TENTH ANNUAL MEETING OF THE REGIONAL VERIFICATION COMMISSION FOR MEASLES AND RUBELLA, ELIMINATION IN THE WESTERN PACIFIC

12 to 16 September 2022
Hybrid meeting
Tenth Annual Meeting of the Regional Verification Commission for Measles and Rubella, Elimination in the Western Pacific

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WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

MEETING REPORT

TENTH ANNUAL MEETING OF THE REGIONAL VERIFICATION COMMISSION FOR MEASLES AND RUBELLA ELIMINATION IN THE WESTERN PACIFIC

Convened by:
WORLD HEALTH ORGANIZATION
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NOTE

The views expressed in this report are those of the participants of the Tenth Annual Meeting of the Regional Verification Commission for Measles and Rubella Elimination in the Western Pacific and do not necessarily reflect the policies of the conveners.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for Member States in the Region and for those who participated in the Tenth Annual Meeting of the Regional Verification Commission for Measles and Rubella Elimination in the Western Pacific, held in Manila, Philippines from 12 to 16 September 2022.
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SUMMARY

The Tenth Annual Meeting of the Regional Verification Commission (RVC) for Measles and Rubella Elimination in the Western Pacific was held from 12 to 16 September 2022 via in-person and virtual participation.

The meeting objectives were to review and assess the 2021 progress reports of 16 national verification committees (NVCs) and the Subregional Verification Committee (SRVC) covering 21 Pacific island countries and areas (PICs), to verify the progress, achievement and maintenance of measles and rubella elimination by country or area, and to provide recommendations to accelerate progress towards elimination. Following the conclusion of the closed RVC meeting, the RVC held a two-hour side meeting with the Philippines NVC and the Department of Health to provide focused technical support and guidance to the host country.

From 2014 to 2021, six countries and two areas were verified as having achieved and maintained measles elimination, and four countries and two areas were verified as having achieved rubella elimination. In 2022, Singapore was verified as having achieved rubella elimination, documenting interruption of local transmission for a period of at least 36 months.

RVC members made country- or area-specific recommendations for each of the NVCs and SRVC, as well as for WHO in the Western Pacific Region.

1. INTRODUCTION

1.1 Meeting organization

The Tenth Annual Meeting of the Regional Verification Commission for Measles and Rubella Elimination in the Western Pacific was held in a hybrid mode from 12 to 16 September 2022. At the meeting, annual progress reports submitted by 16 NVCs and the SRVC were reviewed to verify the progress, achievement and maintenance of measles and rubella elimination by country or area, for the Pacific subregion and for the Western Pacific Region as a whole. The list of participants is available in Annex 1, and the agenda and timetable for the meeting are available in Annex 2.

1.2 Meeting objectives

The objectives of the meeting were:

1) to review and assess the annual progress reports of 16 NVCs and the SRVC, covering 21 PICs, and verify the achievement or maintenance of measles and/or rubella elimination for countries and areas that report to have achieved these goals; and

2) to prepare recommendations for individual countries and for the subregion for the achievement and maintenance of measles and/or rubella elimination.

1.3 Impact of the COVID-19 pandemic on elimination initiatives

In 2021, the Region was hit particularly hard by the coronavirus disease (COVID-19). In addition to surges of infection, the COVID-19 vaccine rollout significantly burdened immunization programmes by pulling staff away from routine immunization and surveillance activities. As a result, in 2021, declines in surveillance quality and measles- and rubella-containing vaccine (MRCV) vaccination coverage were reported in several countries. Countries also reported scaling back or postponing supplemental immunization activities (SIAs). Constraints on population movement and transportation continued to be in effect in 2021 in some places, leading to reduced accessibility to primary health-care services, halted staff training, interrupted vaccine supply chain and/or delayed laboratory testing.
2. PROCEEDINGS

2.1 Opening session

The meeting was called to order by Dr Yoshihiro Takashima. Dr Huong Thi Giang Tran delivered the opening remarks on behalf of Dr Takeshi Kasai, WHO Regional Director for the Western Pacific. Dr Tran reviewed the progress toward measles and rubella elimination in the Region and addressed new and continuing challenges, including the weakened performance of immunization and surveillance programmes during the COVID-19 pandemic and the risks of large-scale outbreaks in the Region. She emphasized the importance of regular RVC meetings to not only verify countries' measles and rubella elimination status but also review the efforts made by the Region to address the challenges and make recommendations to accelerate progress towards the goal of achieving measles and rubella elimination.

Dr Tran nominated Professor David Durrheim as chairperson, Dr Hiroshi Yoshikura as vice-chairperson and Dr Maria Rosario Capeding as rapporteur.

