently available data (administrative data, outbreak and vaccination campaign data, survey data, etc.), building on what has already been done and presented and what was included in the 2023 National Verification Committee for measles and rubella elimination (NVC) report (Briefing, p. 6; NVC report, pp. 33-38).

(3) Use this information to visualize and understand the immunity gaps accumulated in recent years and identify where they pose the biggest threats for measles outbreaks.

(4) Design specific interventions to address these gaps based on which populations are most at risk, what the weakest links are within the system, and what policies can help to mitigate the threats and protect people most at risk.

(5) Conduct focused and rapid catch-up vaccination targeting high-risk population groups, along with routine immunization strengthening, to help prevent or delay potential measles outbreaks. For your consideration, please find enclosed a measles susceptibility profile WHO prepared for New Zealand using reported data (Attachment).

Outbreak response phases

Of particular concern is the "Focused Control" phase (Debriefing, p. 8); in a post-elimination setting, there can be a threat of re-establishing endemic transmission of measles during this phase. Increasing measles, mumps and rubella (MMR) coverage should be included in the "Prepare" phase, especially in high-risk communities/population groups. Furthermore, aggressive and early intervention to "Stamp it Out" should be prioritized.

Preparing to respond

The planned increased support to Māori and Pacific providers − including culturally tailored health promotion, intelligence sharing and holistic support − is highly

commended. Targeted and intensified surveillance activities among Māori and Pacific providers, to the extent feasible, would support early detection and control of potential large-scale measles outbreaks. Please consider expediting the planned process development for this support and integrating it with urgent catch-up vaccination based on detailed immunity gap analysis as stated above.

Health warning/alert system

To ensure rapid information sharing on measles cases and to trigger prompt infection prevention and control measures and prevention of rapid measles transmission, consider developing a health warning system (that includes measles) between public health authorities of New Zealand and key public health stakeholders for Māori and Pacific peoples within the country and Pacific island countries and areas (for example, Pacific Pediatric Association, WHO Division of Pacific Technical Support, national and regional laboratory networks).

Laboratory surveillance

Measles presents as a symptomatic disease that would trigger testing and that provides effective, powerful data for public health action, as stated effectively in the report (Briefing, p. 9, point 44 b). Please note the following:

(1) Measles is not a candidate for wastewater testing to inform public health action. Therefore, wastewater testing for measles is not recommended.

(2) Genomic data for measles are essential for identifying routes and chains of transmission in outbreaks, incorporated with epidemiological data. Currently, there are fewer genotypes circulating globally and detailed genomic identification is very important. As such, statement 44 C p. 9 of the Briefing ("C. genomic data are less relevant for measles due to genetic stability") is incorrect.

(3) For polymerase chain reaction (PCR) testing and serology, prioritization criteria should be defined now before an outbreak happens. There are clear guidelines for sample selection and testing once an outbreak is established, including from WHO's *Measles Outbreak Guide* (Attachment, p. 16), which is recommended to be incorporated into New Zealand's measles outbreak response plan.

Oversight

Please consider the following recommendations:

(1) To enable efficient information sharing and decision-making, have one advisory group focusing on measles. Guidance on outbreak preparedness and response may be provided from a range of public health experts including health emergencies, health systems and disease-specific experts, in a time-limited manner. As such, one advisory group on measles could provide general strategic oversight as well as technical advice during an outbreak. For outbreak response, the incident

management team may include experts from the health emergencies department and measles strategic oversight group.

(2) To ensure social/behavioural factors are well considered in developing interventions to increase vaccination coverage and achieve equitable high population immunity, include experts in social/behavioural research in the measles strategic oversight group.

Overall comments

Prevention is the best strategy against large-scale measles outbreaks and potential system weaknesses to rapidly stop them. The most important lines of defence for preventing large-scale measles outbreaks are high uniform population immunity, robust surveillance and outbreak response capacity. High population immunity will reduce the likelihood of a measles outbreak, a strong public health surveillance system will allow quick detection of the virus, and robust outbreak response capacity will prevent its rapid transmission.

We agree with the conclusion of the readiness assessment that New Zealand is generally well prepared for responding to potential measles outbreaks, mainly due to the country's strong national and subnational surveillance and outbreak response capacity.

In addition to the above recommendations, please recall the conclusions and recommendations for New Zealand provided by the RVC in September 2023.

Conclusions

- The RVC recognizes New Zealand's efforts in sustaining measles and rubella elimination and concludes it has successfully maintained its measles and rubella elimination status in 2022.
- The RVC notes with concern that measles and rubella immunization coverage is at its lowest level since 2012 and there are alarming immunity gaps among Māori and Pacific peoples.
- Given the current coverage rates, the RVC agrees with the NVC that New Zealand is at risk of a large outbreak and losing its elimination status, unless immunity gaps are rapidly closed.
- The RVC appreciates the detailed evidence on population immunity by ethnicity, geography and economic status.

Recommendations

- The RVC recommends that New Zealand urgently fill the immunity gaps among Māori and Pacific peoples, and other vulnerable groups.
- The RVC recommends that New Zealand consider incentivizing vaccination performance for the benefit of families and primary care providers, focusing on vulnerable groups.

- The RVC recommends that New Zealand make every effort to ensure the governmental health reform clarifies accountability and improves immunization service delivery and uptake.
- The RVC recommends that New Zealand engage all relevant sectors, including nongovernmental organizations for Māori and Pacific peoples, professional medical associations and religious groups, to seek their insights and support to help address immunization coverage deficits.
- The RVC recommends that New Zealand support social/behavioural studies to gain greater understanding of the underpinning reasons for suboptimal vaccine uptake and practical ways to fill the immunity gaps.

WHO in the Western Pacific commends the Government of New Zealand for conducting this preparedness assessment and report, and welcomes further discussion and collaboration.

Aide-Mémoire

Progressing actions in response to external reviews of New Zealand's measles outbreak preparedness

Date due to MO:	31 July 2024	**Action required by:**	N/A
Security level:	IN CONFIDENCE	**Health Report number:**	H2024045125
To:	Hon Dr Shane Reti, Minister of Health		
Consulted:	Health New Zealand: ☒		

Contact for telephone discussion

Name	Position	Telephone
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Dr Andrew Old	Deputy Director-General of Health, Public Health Agency - Te Pou Hauora Tūmatanui	s 9(2)(a)

Aide-Mémoire

Progressing actions in response to external reviews of New Zealand's measles outbreak preparedness

Date due:	31 July 2024		
To:	Hon Dr Shane Reti, Minister of Health		
Security level:	IN CONFIDENCE	**Health Report number:**	H2024045125

Context:

- In March 2024, you received the Ministry of Health's (the Ministry) assessment of the health system's preparedness to respond to a potential measles outbreak in New Zealand (H2024036756 refers).
- Subsequently, in April 2024, you requested independent expert reviews of this assessment. You received:
    - an external review from a local expert group, consisting of the expanded National Verification Committee for the Elimination of Measles and Rubella (NVC), on 21 June 2024 (H2024043986 refers)
    - an international review conducted by Dr Chung-won Lee and Dr Xiaojun Wang, both from the World Health Organization (WHO) Regional Office for the Western Pacific (WPRO). You received this on 5 July 2024 (H2024045121 refers).
- We appreciate the time taken and insight provided in both reviews. This aide-mémoire provides you with a response and next steps on each of the 31 recommendations.
- To align with the RAG 'people, parts, and policies' assessment we have grouped the recommendations under the following areas:
    - Immunisation approach
    - Governance and Leadership
    - Surveillance and Intelligence
    - Case and Contact Management
    - Outbreak Support Functions
    - Community, Cross Agency and International Aspects.