2.2 Global update on measles elimination and rubella elimination

The COVID-19 pandemic brought about a significant decrease in the number of reported measles and rubella cases. Three probable contributing factors include 1) natural immunity gained from the global resurgence of measles cases during 2018–2019; 2) non-pharmaceutical inventions for COVID-19, including movement restrictions, mask use and remote work/school; and 3) decreased measles and rubella surveillance sensitivity. However, in 2022, the global number of countries reporting large and disruptive measles outbreaks has been increasing every month, signalling a worrisome trend.

In 2021, the global routine immunization coverage for the measles vaccine was 81% for the first dose and 71% for the second dose, leaving 25 million children unprotected against the measles virus. Immunization programmes continue to struggle with balancing the COVID-19 pandemic response and routine immunization activities. The Measles and Rubella Strategic Framework 2021–2030 and Measles Outbreak Strategic Response Plan 2021–2023 both provide specific guidance for achieving and maintaining measles and rubella elimination and responding to outbreaks. Closing the immunity gap through routine and supplementary immunization activities, including catch-up, preventive campaigns and rapid outbreak response, will be critical to reducing morbidity and mortality due to measles infection.

2.3 Measles and rubella elimination in the Western Pacific Region: overview and progress in 2021–2022

Continuing transmission of endemic measles virus genotypes B3 and D8 is reported in the Western Pacific Region, while genotypes D9 and H1 were last reported in 2017 and 2019, respectively. The measles incidence in the Western Pacific Region was 0.6 cases per million population in 2021, indicating an 82% decrease from 2020. The impact of the COVID-19 pandemic led to a significant decline in routine immunization coverage of MRCV in several countries in the Region. Furthermore, 11 out of 17 countries and areas did not meet the target for the national non-measles, non-rubella discard rate in 2021, while all 13 countries and areas with available data did not meet their subnational surveillance sensitivity target. In 2021, eight countries and areas were verified as having maintained measles elimination, and six countries and areas were verified as having eliminated rubella. No large importation-related measles outbreaks have been reported in the Region since the second quarter of 2020.

Regional verification guidelines for rubella elimination were published in 2018, and the guidelines for surveillance of congenital rubella syndrome (CRS) in the Western Pacific Region were published in 2022. Four out of 11 countries and areas that have not achieved rubella elimination set a national target year for rubella elimination. CRS surveillance is established in 12 of 17 countries and areas in the Region.
2.4 Virologic surveillance of measles and rubella in the Western Pacific Region

The key to unlocking the door to the elimination of vaccine-preventable diseases is integrated surveillance. The Regional Strategic Framework for Vaccine-Preventable Diseases and Immunization in the Western Pacific, 2019–2022 clearly states the need for the integration of epidemiological data, laboratory results and data management to provide effective data for real-time public health decisions. There are now 395 laboratories in the measles/rubella laboratory network in the Region. However, during the COVID-19 pandemic, there was a lack of sample collection, making it difficult to be certain about the conclusions about the results observed during 2019–2022. Measles genotype H1 has not been detected in China since September 2019, but the second administrative-level, non-measles, non-rubella discard rates have not met the surveillance standards. Similarly, the proportion of cases regionally that have been genotyped is much decreased for 2020–2022. There is a need for improved sample collection and testing so that more accurate and representative surveillance can be performed. The Regional Strategic Framework for Vaccine-Preventable Diseases and Immunization in the Western Pacific 2021–2030 recommends that laboratories in priority countries are visited in 2022–2023 and a road map created to achieve integrated surveillance in these countries.

2.5 Country and area reports

2.5.1 Australia

**Epidemiology of measles and rubella:** No measles cases were confirmed. Rubella incidence was 0.1 cases per million in 2021. All cases were born before 1966 and were ineligible for vaccination; historical rubella exposure was theorized. No cases of CRS were detected after 2015.

**Quality of measles and rubella surveillance:** All surveillance quality indicators were met at the national level. The alternate indicator of surveillance sensitivity varies at the state level. CRS is a notifiable condition and is also included in the Australian Paediatric Surveillance Unit diseases with active monthly surveillance by paediatric clinicians.

**Population immunity:** Two-dose coverage with the measles, mumps and rubella (MMR) vaccine has remained above 93% since at least 2015. Since both doses are given before the age of assessment, first-dose coverage is not reported separately. States utilized various strategies to reach under-vaccinated adult populations and are exceeding 95% coverage with two doses of MMR vaccine in high-risk children by 60 months of age.

**Programme sustainability:** The Government fully funds the immunization programme. In 2021, mandatory reporting was introduced for all providers of any National Immunisation Programme vaccinations to the Australian Immunisation Register, a national whole-of-life register.

**Genotype evidence:** No measles or rubella genotypes were available.

2.5.2 Brunei Darussalam

**Epidemiology of measles and rubella:** No measles or rubella cases have been reported since 2020.

**Quality of measles and rubella surveillance:** All measles and rubella (MR) surveillance quality indicators were met.

**Population immunity:** Immunization has remained above 95% for both doses of the MR vaccine since 2016.

**Programme sustainability:** The country fully funds the immunization programme.

**Genotype evidence:** No measles or rubella genotypes were available.
2.5.3 Cambodia

**Epidemiology of measles and rubella:** Measles incidence was 0.3 per million. Eighty per cent of cases were below 5 years of age, 60% were fully vaccinated with two doses of MR vaccine, 20% received one dose, and 20% were too young to be vaccinated. Sixty per cent of the cases were identified as import-related.

Rubella incidence was 0.6 per million. Ninety per cent of cases were below 5 years of age, and all children were age-appropriately vaccinated, though 30% were below the age of vaccination. All cases were endemic.

**Quality of measles and rubella surveillance:** All surveillance quality indicators for fever and rash surveillance were exceeded, with some variability at the province level. The sentinel site suspected congenital rubella in 36 infants, but all were discarded after negative laboratory results. CRS sentinel surveillance also met all surveillance quality indicators.

**Population immunity:** Administrative vaccination coverage with the first dose of MR vaccine (MR1) has exceeded 100% since 2016, while coverage with the second dose (MR2) was 82%. The Demographic Health Survey 2021–2022 documented MR coverage at 83% for 1-year-old children, a 5% increase over the last estimate in 2014. Supplemental vaccination in high-risk communities accounted for a quarter of the MR1 doses and a third of the MR2 doses administered in 2021.

**Programme sustainability:** The Government has made measles elimination a top priority, allowing for catch-up vaccination for children up to 9 years of age, and annually vaccinating in high-risk communities.

**Genotype evidence:** No measles or rubella genotypes were available.

2.5.4 China

**Epidemiology of measles and rubella:** Measles incidence declined to 0.4 cases per million. Seventy-three per cent of cases were under 5 years old, and 25% were unable to document any vaccination. Outbreaks accounted for <1% of cases.

Rubella incidence declined to 0.6 cases per million. Thirty-three per cent of cases were under 5 years old, 48% were 15 years and older, and 55% were unable to document any vaccination. Outbreaks accounted for 16% of cases.

**Quality of measles and rubella surveillance:** All surveillance quality indicators were met at the national level. The sensitivity of surveillance varies at the province level. CRS is not a notifiable condition.

**Population immunity:** Reported national coverage with both doses of MMR vaccine is above 99%. Nine provinces targeted high-risk counties for supplemental MMR immunization, vaccinating 1.1 million children.

**Programme sustainability:** The Government supports measles and rubella elimination, funding vaccine costs for routine and supplemental immunization activities (SIAs) and laboratory expenses. Local governments fund operational costs.

**Genotype evidence:** No measles genotypes were available. Two per cent of rubella cases had genotype results. Genotype 2B (RVs/Kerala.IND/42.05CRS) was predominant, but 1E (RVi/MYS/01-REF) was also detected.

2.5.5 Hong Kong SAR (China)

**Epidemiology of measles and rubella:** Measles incidence was 0.1 per million. The case was over 50 years of age, with no vaccination history and no history of travel. Rubella incidence was 0.3 cases per
million. Both cases were near 30 years of age, fully vaccinated and with no history of travel. No CRS was reported.

**Quality of measles and rubella surveillance:** Surveillance sensitivity was low in contrast to previous years. Case investigation continues to be complete and timely.

**Population immunity:** The 2021 national preschool immunization coverage survey documents MMR in excess of 99% for birth cohorts 2015–2017. The 2019 serosurvey indicates measles virus antibodies in more than 95% of most age groups, except 94% in those 15–24 and 30–34 years of age, which parallels the cases in the 2019 airport outbreak. The 2019 serosurvey reports a prevalence of rubella virus antibodies mostly above 89%, above the rubella herd immunity threshold. Antenatal screening indicates immunity at above 95% in all women except those 20–29 years of age, where immunity is around 91%.

**Programme sustainability:** The Government provides full funding support for two doses of MMR vaccine.

**Genotype evidence:** No measles or rubella genotypes were available.

### 2.5.6 Macao SAR (China)

#### Epidemiology of measles and rubella:
No measles or rubella cases were reported. After thorough clinical discussions and laboratory testing and review by the NVC, no CRS case was confirmed.

#### Quality of measles and rubella surveillance:
All MR surveillance quality indicators were met. All hospitals, health centres and private clinics are required to report suspected cases of measles and rubella to the Macao Health Bureau, which conducts case investigation and simultaneous serology and molecular testing. The NVC members review all suspected cases to determine the final case confirmation status during outbreaks.

CRS surveillance is part of the congenital monitoring system and is supplemented with periodic retrospective searches for CRS cases.