Next Steps

- Despite significant and ongoing effort from Health New Zealand – Te Whatu Ora (Health NZ) to prevent and prepare for a measles outbreak, there is still work to do to ensure system readiness.
- We have requested additional information from Health NZ to quantify the immunisation outcomes from the actions discussed below, a more granular analysis of immunity gaps (eg MMR 1 vs MMR2 coverage) to facilitate more effective targeting of immunisation, and further work on data and data quality in both immunisation and surveillance systems.
- We will continue to work with Health NZ to ensure we are prepared for a measles outbreak and will provide monthly updates to you via an updated RAG 'people, parts, and policies' assessment.

Dr Andrew Old
Deputy Director-General
Public Health Agency, Te Pou Hauora Tūmatanui
Date: 29 July 2024

#	Recommendation	Source	HNZ Response	Ministry Comments
Immunisations				
1	Set "population immunity" as the highest priority criterion for assessing and ensuring measles outbreak readiness.	WPRO	Health NZ agree that population immunity, indicated by measles mumps and rubella (MMR) vaccination coverage, is the key criterion for assessing both risk of and readiness for a measles outbreak. Increasing MMR vaccination coverage, especially in communities with low immunisation rates, has been and remains our top priority for preventing a measles outbreak. The measles readiness assessment has already driven several initiatives aimed at increasing MMR coverage, which are detailed in other responses to the recommendations.	In the broader immunisation context, the Ministry is developing the *Strategic Approach to Immunisation in New Zealand* to set the strategic direction and long-term aspirations for protecting individuals and families from vaccine-preventable diseases. This work will provide a roadmap for national action on immunisation priorities and presents an opportunity to align efforts across the system to improve immunisation rates.
2	Conduct further detailed analysis of immunity gaps by population groups using currently available data (admin data, outbreak) *and* Use immunity gap analysis to identify the gaps posing the biggest threats for measles outbreaks.	WPRO	Health NZ agree that understanding New Zealand's immunity gaps by population groups is important to understand the risk posed by a measles epidemic. Health NZ maintains dashboards that identify the MMR coverage in the under 6-year-old cohort to community-level. The current dashboard can break down this coverage by a range of different variables, including ethnicity, deprivation, and enrolling Primary Health Organisation (PHO). The Aotearoa Immunisation Register (AIR) is used to identify immunisation status of individuals vaccinated from 2005 to present. We do not have data for MMR delivery prior to 2005. There are possible other sources of data that may support the description of the immunity gap, such as case and contact information from previous outbreaks. These have been completed	We have concerns about the quality of the data used for immunisation reporting and agree that improving data quality is a priority (see later recommendation). The Office of the Director of Public Health is working to confirm access to the data from the 2019 measles outbreak held by Health NZ (Auckland region), to undertake an analysis of gaps in population immunity. The final due date is to be determined.

#	Recommendation	Source	HNZ Response	Ministry Comments
			at a local level for some outbreaks and are not available systematically.	
3	Design specific interventions to address the immunity gaps especially for populations most at risk.	WPRO	Health NZ agree that targeted activity is required to address the immunity gap for populations who have low immunisation rates and are therefore most at risk. A range of initiatives are in place and being developed to address the immunity gap among priority populations including recommendations from the Immunisation Taskforce report. These range from initiatives targeted at the community-level to the workforce-level, including the below: *Increasing number of vaccinations* • A childhood immunisation prioritisation matrix to focus resource with antenatal (for Māori), 6-week (for Māori), and MMR dose one (for Māori and Pacific) immunisations the highest priority. The implementation of the Prioritisation Matrix was a recommendation in the Immunisation Taskforce Report (established 2022). This initiative will be evaluated as a part of this work. • A funding package to support general practice with pre-call / recall activities for 6-week immunisations (the single biggest predictor of a child completing the immunisation schedule is getting the 6-week immunisation on time). The funding package also acknowledges the ongoing work required in General Practice for pre-call / recall activities irrespective of where the immunisation occurs. We will monitor this initiative using the Aotearoa Immunisation Register by looking at the age of the child when they received their 6-week immunisation event (for	Addressing immunisation gaps is a complex issue for Health NZ to resolve. We support Health NZ's approach to focus on a family-centred immunisation approach in collaboration with education. Health NZ's plans to optimise data sharing should be a focus to support successful identification of immunity gaps and the impacts of initiatives to address, This includes having suitable data sharing agreements in the event of an outbreak response. We will review the reporting on the impact of the precall/recall funding and the funding for Hauora Māori Partners and Pacific Health when available. We are working with Health NZ to understand the impact of their activities and improve the visibility of outcomes.

#	Recommendation	Source	HNZ Response	Ministry Comments
			example, an indication of on-time immunisation is completion of this event by 8-weeks of age). • A Hauora Māori Partners immunisation initiative ($50m funding) with a focus on immunisation to reduce the pressure on the overall system of both primary care and secondary care. • Pacific Health (in Health NZ) has $10m available to support Pacific providers for 2023-2024 and $10m from baseline funding for 2024-2025 to increase immunisation rates for Pacific children and families. • Health NZ has secured funding to deliver a one-off MMR immunisation programme for Recognised Seasonal Employer (RSE) scheme workers currently in Aotearoa New Zealand. This project recognises that unvaccinated RSE workers are at high risk of being infected and transmitting measles in their accommodation whilst working in Aotearoa New Zealand, risk of spread to local communities and to the Pacific region. Where appropriate, these events take a family and community focused approach, including the wider local Pacific community, as well as RSE workers. These events are being delivered around the country from June – November 2024. *Expanding access to immunisation services* • Work to increase the number of pharmacies offering MMR vaccines (currently, approximately 36% of pharmacies that have opted to deliver immunisation services have ordered the MMR vaccine). Pharmacy engagement leads have been appointed, or are being appointed, in each region to support pharmacy onboarding to deliver childhood immunisations.	

#	Recommendation	Source	HNZ Response	Ministry Comments
			Pharmacies that provide this service are most likely to consider the additional training to become 'whole-of-life' pharmacist vaccinators. • Improving outreach immunisation services with the first step to co-design the services being a cross-directorate workshop to define the national and regional responsibilities within an agreed action plan. *Communications and engagement* • A measles toolkit has been developed to support the workforce to promote messaging about measles and the MMR vaccine. • Community action funding was provided to Māori and Pacific providers as part of a comprehensive health promotion approach. Initiatives across the country help to solidify and restore confidence in immunisations using innovative community-led approaches which build trust in both the message and messenger. This is targeted at communities with low vaccination rates and this initiative is specifically to reach families who may have access issues to services or require quality conversation to address any hesitancy they may have. *Cross-Government initiative* • Health NZ and the Ministry are collaborating with the Ministry of Education on a range of initiatives to support increased MMR immunisations, with a focus on priority populations. Activities include regular communications and information to schools; data-sharing agreements; establishment of an 'on demand' pilot for vaccinations in schools; ventilation advice and information to support schools in the event of a measles outbreak.	

#	Recommendation	Source	HNZ Response	Ministry Comments
			• Funding was provided to the Ministry for Ethnic Communities that developed a series of videos that have been translated into 20 different languages. **Next Steps** Health NZ continues to monitor the activities listed and this recommendation will continue to be actioned. Work includes exploring opportunities in tertiary education and a new pilot programme that is being launched which aims to help schools, early childhood education centres, and kōhanga reo to reduce the risks posed by vaccine-preventable diseases. This whānau-centred initiative is a collaborative effort between Health NZ and the Ministry of Education, highlighting the importance of increasing immunisation rates. This programme aims to support schools by: • Allowing them to view and understand their immunisation rates, and the risks this could pose. • Providing a range of options to communicate and engage with staff, students, and whānau around this topic. Offering the option to plan & deliver school-based Hauora events, tailored to fit each community's unique needs.	
4	Conduct focused and rapid catch-up vaccination of high-risk populations.	WPRO	Health NZ takes a family-centred approach to immunisation to enable all opportunities to immunise all families to be realised, including catch up immunisations for priority populations. Some of the initiatives underway are outlined above. Data-sharing agreements are in place, or being worked through, to provide immunisation service providers with data for eligible and un/under vaccinated individuals to support approaches to reach families that are not fully immunised. Pacific providers have delivered community events with vaccination promotion as well as through their outreach services.	Noting the above challenges with improving immunisations rates the Ministry supports Health NZ's outreach into high-risk populations.

#	Recommendation	Source	HNZ Response	Ministry Comments
			Pacific registered nurses within the Pacific Public Health Directorate have helped vaccinate our Pacific community in various community events around the country. Health NZ is working to maximise the approaches for our data sharing partners to ensure that the data sets provided are beneficial to support immunisation uptake.	
5	Strengthen routine immunisation.	WPRO	We agree that routine immunisation needs to be strengthened. In addition to the activities listed above, other work is underway to address this, including expanding the vaccinator workforce (e.g., pharmacy); implementing digital tools (e.g., the AIR and addressing data quality issues in the AIR); strengthening vaccinator training and support services; and supporting engagement activity with communities and families to build trust. **Next steps** Health NZ continue to strengthen the immunisation ecosystem, working across agencies, regions, and districts. The development of a strategic approach, described earlier, is part of this work. A two-year $50m investment package ($25m per year) has been made available to support Hauora Māori partners to lift immunisation rates. Pacific Health (in Health NZ) has $10m available to support Pacific providers for 2023-2024 and $10m from baseline funding for 2024-2025 to increase immunisation rates for Pacific children and families. As stated by Health NZ in *Aotearoa Immunisation Register (AIR) update11 July* (HNZ00055469 refers) an update will be provided to you following analysis of initial quarterly reports.	As noted above increasing routine immunisation rates requires substantial change to communicate the risk of measles and build trust with the public. The investment in Hauora Māori and Pacific Health could make meaningful steps into improving immunisation rates in these communities. The Ministry is waiting to review the quarterly reports from Health NZ to understand the outcomes of this spending.
6	Consider expediting the commended plan to provide increased support to Māori and	WPRO	We agree with this recommendation. NPHS has identified this as priority work and is reviewing critical collateral which will equip Māori and Pacific organisations and communities to meet their	The Ministry supports Health NZ's continued effort to develop targeted communication and work

#	Recommendation	Source	HNZ Response	Ministry Comments
	Pacific providers including culturally tailored health promotion, intelligence sharing, holistic support, and integrating with urgent catch-up immunisation.		needs across any outbreak, emergency and wider risks or threats. A culturally responsive approach is taken to this work and prioritises fit for purpose translated material. Key immunisation resources, including measles and the MMR vaccine, have been translated to te reo Māori and Pacific languages. The Ministry for Ethnic Communities was funded to develop a series of health promotion videos in 20 different languages (see https://www.ethniccommunities.govt.nz/resources/videos/health-videos/) NPHS has a childhood immunisations communications campaign focused on parents and caregivers in the Northern and Te Manawa Taki regions. The campaign will use targeted radio and social marketing channels to encourage childhood immunisations uptake, particularly MMR and pertussis, from July to October. Community action funding was provided to Māori and Pacific providers as part of a comprehensive health promotion approach. Initiatives across the country help to solidify and restore confidence in immunisations using innovative community-led approaches which build trust in both the message and messenger. This is targeted at communities with low vaccination rates and this initiative is specifically to reach families who may have access issues to services or require quality conversation to address any hesitancy they may have. All immunisation activities have a focus on achieving equitable outcomes. As noted in earlier responses, a range of immunisation activities are underway, intended to increase immunisation uptake among priority populations, Māori, and Pacific people, and families impacted by rurality and deprivation. This also includes funding incentives for general practice enrolment and on-time childhood immunisations, with a focus on high priority groups, more detail on this is provided below.	with Māori and Pacific communities to close immunisation gaps.

#	Recommendation	Source	HNZ Response	Ministry Comments
			Next Steps Following the review of collateral, Health NZ will continue to work to elevate and amplify community voices, needs and solutions and to ensure that collateral is fit for purpose, culturally enhanced and responsive to Māori and Pacific communities.	
7	Urgently fill immunity gaps among Māori and Pacific peoples, and other vulnerable groups.	WPRO	The main focus of the Immunisation Taskforce report was to fill immunity gaps for Māori, Pacific peoples, and other vulnerable groups. We have implemented nearly all the recommendations but are yet to see the gaps filling. Some of the initiatives underway are outlined above. As previously noted, a one-off provision of the MMR vaccine for RSE scheme workers currently in Aotearoa New Zealand has been approved (until the end of November at this stage), at a cost of up to $750,000. A further $500,000 is earmarked for vaccine stock and $400,000 is earmarked to support Pacific Regional Coordination Hub (PaRCH) nurses to support the vaccinations, resources including translated materials and evaluation. Health NZ has provided funding of $1.2m for the Pacific Health directorate to support surge capacity for childhood immunisations particularly for Pacific children, including MMR, in the Northern and Te Manawa Taki regions. This is in addition to community action funding ($800k) for Pacific providers focused on MMR.	The Ministry agrees with Health NZ's assessment that Immunisation Taskforce activities have not yet resulted in demonstrable impact on immunisation coverage gaps. The Ministry has requested more detail on the impact of the RSE scheme and the funded activities targeting Māori and Pacific communities.
8	Consider incentivising vaccination performance, focussing on vulnerable groups.	WPRO	**Response** Health NZ agrees that, in some situations, there is merit in incentivising vaccination performance. An example of an initiative already in place is the $4.6m funding package to support general practice with pre-call / recall activities for 6-week immunisations ($40 available for every enrolled baby that receives their 6-week immunisations, and an additional $40 per baby meeting high-priority criteria (Māori, Pacific, Community Services	The Ministry will work with Health NZ to review the reporting on the impact of the precall/recall funding on immunisation coverage.