#### Population immunity:
High immunization coverage was maintained at >95% for both doses of MMR since 2012.

The 2021 serological survey documented 79% rubella immunity. Serology from prenatal clinics in the public and private sector indicates rubella immunity of 85% since at least 2014.

#### Programme sustainability:
The vaccination programme is fully funded by the Government. In 2021, surveys to better understand rubella risk within the population were undertaken to further ensure measles and rubella elimination is maintained.

**Genotype evidence:** No measles or rubella genotypes were available.

### 2.5.7 Japan

#### Epidemiology of measles and rubella:
Measles incidence remained at 0.1 per million. Cases were mostly children under 10 years old (66%), and all cases received at least one dose of vaccination or had been born more than 50 years ago. One importation was documented.

Rubella incidence declined to 0.1 per million. Cases were divided: 36% were under 10 years of age, and 63% were adults over 10 years of age. Vaccination status was unknown for 35% of cases, all adults. CRS incidence was 0.01 per 10 000 live births.

#### Quality of measles and rubella surveillance:
Surveillance sensitivity indicators are met, using alternate data sources. CRS surveillance has been present since 1999. Suspected cases are not always reported, so sensitivity estimates are low.

#### Population immunity:
Coverage with both MR vaccine doses continues to exceed 94%. Population immunity to measles and rubella antibodies is high based on the 2021 serological survey; males aged
40–59 years showed an increase of around 10% immunity to rubella when compared to 2019, now averaging just below 90%.

Programme sustainability: The country funds two doses of free MR vaccination, sharing the burden between central and local levels of government at (9:1 cost sharing). Supplemental vaccinations are also supported (1:1 cost sharing).

Genotype evidence: The imported measles genotype was B3 of the lineage MVs/Logar.AFG/17.15/3. No rubella genotypes were reported.

2.5.8 Lao People’s Democratic Republic

Epidemiology of measles and rubella: Measles incidence was 0.3 per million. The cases were below 10 years of age and unvaccinated. Rubella incidence was 0.4 per million. Rubella cases were below 15 years of age and unvaccinated.

Quality of measles and rubella surveillance: Surveillance indicators, including sensitivity, were not met for measles, rubella or CRS. Surveillance is conducted with a new indicator-based surveillance system, which aggregates data at the district level.

There is no CRS surveillance for 2021. The CRS pilot programme ended in February 2021, and full implementation in five hospitals in the capitol is expected in 2022.

Population immunity: Routine immunization coverage shows MR first-dose coverage at 79%, with second-dose coverage 56%. No SIAs were conducted in 2021.

Programme sustainability: The Government has prioritized measles and rubella, but there are competing priorities, and the burden of the COVID-19 response was felt in 2021. The immunization programme relies heavily on partner support.

Genotype evidence: No measles or rubella genotypes were available.

2.5.9 Malaysia

Epidemiology of measles and rubella: Measles incidence was 3.9 per million population. Of the cases, 94% were under 5 years, and 36% reported two doses of vaccine. Two household outbreaks were identified, accounting for 3% of all cases. No importations were reported.

Rubella incidence was 3.0 per million population. Of the cases, 92% were under 5 years, and 62% reported at least one dose of vaccine. No CRS cases were reported.

Quality of measles and rubella surveillance: National-level surveillance indicators for sensitivity, adequate investigation and laboratory were met. There was greater variability in surveillance than in previous years, but only 5% of measles cases were unable to be laboratory confirmed.

Population immunity: Vaccination coverage with both doses has exceeded 96% since 2019. The seven-year dose of MMR will continue until 2023 to ensure all children born before 2016 receive their second measles vaccine dose. COVID-19 has delayed additional SIAs since 2020.

Programme sustainability: The Government is strongly committed to measles elimination by 2023. The national immunization programme fully funds two doses of vaccine, while training and consumables are supported by the Public Health Program. SIAs are funded by state and district health offices.

Genotype evidence: No measles or rubella genotypes were available in 2020–2021.

2.5.10 Mongolia

Epidemiology of measles and rubella: No measles or rubella cases were confirmed in 2021.
Quality of measles and rubella surveillance: Surveillance sensitivity indicators were not met, but given the small number of suspected cases, indicators for completeness and timeliness were met. CRS surveillance is not established.

Population immunity: Vaccination coverage for both doses declined 2%, to 95% for MMR1 and 94% for MMR2. No SIAs were conducted in 2021.

Programme sustainability: The Government fully funds all routine doses of MMR and SIAs. The comprehensive multi-year plan (cMYP) is in the approval process for a third year. A new national programme against communicable diseases is in progress; the section on measles and rubella elimination provides for SIAs every four to five years, beginning in 2024.

Genotype evidence: No measles or rubella genotypes were available.