#	Recommendation	Source	HNZ Response	Ministry Comments
			Card, quintile 5 and / or rural). The funding is available for general practice following 6-week immunisation events that take place from 1 April 2024 to 30 June 2025. s 9(2)(ba)(i) [redacted] **Next steps** Initial operational reporting is being tested with PHO representatives. We are exploring the feasibility of further incentives	
9	Make every effort to ensure the health reforms result in clarified accountability and improved immunisation service delivery and uptake.	WPRO	Strengthening immunisation coordination and accountability across the health system is essential to improving immunisation outcomes over the long-term. The Ministry has established a governance structure to provide oversight on strategic priorities and issues across the immunisation system and coordinate operational decision-making on significant matters that require a cross-agency response. This will support collective ownership for achieving immunisation outcomes.	The Ministry is currently revising the Memorandum of Understanding between Pharmac and the health agencies on vaccine purchasing and decision-making. This is an opportunity to clarify roles and responsibilities, agree processes for future immunisation decisions, and embed the immunisation governance structure.
10	Engage all relevant sectors including non-governmental organisations (NGOs) for Māori and Pacific peoples, professional medical associations, religious groups, to seek insights and support to help address immunisation coverage deficits.	WPRO	Health NZ agrees that insights are vital to help address immunisation coverage deficits. Alongside the above work with Māori and Pacific NGOs Health NZ are also: • engaging with the Department of Corrections to consider MMR coverage • Working with Ministry of Education • working with the Ministry for Ethnic Communities. **Next Steps** We will continue to work with different sectors to improve immunisation coverage.	The Ministry is also meeting regularly with the Ministry of Education to discuss and progress outbreak risk reduction, mitigation and response activities

#	Recommendation	Source	HNZ Response	Ministry Comments
11	Support social/behavioural studies to gain greater understanding of reasons for suboptimal vaccine uptake and practical ways to fill immunity gaps.	WPRO	We agree that research is an important tool in understanding the reasons behind suboptimal vaccine uptake. The Ministry commissioned behavioural insight studies that have examined attitudes towards childhood immunisations, measles vaccines and views on measles, with results expected back in late August. The Victoria University of Wellington has also conducted a study (funded by the Ministry of Health) titled *Child vaccine hesitancy: Predictors of parents' COVID-19 vaccine uptake for their children, impact on vaccine uptake of the national immunisation schedule, and translational findings for equitable immunisation outcomes among children in Aotearoa New Zealand* and we are currently awaiting a final report.	Once finalised, the Ministry will share the results with Health NZ to inform operational actions to improve immunity gaps and we will also consider how best to incorporate these findings at both the strategic leadership and assurance levels.
12	Review, evaluate and implement a strategic work programme to increase immunisation coverage to 95% equitably by geography, ethnicity, and socioeconomic status. There should be a systematic approach to these aspects of immunisation: • timely childhood immunisation, catch up, and immunisation during outbreak • update School Immunisation Registers and extend to include all education staff • standardise and improve the assessment and documentation of health staff immune status.	NVC	The 'Strategic Approach to Immunisation in New Zealand' (the 'strategic approach') and a roadmap are being developed by the Ministry to guide the overall direction of the immunisation programme and targeted consultations have been completed. The strategic approach focuses on all immunisations during a person's life course. Health NZ continues to implement the remaining recommendations from the Immunisation Taskforce report to increase childhood immunisation coverage to 95%. An implementation plan is in development to progress towards the national health target of 95% of children fully immunised at 24 months of age by 2030. The Health (Immunisation) Regulations 1995 require all early childhood services and primary schools to maintain an up-to-date immunisation register of children attending. This requirement does not include teachers. Following the meeting between the Ministry of Health, Health NZ, and the Ministry of Education on 11 June, content will be added to the Ministry of Education	The Ministry is preparing the final draft of the strategic approach to present to the Immunisation Oversight Board for consideration in August 2024. Following approval by the Board, it is expected to go to the Director-General of Health and to you as Minister of Health before the end of the year.

#	Recommendation	Source	HNZ Response	Ministry Comments
			bulletin to inform teachers of the importance of knowing and (voluntarily) providing their vaccination status to their employers. We support the recommended action to have greater oversight of the immune status of all hospital and health staff. **Next Steps** Health NZ are exploring feasible options to expand the current process to record historical and overseas immunisations on the AIR which will support improved documentation of immune status.	
13	Extend MMR eligibility to everyone in New Zealand, with a high priority for MMR given to Recognised Seasonal Employment (RSE) workers from the Pacific region.	NVC	We agree that improving immunisation is the most effective way to reduce the spread of a measles outbreak, and that reducing barriers through eligibility of vaccinations is a priority. Health NZ has provided one off funding of $1.65m to administer MMR vaccines to all RSE workers in New Zealand which ran through till 30 December 2024.	On 17 May 2024 the Ministry of Health provided you advice on expanding MMR vaccine eligibility. You have requested further advice on: • reviewing options for expanding eligibility criteria to provide for population-level prevention and management of any infectious or quarantinable disease • costings for expanding eligibility for one dose of MMR vaccination. On 25 July, you received further advice on the review of the Health and Disability Services Eligibility Direction 2011, including options to adjust the eligibility settings to better enable population-level prevention and management of infectious and quarantinable

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				diseases. We are awaiting your feedback on that paper to inform next steps.
	Governance and Leadership			
14	For outbreak response, the incident management team (IMT) may include experts from health emergencies department and the strategic oversight group.	WPRO	Health NZ agrees that in a National IMT and response, we will actively consider all relevant internal and external stakeholders. The IMT follows the Coordinated Incident Management System (CIMS) framework, where the Incident Controller ensures appropriate coordination and communication between the respective CIMS functions. This includes Clinical, All-of-Government (AoG) support agencies and other subject matter experts as required, such as acute care representatives and Hospital and Specialist Services (HSS) experts.	