2.5.11 New Zealand

Epidemiology of measles and rubella: No measles, rubella or CRS cases were reported.

Quality of measles and rubella surveillance: Surveillance sensitivity is near the target investigation rate. Case investigation continues to be complete and timely. CRS surveillance continues through the New Zealand Paediatric Surveillance Unit.

Population immunity: Vaccination coverage dropped to 88% for MMR1, while MMR2 coverage increased to 78%. While first-dose coverage declined 5–9% in some ethnic groups, second-dose coverage was stable or improved.

Programme sustainability: The country fully funds all vaccination activities. The health system is undergoing system-wide restructuring. The top priorities are routine immunization and expanding workforce capacity.

Genotype evidence: No measles or rubella genotypes were available.

2.5.12 Pacific island countries and areas

Epidemiology of measles and rubella: No measles or rubella cases were reported.

Quality of measles and rubella surveillance: The regional surveillance indicators were met based on data from only two Member States. Adequate case investigation occurred in only 46% of suspected cases.

Population immunity: All countries provide an MR-containing vaccine, and all but Vanuatu provide two doses through the routine immunization programme. Across the subregion, routine immunization coverage has been declining since 2017, with regional average estimates below 75% for both doses.

Programme sustainability: While Member States are committed to the immunization programme, the COVID-19 pandemic continued to affect programme delivery across the subregion.

Genotype evidence: No measles or rubella genotypes were available.

2.5.13 Papua New Guinea

Epidemiology of measles and rubella: In 2021, no cases of measles or rubella cases were confirmed.

Quality of measles and rubella surveillance: Case-based surveillance indicators were further weakened due to the COVID-19 response. Only investigated cases with blood specimens are entered in the case-based reporting system. CRS surveillance is not established in Papua New Guinea.

Population immunity: Routine vaccination with MR vaccine has been <50% for the past six years for both MR1 and MR2 doses. Immunity is boosted through SIAs, with the most recent one carried out in
2019. Immunity gaps exist for as much as 60% of children born after 1 January 2019, and also among a smaller proportion of children born in 2012–2014.

**Programme sustainability:** The COVID-19 response significantly impacted Papua New Guinea in 2021, affecting vaccination delivery, case investigation activities and delaying laboratory results.

**Genotype evidence:** No measles or rubella genotypes were available.

2.5.14 Philippines

**Epidemiology of measles and rubella:** Measles incidence was 2.0 per million population. Of the cases, 87% were under 5 years, and 80% could not document vaccination. Clusters were identified, but no outbreaks or importations were reported.

Rubella incidence was 0.3 per million. The majority of cases were under 5 years (95%), and 76% could not document vaccination.

**Quality of measles and rubella surveillance:** Surveillance indicators for measles and rubella did not achieve the targets. More than 90% of measles cases were unable to be laboratory confirmed. Laboratory testing for rubella is only conducted on measles-negative or equivocal specimens. There is no CRS surveillance, but rubella in pregnancy is closely monitored when detected.

**Population immunity:** Coverage with both doses of MMR has remained ≤75% since 2015, dropping to 56% MMR1 coverage and 54% MMR2 coverage in 2021. The second phase of the 2020/2021 MR campaign was completed for children 6–59 months old with national coverage of 90%. A catch-up campaign was conducted in Q4 of 2021 for MR and Td for children under 24 months, 6–7 years and 12–13 years, reaching coverage of 46% and 34%, respectively, in schoolchildren.

**Programme sustainability:** The Government has demonstrated support for measles elimination; however, local governments are responsible for vaccination implementation. The programme was significantly affected by COVID-19 in 2021, delaying specimen transport and prompting shortages of supplies and human resources. The programme adopted key immunization strategies, including offering school-based immunization in the community setting and vaccinating regardless of vaccination history. There was also significant engagement with the private sector and civil societies to support and promote vaccination activities.

**Genotype evidence:** No measles or rubella genotypes were available.

2.5.15 Republic of Korea

**Epidemiology of measles and rubella:** No measles or rubella cases were reported.

**Quality of measles and rubella surveillance:** Case confirmation is conducted by the national laboratory and 18 provincial laboratories, which also confirm serological results from five commercial laboratories. Surveillance sensitivity remains low due to the low suspicion of measles and rubella following elimination. Case investigation continues to be complete and timely.

CRS surveillance has been in place since 2000.

**Population immunity:** Routine MMR vaccination coverage has remained above 97% since 2011, with the second dose above 94%.

**Programme sustainability:** The Government fully funds routine immunization, including two doses of MMR and administration costs for all children up to 12 years of age, and supplemental vaccination as needed. An MMR vaccination certificate is required for elementary school entry.