#	Recommendation	Source	HNZ Response	Ministry Comments
			Other technical experts may also be invited to the IMT meetings. The Incident Controller is also supported by other advisory and governance groups discussed further below.	
15	Have one advisory group focussing on measles that could best provide general strategic oversight as well as technical advice.	WPRO	We do not agree that one measles advisory group to provide both operational and strategic advice would improve our ability to respond to a measles outbreak. Currently we have the Clinical Technical Advisory Group (CTAG) which provides operational advice, and we are reviewing options to establish or repurpose a group to provide strategic oversight. While there may be some overlap in the two groups, they serve distinct purposes and would it not be efficient to combine the functions.	We agree with Health NZ that two separate groups for operational and strategic advice should be in place. The Public Health Agency (PHA) is reviewing existing advisory and governance groups for measles and other infectious disease to establish where there may be duplication and find (or establish) a group with the right balance of strategic and technical skills to provide strategic oversight. There is also work underway to review the Public Health Risk Assessment (PHRA) process and the structures and expertise required to support this.
16	Agree operational and strategic leadership roles and responsibilities in the event of an outbreak. These should be fully understood and communicated in advance. This is fundamental to a successful outbreak response and enables efficient and timely decision making. Roles and responsibilities need to be aligned with the Health Act 1956.	NVC	Health NZ agree with this recommendation. Since the Health Reforms, there has been significant progress in clarifying the public health accountabilities as part of an Accountabilities Framework. The Shared Public Health Leadership Group (joint governance structure between Health NZ and the Ministry of Health) has responsibility for this work. Health NZ (through the NPHS) leads an operational health response to a measles outbreak through a national Incident Management Team (IMT) coordination mechanism. The IMT will coordinate both the national enabling capabilities and the region(s) response to ensure alignment and collaboration.	The Ministry through the Office of the Director of Public Health will continue to work with the NPHS on clarifying roles and responsibilities in an outbreak. Updates will be provided to you through the monthly RAG assessment.

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			The NPHS in collaboration with the Office of the Director of Public Health is developing a decision-making framework which provides clarity around decision making during a response and identifies the links between the IMT, the Clinical Technical Advisory Group (CTAG), a Public Health Risk Assessment, and a Strategic Oversight Group (or similar). This framework will reflect the scope of different groups and the strategic and operational leadership functions. A CTAG for measles provides advice to the Incident Controller. The Terms of Reference for the CTAG has been reviewed and revised to ensure the role, functions and membership remains fit for purpose. These Terms of Reference confirm the value and importance of clinical and technical advice to inform activities during a response and clarify the reporting line of the CTAG to the Incident Controller. Additionally, the Clinical Director NPHS will partner with the Incident Controller during a response. CIMS diagrams have been updated to reflect this structure. We acknowledge the recommendation for roles and responsibilities to be aligned with the Health Act 1956. Health NZ leadership roles and the IMT have regard for the statutory powers and functions of medical officers of health, health protection officers and the Director of Public Health. Health NZ also ensures that all contact tracers are designated under the Health Act 1956. Privacy is fundamental to all aspects of health data including notifiable disease control. Access to identifiable health data is predominantly contained within information systems. Measles case and contact data is managed within the Notifiable Disease Management System (NDMS) and supporting technologies. Privacy impact assessments (PIA) are undertaken for these systems and the interim NDMS PIA was published in February 2024. Data contained within the data warehouse is subject to	

#	Recommendation	Source	HNZ Response	Ministry Comments
			standard Health NZ privacy, data governance, and access controls. **Next Steps** Finalise the decision-making membership, framework and disseminate.	
17	Clarify governance arrangements by identifying an enduring group to provide oversight for outbreak prevention, preparedness, and response.	NVC	We agree that clarification of governance arrangements for measles, and more broadly, infectious diseases, is needed. At present the Chief Executives measles oversight group, meets fortnightly as an interim governance measure.	As noted previously, the PHA is reviewing existing advisory and governance groups for measles and other infectious disease to establish where there may be duplication and find (or establish) a group to provide strategic oversight.
Surveillance and Intelligence				
18	Targeted and intensified surveillance activities among Māori and Pacific providers, where feasible, would support early detection and control.	WPRO	Health NZ (via Hauora Māori Services) provides Hauora Māori Partners and Pacific Health providers with data to inform immunisation efforts, including lists of those individuals who are overdue on immunisations. This supports them with timely, accurate data to support outreach and catch-up immunisation efforts. Health NZ also share all communication material with Māori and Pacific Health teams who then disseminate them to their networks of providers with any relevant additional messaging required. All messaging emphasises notifying on any suspicion of a measles case. During a measles response, Health NZ supports these providers with information and support at a local level to ensure that accurate and timely information is provided, and access to health services is supported.	The Ministry has confirmed that Hauora Māori Partners and Pacific Health providers are recipients of messaging on the increased risk of measles including the need to notify cases on suspicion.

#	Recommendation	Source	HNZ Response	Ministry Comments
19	Ensure there is a fit-for-purpose national surveillance system for notifiable diseases.	NVC	We agree that a fit-for-purpose national surveillance system is critical for New Zealand management of notifiable diseases. This is a complex area and there are a number of actions required, many of which are already in progress and some which require further scoping. The Notifiable Disease Management System (NDMS) project is working with ESR to ensure that core surveillance data is identified and captured within the NDMS and made available to support surveillance activities. All system-based data quality controls identified by ESR to date have or are being integrated into NDMS to ensure overall data quality is maintained or further enhanced. The NDMS published an interim Privacy Impact Assessment (PIA) in February 2024 and the data contained within the data warehouse is subject to standard Health NZ data governance and access controls. Health NZ fully implemented an action plan to ensure intelligence functions are in place to support future measles events in June 2024. As part of this work, Standard Operating Procedures, and templates for communicable disease SitRep reporting were developed, measles reports from the NPHS data warehouse were automated, and national training has been undertaken by surveillance analysts. An integrated national-regional NPHS surveillance network and a national surveillance on-call roster have been developed and implemented. A regular multi-agency operational surveillance hui is held weekly, with the dissemination of a standardised product. The Communicable Disease Control Manual provides national guidelines to support public health professionals with the prevention and control of notifiable diseases. The measles chapter of the manual includes standardised case definitions and public health measures which support good quality surveillance.	We have some concerns about potential data quality issues raised by the NVC and the role of NDMS in surveillance. This is a complex area and further information is required to inform our assessment. As a first step, the PHA will convene a meeting to discuss the issues raised in the NVC (local expert review) report with NPHS, Health NZ and ESR (as appropriate), to determine how best to progress the sub-actions.

#	Recommendation	Source	HNZ Response	Ministry Comments
			Next Steps A proposal is also being developed by NPHS to determine future data and technology infrastructure for surveillance of notifiable diseases.	
20	Detailed genomic identification is important and the health systems response should reflect this.	WPRO	We can confirm that the Communicable Disease Control Manual does state that genotyping information is useful for epidemiology and outbreak investigation. Genotyping via sequencing can be performed on measles-positive Nucleic Acid Amplification Test (NAAT) samples at the National Measles and Rubella Reference Laboratory at Canterbury Health Laboratories, Christchurch. Genotyping should be performed on all: • new importations • index cases and the first 5-10 cases of an outbreak / cluster. If outbreaks continue, then additional samples should be genotyped on a monthly basis • sporadic cases that are not epidemiologically linked to other genotyped cases or clusters, and • all samples requested by the medical officer of health investigating the outbreak. Samples from patients with recent measles vaccination history can also be tested for the presence of the measles vaccine strain via a vaccine-strain-specific PCR assay. All requests for NAAT for measles and samples referred for genotyping or testing for the presence of the measles vaccine strain should have recent vaccination status included on the request form.	Health NZ have clear criteria and procedures in place for genotyping measles cases in an outbreak.
Case and Contact Management				
21	Provide support for cases and contacts to isolate and quarantine.	NVC	We acknowledge that a lack of financial and welfare support is a barrier for some communities to effectively and safely isolate and quarantine. It was noted in the independent review of the 2019 measles outbreak that two thirds of the measles cases were from	The Ministry is preparing advice on the national isolation and

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			deprivation decile 9 and 10 and, for many contacts on a weekly wage, it was not practicable to comply with quarantine requirements. Individuals with insecure employment such as being on a casual contract, on a trial period or self-employed may also be more impacted by requirements to isolate. There are higher public expectations for support as during the COVID-19 response a range of financial and welfare support options were introduced to ensure that people could safely and effectively isolate. As of 30 June 2024 the last of the support introduced over COVID-19 (community connectors) was scaled down meaning that there is no national support for cases and contacts to isolate and quarantine (outside of employment sick leave provisions and welfare supports via the Ministry of Social Development). **Next Steps** Health NZ (through Hauora Māori Tūmatanui (NPHS) and Hauora Māori Services) is undertaking an evaluation of the current 'manaaki' support package. The goal is to embed a 'manaaki' support system based off a desktop analysis of current reports and the recommendations of the Hauora Māori partners (10 participating Hauora Māori partner across New Zealand).	quarantine capability which you are due to receive on 31 July 2024. It is voluntary for a measles contact to quarantine. Compliance remains a risk without options to support individuals to quarantine who cannot work from home and/or have limited accommodation options.
22	In post-elimination setting – "focussed control" may have a threat of re-establishing endemic transmission.	WPRO	Health agencies acknowledge the threat of re-establishment and the overall objective at every stage of our measles response is to achieve and maintain elimination and is reflected in the measles response plan. The reason for transitioning to a focused control approach, should this be required, is not because we would be abandoning our elimination objective but rather because focusing on immunisation would be more likely to be effective at achieving the objective at that stage. This reflects epidemic transmission dynamics where once an epidemic is established the focus needs to shift to reducing the number of susceptible contacts as the key	The Ministry agrees with the objective of elimination at every stage of a measles response. The NPHS are updating their *measles response plan.* Once this is completed, we will be able to provide greater confidence in this response.

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			means to stop the epidemic rather than trying to prevent exposures.	
23	Prioritise aggressive and early intervention to 'stamp it out' in the outbreak response.	WPRO	We agree with this recommendation and can confirm that an aggressive "stamp it out' approach is our current strategy for management of measles, alongside increasing vaccination rates. One case of measles is considered an outbreak and subsequent management is guided by the Communicable Disease Control Manual and the Case and Contact Management Chart. This aggressive and intense approach has been evidenced through seven national responses to measles incursions since the beginning of 2023, and frequent flight contact tracing where we are aware of contacts from exposure events internationally travelling onwards to New Zealand. Of these incursions and flight contact tracing of exposures events, none have progressed to a significant outbreak.	The Ministry agrees and supports the NPHS prioritising an aggressive "stamp it out' approach as the strategy for management of measles cases.
Outbreak Support Functions				
24	Ensure integration of primary care into outbreak response plans and develop a strategic approach to communication from NPHS to primary care for timely and streamlined information sharing.	NVC	Health NZ acknowledges primary care as a key stakeholder during an outbreak and support the recommendation to ensure primary care is described in the roles and responsibilities of the outbreak response plan. We also acknowledge the importance of working with Hauora Māori Partners to ensure an effective community response approach. Primary care is represented on the CTAG for measles during a response. NPHS also ensures there is a primary care representative invited to all Incident Management Team (IMT) meetings. We acknowledge it is important to reduce barriers to access to primary care when cases and contacts are referred from public health.	The Ministry supports Health NZ's continued integration with Primary care. We note that work is ongoing to identify sustainable funding mechanisms to reduce barriers to access to primary care when cases and contacts are referred from public health; temporary funding support from the NPHS is currently under consideration for the financial year 2024/25. s 9(2)(f)(iv) [redacted]

#	Recommendation	Source	HNZ Response	Ministry Comments
			Channels of communication are continuously improving. We work closely with the Health Pathways team to ensure timely updates are made regarding any changes to operational processes or management of measles cases or contacts. The Living Well Commissioning primary care team also supports NPHS by ensuring communications are rapidly circulated to the primary care sector via their established communication channels.	s 9(2)(f)(iv) [redacted]
25	Define the prioritisation criteria for polymerase chain reaction (PCR) testing and serology before an outbreak occurs.	WPRO	***PCR Testing*** Guidance is in draft to describe case and contact management at the different phases of a measles outbreak (Stamp it Out, Focused Control, and Manage It) and this includes what the PCR testing approach would likely be at each phase. The draft phase plan currently proposes: • *'Stamp it out':* PCR testing recommended for all suspected cases, vaccine-strain-specific PCR assays are available at four laboratories to test samples from patients with recent measles vaccination history • *'Focused control':* PCR testing recommended for all unlinked cases. PCR testing may not be required for close contacts of confirmed cases unless recommended by the Medical Officers of Health e.g., atypical presentation or previous history of measles or measles immunisation • *'Manage it':* PCR testing recommended if no epidemiological link (epidemiological link could include living in an outbreak area). PCR testing may not be required for close contacts except at the discretion of the Medical Officers of Health. ***Serology*** Health NZ agrees with the statement that prioritisation criteria for serology testing should be defined before an outbreak; this information is not currently described in our Communicable Disease Control Manual and work is currently underway to review	The Ministry acknowledges Health NZ currently has work underway to: 1. Confirm approaches to PCR testing at each phase of a measles outbreak response 2. Agree prioritisation criteria for serology testing, in advance of an outbreak. Once this work is complete, we anticipate this recommendation will have been addressed.

#	Recommendation	Source	HNZ Response	Ministry Comments
			and strengthen this section. A proposed prioritisation list is currently under discussion with expert groups. We are also exploring options to promote high quality evidence of vaccination which would reduce the need for serology testing of contacts in a response. This includes cross-agency work with education on vaccination registers and on what evidence to obtain particularly for students who may have been vaccinated overseas. Health NZ is seeking advice from the Ministry of Health (and Immigration NZ) on progress for evidence of measles vaccination to be provided as part of student visa applications. **Next Steps** Health NZ will finalise the phase plan for measles to describe case and contact management at the different phases of a measles outbreak. We will update the Communicable Disease Control Manual chapter on measles to define prioritisation criteria for serology testing.	
26	Incorporate sample selection and testing guidance from the WHO Measles Outbreak Guide into New Zealand's measles outbreak response plan.	WPRO	Health NZ has reviewed the Communicable Disease Control Manual chapter on measles and compared it with WHO's Measles Outbreak Guide. While the most common laboratory method for confirming measles virus infection globally is detection of measles-specific IgM antibodies in serum or plasma, the antibodies may remain low or undetectable until four days or more after rash onset. Our current testing approach for measles is a nucleic acid amplification test (NAAT), e.g., PCR. PCR testing offers confirmed detection of measles viral RNA using throat, nasal, nasopharyngeal, and urine samples much more rapidly than testing via serum or plasma. Nasopharyngeal or oropharyngeal samples have the highest yield particularly in the seven days after the onset of rash.	We commend Health NZ for reviewing and comparing the Communicable Disease Control Manual chapter on measles with the WHO's Measles Outbreak Guide. We agree with the current testing approach of a nucleic acid amplification test (NAAT), e.g., PCR.