**Genotype evidence:** No measles or rubella genotypes were available.
2.5.16 Singapore

**Epidemiology of measles and rubella:** No measles or rubella cases were reported.

**Quality of measles and rubella surveillance:** The surveillance programme detected vaccine-associated rash, but the enhanced surveillance programme remained suspended in 2021 due to COVID-19. As a result, a clinical case was not laboratory tested and excluded from incidence estimates.

All pregnancies and newborns are screened for congenital abnormalities if congenital rubella is suggested; testing for rubella is conducted.

**Population immunity:** Vaccination coverage with MMR1 has remained ≥95% for the past decade, while second-dose coverage remains around 91%. Primary school vaccination checks are in place and include catch-up for missed MMR doses. A 2016–2019 serologic survey of migrant workers estimates measles immunity at 90% but lower estimates among those born after 1990.

Rubella seropositivity in the 2018 national serological survey estimates rubella immunity at 91.7%, with no significant differences by gender or ethnic group.

**Programme sustainability:** The country fully funds all vaccination activities and is dedicated to maintaining measles elimination.

**Genotype evidence:** No measles or rubella genotypes were available.

2.5.17 Viet Nam

**Epidemiology of measles and rubella:** Measles incidence declined to 0.5 cases per million without any detected outbreaks. The most commonly affected age was under 5 years, and 67% of cases had an unknown vaccination status.

Rubella incidence declined to 0.3 cases per million without any detected outbreaks. The mean age of cases was 12 years of age, and 85% of cases had unknown vaccination status.

**Quality of measles and rubella surveillance:** The country has two surveillance systems for measles and rubella cases. The country did not meet the majority of the surveillance quality indicators due to the workforce response to the COVID-19 pandemic.

Sentinel CRS surveillance continues in three major hospitals. The sensitivity of the system is high, with an investigation rate of 3.6 per 10 000 live births.

**Population immunity:** Coverage with measles vaccine at 9 months declined 8% to 89%, and the 18-month MR (first dose of rubella, second dose of measles) also declined 8% to 85% coverage.

**Programme sustainability:** The COVID-19 response significantly impacted Viet Nam in 2021, affecting vaccination delivery, case investigation activities, and delaying laboratory results.

**Genotype evidence:** All three measles genotypes were D8, reflecting 6% of all confirmed cases. No rubella genotypes were available.

2.6 Implications of false-positive IgM results for measles and rubella surveillance in the elimination setting

Incorrect interpretation of laboratory results for measles can result in an unnecessary public health response, inappropriate SIAs and a lack of confidence in laboratory findings. However, correct interpretation is key to resolving the true disease status for a challenging case. All information regarding the suspected case must be shared between health-care providers, epidemiologists and laboratory staff. False-positive IgM measles results have been detected globally and for many years. Guidelines are available to indicate the next steps or suggest a possible interpretation, but these are not user friendly and can take time to find. Similarly, PCR results are useful in particular situations, but guidance is not
easily found for users. It is recommended that a simple algorithm is made available and that an expert panel interpret results for complex cases.

2.7 Operational targets: Progress and achievements towards 2020 targets and proposed targets for 2025

Substantial progress has been made in the Western Pacific Region towards achieving the operational targets by 2020 that were set by the *Regional Strategy and Plan of Action for Measles and Rubella Elimination* in 2017. To sustain the progress and accelerate efforts towards achieving the regional goal of measles and rubella elimination, setting the operational targets has been a very meaningful approach in the Western Pacific Region. The proposed operational targets for 2025 were presented to and reviewed by the Technical Advisory Group (TAG) in June 2022, and by the RVC during this meeting. The operational targets broadly cover aspects related to commitment, overall planning and epidemiologic and laboratory surveillance, including disease-specific targets for measles and rubella. The measles-specific targets include sustained measles elimination in all countries and areas that have achieved it, reverification of measles elimination in countries where elimination status could not be sustained, verification of measles elimination in near-elimination settings, interruption of ongoing measles virus transmission in endemic countries (measles virus genotypes B3 and D8), and detection and interruption of any residual transmission of measles virus genotypes H1 and D9. The rubella-specific targets include sustained rubella elimination in all countries and areas that achieved it, verification of rubella elimination in near-elimination settings, and closing rubella immunity gaps among the adult population in countries where these gaps exist. The finalized operational targets for 2025 will be presented to the TAG in 2023. The *Regional Strategic Framework for Vaccine-Preventable Diseases and Immunization in the Western Pacific 2021–2030* and the *Regional Strategy and Plan of Action for Measles and Rubella Elimination in the Western Pacific* will continue to guide progress towards achievement of measles and rubella elimination in the Region.