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			The use of serology in the investigation of a suspected measles case is only recommended in cases where NAAT is not possible and if requested by a medical officer of health after discussion with a clinical microbiologist. Any positive IgM result should be discussed with a clinical microbiologist. **Next Steps:** This recommendation has been addressed.	
27	Include increasing MMR coverage in the "prepare" phase of outbreak response, especially for high-risk populations.	WPRO	We agree with this recommendation and refer to earlier response in the Immunisation Approach section for the ongoing work in this space. **Next Steps** No further action required.	No further comment.
Community, Cross Agency and International Aspects				
28	Strengthen cross-agency collaboration.	NVC	We agree with the NVC's comments and have already started building cross agency collaboration to improve immunisation rates and prepare for a measles outbreak. In April 2024 the Interim Chief Executives (CE) Multi Agency Preparedness Group was established to expand the remit and membership from the immunisation oversight group and is across the Ministry and Health NZ. Since May 2024 there have also been monthly CE meetings between the Ministry, Health NZ and the Ministry of Education.	The monthly CE meetings will continue. We have also started to engage with the Ministry of Social Development (MSD) and the Ministry of Business, Innovation and Employment (MBIE) on overlapping policy areas.
29	Develop a plan to protect Pacific Island Countries in the event of a New Zealand outbreak.	NVC	We agree in principle that having a plan is appropriate. Further discussions between agencies will be required in order to develop the appropriate scope of a plan and take into consideration the wider system actions which have a focus on protecting Pacific communities in New Zealand and abroad. Some of these include: • One-off provision of MMR vaccinations for all RSE workers	We will scope, implications of ongoing development, ownership, and funding of a Pacific plan.

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			• National Public Health Service's Pacific Emergency Outbreak Communications Plan (focused on Pacific communities in New Zealand) • The Ministry and Health NZ have systems in place to respond to any outbreaks in the Pacific Countries through the New Zealand Medical Assistance Team and the Pasifika Medical Association Medical Assistance Team (PACMAT).	
30	Ensure national outbreak planning, funding, and coordination of key outbreak support functions.	NVC	Health NZ has existing interim measles communication and response plans and are currently drafting a national outbreak response plan which will provide further clarity around response approaches (local, regional and national) as well as roles and responsibilities of agencies and functions. ***Laboratory capacity and capability*** Laboratory testing capacity has been reviewed and established to be sufficient, with 24-hour processing capability in all molecular laboratories. However, there are known issues and limitations particularly in rural areas with sample collection (e.g., primary care availability / afterhours services) and transportation of samples to laboratories. Work has been undertaken by the NPHS to map the end-to-end testing pathways for measles in each region to identify gaps, constraints, and work towards implementing suitable solutions to these. To ensure expected turnaround times are met, further engagement will be undertaken with primary care, public health services and laboratories, and guidelines and standard operating processes will be distributed to confirm roles and responsibilities within the testing pathway for their region and encourage a collaborative approach. Communication is required between the	The Ministry supports Health NZ's continued effort to develop national planning and coordination across key outbreak support functions. We have identified the need for us to see clearer prioritisation of MMR use in an outbreak beyond the childhood prioritisation matrix as a priority and will work with Health NZ on this. We will be further reassured about laboratory capacity and capability and immunoglobulin management once the planned work is complete.

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			Medical Officer of Health and the clinical microbiologist to assess and agree on the urgency of the samples after hours. s 9(2)(ba)(i)  There is a process in place for laboratories to order reagent supplies under urgency if required. We do not support the recommendation to stockpile reagents given the short shelf-life of products. ***Immunoglobulin management during outbreak situations*** Health NZ is undertaking a piece of work to ensure that regions all have clear processes in place to request and administer immunoglobulin. The New Zealand Blood Service (NZBS) has provided an indication of total stock available throughout the country by region. Stock volume is sufficient to supply similar volumes as per 2019/2020 NZ measles outbreak. While we know that there were challenges navigating local processes to obtain immunoglobulin	

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			during the 2019/2020 outbreak, it is not known whether all who should have received Immunoglobulin received it. In the event of a supply shortage, draft guidance regarding prioritisation for Human Normal Immunoglobulin (HNIG) is available, to be agreed by measles CTAG. Public Health Services have local pathways in place for use, although further work is in progress to seek agreement between local medical officers of health and clinical services regarding the role of public health service (assessing contact eligibility for HNIG, providing initial counselling, referral to clinical service), and the role of clinical services (accept referral, complete consent process, prescribe, access, and administer HNIG). ***Sufficient MMR vaccine supply with a clear prioritisation of use*** Monthly meetings are held between Health NZ and Pharmac to collaborate on supply and demand of vaccine. Health NZ actively manages stock supply and distribution on a weekly basis in partnership with Pharmac. Vaccine stock levels are managed to ensure buffer stock is available immediately in case of an outbreak and to cover replenishment time from vaccine suppliers. The Immunisation Taskforce has previously endorsed the Childhood Immunisation Prioritisation Matrix. Priority group one indicates the highest priority vaccination activity; Māori, Pacific, and quintile 5 (depending on the presence of disease in the community) are priority group one for dose one of the MMR vaccine. Health NZ is also developing a ring vaccination strategy which could be employed in the early phases of an outbreak with the aim of protecting the wider community; this would have a strong equity focus and support prioritisation of both vaccine supply and	

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			vaccinator resources. Once this strategy is approved, further work will be undertaken across NPHS to develop a robust implementation plan for this. **Next steps** Work through proposed solutions to identified challenges and issues raised through the regional end-to-end testing pathway mapping. Finalise roles and responsibilities between NPHS and Hospital and Specialist Services for immunoglobulin referral and administering. Agree on a ring vaccination strategy and develop the implementation plan.	
31	Consider developing a health warning system (that includes measles) between public health authorities in New Zealand and (a) key public health stakeholders for Māori and Pacific peoples within New Zealand (b) Pacific Island countries and areas (e.g., Pacific Paediatric Association, WHO Division of Pacific Technical Support, national and regional laboratory networks).	WPRO	Health NZ is in the early stages of looking at options to implement a 'Health Alert' system via the Health NZ website (we would look to model this on the system in place in Victoria, Australia). This would initially be targeted at health authorities in New Zealand but would also have the benefit of providing a single place for other countries to access information about current public health concerns. System design and implementation of any solution will identify the extensive range of stakeholders across Māori and Pacific providers, community NGOs, disability services, and other organisations, networks, and entities. Health NZ (via Hauora Māori Services) manages Hauora Māori Partners and other key stakeholders for Māori and holds an extensive list of key connections, networks, and contacts. Discussions are required on the design, delivery, and distribution of communications during an outbreak / trigger the health warning system to ensure that public health messages are communicated early and effectively. The Hauora Māori Services	The PHA is set up to receive and communicate measles case and exposure notifications to/from overseas jurisdictions 7 days a week via the National Focal Point. The PHA also maintains close relationships with Pacific countries and can notify them directly in the event of a measles outbreak. We will work with Health NZ to understand their progress implementing a Health Alert System and update you via the monthly RAG.