2.8 Draft Pacific strategy and plan of action for measles and rubella elimination

The Pacific subregion, covering 21 Pacific island countries and areas (PICs), is treated as one epidemiologic block for measles and rubella elimination. Considering the specific context of PICs, the requirements outlined in the regional verification guidelines are difficult to achieve on a country-by-country basis. Despite the surveillance challenges, it is unlikely that circulation of endemic measles is occurring undetected in the PICs since fever and rash surveillance does occur, and the island demography and geography with immunization and rapid response limits outbreak duration. Measles outbreaks in 2014 and 2019 demonstrated the capacity of the PICs community to detect and respond effectively in outbreak countries, and to preventatively close immunity gaps in other countries. SIAs have been conducted to fill immunity gaps in low-performing countries. The proposed minimum standards for measles and rubella elimination verification for PICs were presented. Broadly, these include qualitative documentation of measles and rubella surveillance and meeting standard performance requirements for selected indicators along with additional supportive/alternate evidence. The SRVC will advocate for political commitment through Pacific Health Ministers for verifying measles and rubella elimination by 2025.

### 3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

3.1.1 Overall conclusions

- The RVC notes the lowest level of measles and rubella activity ever reported in the Western Pacific Region. Non-pharmaceutical interventions (e.g. mask-wearing, social distancing,
lockdowns) and decreased treatment-seeking behaviour in response to the COVID-19 pandemic have clearly played a role, and this may offer countries and areas a false sense of security. As international borders open and international travel increases, the risk of measles importation and outbreaks also increases.

- While recognizing the pandemic-related diversion of public health resources, the RVC notes with concern declined surveillance performance, especially at subnational levels.
- The RVC emphasizes the critical role of robust public health surveillance to allow accurate and timely diagnosis of measles and rubella to inform public health action. It reminds countries that the current low rates of measles and rubella incidence may be due to non-pharmaceutical measures to contain the COVID-19 epidemic and decreased treatment-seeking behaviour.
- The RVC notes with grave concern the significant decline in MR vaccination coverage in 2021 in several countries in the Region, resulting in an acute increase in susceptible persons and pending large outbreaks unless immunity gaps are urgently filled.

3.1.2 Conclusions for Member States

Australia
- The RVC verifies that Australia has maintained elimination of measles and rubella.
- The RVC congratulates Australia for its commitment to strong measles and rubella surveillance and optimizing vaccination coverage.
- The RVC appreciates that high proportions of measles and rubella cases over many years have been genotyped.

Brunei Darussalam
- The RVC verifies that Brunei Darussalam has maintained elimination of measles and rubella.
- The RVC appreciates the detailed epidemiologic and laboratory investigation report for the IgM-positive suspected case that was discarded as non-measles. It reflects upon the good surveillance performance.
- The RVC notes with concern that the NVC was unable to meet in 2021.

Cambodia
- The RVC notes that there is currently no evidence of endemic measles or rubella transmission in Cambodia.
- The RVC applauds the Cambodian Government’s strong commitment to measles and rubella elimination.
- The RVC agrees strongly with the NVC that the risk of measles resurgence remains due to 1) likely importation from neighbouring measles-endemic countries, with large-scale movements of international migrant workers; 2) high mobility of the domestic population with limited access to health care including vaccination; and 3) residual immunity gaps among children who missed routine immunization, especially in high-risk communities.
- The RVC notes with concern considerable population immunity gaps, suggested by Demographic Health Surveys, subnational coverage estimates and WHO/UNICEF national coverage estimates.
- Catch-up and high-risk community immunization activities alone are unlikely to prevent a measles resurgence.
China

- The RVC congratulates China for the impressive progress made in recent years towards elimination of measles and rubella, with the lowest-ever measles and rubella incidence reported in 2021.
- The RVC notes the excellent collaboration between health and education authorities in implementing school-entry immunization checks.
- The RVC acknowledges that China has sustained high routine MR vaccination coverage but notes a legacy rubella immunity gap in high school-aged students and young adults.
- The RVC notes the well performing measles and rubella surveillance system but the absence of CRS surveillance.
- The RVC is encouraged that the endemic genotype, H1, has not been detected in China since 2019.

Hong Kong SAR (China)

- The RVC verifies that Hong Kong SAR (China) has maintained elimination of measles and rubella.
- The RVC appreciates the responsiveness of Hong Kong SAR (China) to RVC recommendations.

Macao SAR (China)

- The RVC verifies that Macao SAR (China) has maintained elimination of measles and rubella.
- The RVC appreciates the comprehensive and exceptional progress report that includes a detailed description of disease surveillance.
- The RVC applauds the Macao SAR (China) policy that requires new hospital staff to provide evidence of vaccination and consideration of applying the same policy to other health staff.
- The RVC notes a small drop in routine vaccination coverage for the first time in five years and encourages Macao SAR (China) to prevent further decline.