#	Recommendation	Source	HNZ Response	Ministry Comments
			Communications team will be key in disseminating these messages to the stakeholder list.	

Priority components for readiness	Current status (colour) | Requirements to achieve Green Status (text)			Prioritised actions (owner agency)	Overall Status & Trend
	People	Parts	Policy		
1. *Immunisation - MMR Coverage* ***(a) Immunity gaps for measles are identified and closed***	• Workforce capacity is a known constraint. The main vaccinating workforce is in primary care who remain stretched • Likely to remain AMBER in the absence of wider changes to primary care	• Immunity gaps across all age, ethnicity, geographic cohorts for NZ population described. • "Production" plan for addressing immunity gaps in place. • Evaluation/tracking of MMR catch-up activities in place • Evaluation/tracking of vaccinator resources in place	• Mechanism for implementing the NITAG recommendation to change to a single dose HPV programme identified and implemented • Development of a *Strategic Approach to Immunisation in New Zealand* to set the strategic direction and long-term aspirations for protecting individuals and families from vaccine-preventable diseases finalised	• Analyse available data and document measles immunity as well as MMR equity gaps across all age groups (HNZ and MoH) • Document plan for and implement MMR catch-up activities targeted at closing immunity and equity gaps (HNZ) • Develop a plan to track and evaluate the success of catch-up activities (HNZ) • Develop report to track the number of unique vaccinators who have given a MMR vaccination in the last week, month, year (HNZ) • Finalisation of the Strategic Approach (MoH)	↑
(b) Outbreak immunisation plans and capacity ready	• Plans for managing vaccinator resource to support surge capacity demands, including ring vaccination activity in place	• Agreed implementation plan, systems and resources in place to support immunisation outbreak response, including having ring vaccination in place	• Mechanism to provide free MMR to any measles contact identified and implemented • MMR priorities during an outbreak are agreed and documented	• Develop vaccinator resource plan (HNZ) • Review the 2019 outbreak MMR use prioritisation criteria (HNZ) • Finalise implementation plan and resources to support immunisation outbreak response including ring vaccination (HNZ) • Further work on implementation considerations for expanding eligibility for vaccines and preventative medicines to prevent specific infectious diseases (MoH with HNZ and Pharmac)	↑
2. *Governance and Leadership* ***Leadership and decision-making roles and processes are clear***		• National outbreak decision-making group finalised • *NB: An interim senior official meeting to provide oversight of measles outbreak preparedness has been established*		• Finalise the decision-making group framework and membership (HNZ with MoH) • Complete review of existing advisory and governance groups for measles and other infectious disease (MoH)	↑
3. *Surveillance and Intelligence* ***Information systems can identify immunity gaps, and support immunisation and outbreak management***		• Confirm the notifiable disease surveillance IT systems are fit for purpose • Immunisation coverage reporting, including MMR, is agreed and established • Modelled estimates available to help with surge planning across health sector are available		• Investigate potential IT systems-related disease data quality issues (MoH with HNZ) • Develop a plan and identify resource to address AIR data quality and information gaps prioritised by risk (HNZ) • Work with ESR to obtain modelling to assist with planning (MoH)	→
4. ***Case and Contact Management*** ***Operational teams are able to effectively respond and adapt to outbreaks***	• Surge workforce capacity is identified and available	• Welfare/manaaki support is in place for people required to isolate or quarantine	• Options for welfare/manaaki support for people required to isolate or quarantine are understood • Clear guidance on PCR testing requirements for outbreak phases developed • Guidance on prioritisation of serology testing in an outbreak developed • Policies and guidance for education and ECE sector are in place including ventilation, masking, & public transport	• Finalise the surge plan for contact tracing capacity (HNZ) • Complete evaluation of the current 'manaaki' support package (HNZ) • Updated advice on available PCR testing (HNZ) • Develop and agree serology prioritisation criteria (HNZ) • Prepare advice for the Minister of Health on likely size and scale (including costings) of support required for people to isolate or quarantine (MoH) • Establish protocols for outbreak management in education settings (HNZ with MoE and MoH)	→
5. ***Outbreak Support Functions:*** ***Key support functions are in place and resourced for outbreak response (includes Laboratory functions, Communication and PIM, Immunoglobulin, MMR vaccine, Hospital and Specialist Services, IPC incl PPE supply)***	• Primary care and hospital and specialist services are able to flex as needed • Surge workforce plans for outbreak support function areas (primary and community care, laboratory, hospital) are in place	• Potential measles cases and contacts to able to access timely and free assessment in the community • Māori communication plan developed • Laboratory arrangements to enable timely testing of priority measles samples on weekends and public holidays are in place • Mechanisms to access healthcare worker's measles immunity status are nationally consistent	• Options for free community assessment of measles cases is understood • Guidance on how to access immunoglobulin is in place	• Surge workforce requirements cross-checked against available workforce once national modelling data is available (HNZ) • Continue to review the feasibility of covering primary care costs for cases and contacts, from HNZ budget as an interim measure (HNZ) • Review whether communication and engagement arrangements are in place for Māori stakeholders/providers with HNZ Hauora Māori Tūmatanui and Hauora Māori Services teams (HNZ) • Identify mechanism/resource for ensuring timely testing of priority measles samples (HNZ) • Agree pathways to administer immunoglobulin and document this within the Communicable Disease Control Manual chapter on measles, and finalise prioritisation criteria (HNZ) • Identify lead and resource to enhance healthcare worker immune status documentation, processes and systems (HNZ – HSS)	→
6. ***Community, Cross Agency and International Aspects*** ***Vital relationships are robust with clear roles and responsibilities***		• Means of distributing MMR coverage data to individual ECEs and schools easily is in place • Agreed approach regarding documentation of MMR status for teachers confirmed	• Data sharing agreements are in place to allow sharing of immunisation data from HNZ with all early childhood centres and schools including Kōhanga Reo • An agreed approach for managing the risk of measles being exported to Pacific Island countries in the event of an outbreak is confirmed	• Develop an approach for reducing risk of exportation of measles to Pacific Island Countries • Explore data-sharing with Te Kōhanga Reo National Trust (HNZ) • Continue to work with Education to identify immunisation clinic pop-up opportunities in school settings (HNZ) • Set up systems to enable sharing of immunisation data to ECEs and schools including Kōhanga Reo (HNZ) • Pre-inform and prepare boards/parents/staff on steps in event of suspected or confirmed measles case (HNZ) • Explore options to build trust with teachers to enable documentation of MMR status (MoH)	↑

Key

- Risk identified that needs priority action and/or decision
- Some identified gaps or unknown vulnerabilities requiring targeted action
- No concerns identified regarding preparedness

- ↑ Overall status has improved since last update
- → Overall status is unchanged since last update
- ↓ Overall status has deteriorated since last update