Japan

- The RVC verifies that Japan has maintained elimination of measles and notes low-level rubella activity.
- The RVC applauds Japan for achieving MR vaccination coverage that exceeds pre-pandemic levels.
- The RVC appreciates the thorough responses to RVC recommendations.

Lao People’s Democratic Republic

- The RVC notes with concern the decline in vaccination coverage nationally and in most provinces in 2021, as well as weaker surveillance performance compared to 2020.
- All measles and rubella cases were unvaccinated children.
- The RVC applauds the review of guidelines (national surveillance guidelines, outbreak management and measles emergency response plan) currently being finalized.
- The RVC commends the Government’s efforts to boost vaccination coverage via SIAs (2020) and catch-up immunization (2022) conducted at subnational levels targeting high-risk priority and low-performing districts.
- The RVC acknowledges the laboratory capacity-building currently under way.
Malaysia

- The RVC appreciates Malaysia’s efforts to learn from the recent circulating vaccine-derived poliovirus type 1 and 2 outbreaks and to introduce a policy of free polio immunization for all children aged 7 years and below (regardless of their citizenship status) starting in January 2022.
- The RVC commends the use of “reduction in measles incidence” as a key performance indicator for top public health managers in the country as this measure aligns with the strategic priorities of the Immunization Agenda 2030 and regional Measles and Rubella Strategic Framework 2021–2030 to improve universal health coverage.
- The RVC notes with concern that high national-level routine immunization coverage hides subnational gaps in MRCV1 and MRCV2 coverage.
- The acute fever and rash surveillance system, which was performing well previously, has declined during the COVID-19 pandemic in 2021, particularly surveillance sensitivity and adequate investigation at the second administrative level.
- The RVC notes particular challenges that Malaysia has with determining accurate denominator data for calculating vaccination coverage.

Mongolia

- The RVC recognizes the improved quality of Mongolia’s annual progress report.
- No confirmed measles or rubella cases were reported in 2021, but further confirmatory testing of suspected cases would have been helpful.
- The RVC notes with concern the continuing differences in vaccination coverage between the most recent Multiple Indicator Cluster Survey 2018 and the reported administrative data.
- Issues of migration, mining and other development projects need to be carefully considered for immunization strategy development.
- The RVC is concerned about the unmet surveillance performance quality indicators, especially the low non-measles discard rates at national and subnational levels.

New Zealand

- The RVC verifies that New Zealand maintained elimination of measles and rubella.
- The RVC expresses grave concern about MR vaccination coverage trends, particularly but not exclusively affecting Māori and Pacific children, leaving a large group of young children vulnerable.
- The RVC acknowledges that reform currently under way in New Zealand’s health and disability system could provide important opportunities to help sustain measles and rubella elimination status in the country.
- The RVC concurs with concerns raised by the New Zealand NVC that also highlight the persistent immunity gap in young adults.

Pacific island countries and areas (PICs)

- The RVC agrees with the SRVC that there continues to be no evidence of ongoing endemic transmission of measles since 2019 and rubella since 2012 in PICs.
- Discrete immunity gaps persist in some countries and areas, and outbreaks in PICs could be devastating, especially if outbreak responses are delayed.
- The RVC notes with concern that Vanuatu has postponed the introduction of MRCV2 but appreciates the plans to introduce it in 2023.
- The RVC strongly endorses the plans of the six low-performing countries to conduct MRCV catch-up vaccination.
• The RVC supports the SRVC’s recommendations for PICs to aim for verification of measles and rubella elimination by 2025, and strongly urges the full support of PIC governments of this important public health goal.

Papua New Guinea
• The RVC notes with grave concern that the routine functions of the NVC remain severely compromised, and the NVC has not met since 2018.
• The majority of recommendations from the last RVC report remain unaddressed.
• The RVC notes with concern that the COVID-19 pandemic has worsened routine immunization and surveillance programme performance in 2021. The modest gains of mobile and outreach immunization activities in 2020 have been lost, and routine immunization coverage has dropped to dangerously low levels.
• The RVC appreciates the development of the National Immunization Strategy 2021–2025 and the Vaccine Preventable Disease Surveillance Guidelines and encourages the planned rollout training to occur as soon as possible.

Philippines
• Endemic measles and rubella transmission persists in the Philippines, and the COVID-19 pandemic has further increased critical immunity and surveillance gaps.
• The RVC compliments the Philippines on an exceptional effort to reach vulnerable children through a combined high-performance national polio/measles/rubella SIA.
• The RVC notes with concern a large decline in routine MRCV1 and MRCV2 coverage in 2021–2022. The country is facing the risk of a very large measles outbreak due to the rapid accumulation of susceptible children.
• Achieving measles and rubella elimination will require a comprehensive national plan with strong political leadership, coordination and advocacy, and excellent performance of the decentralized health system, with necessary resourcing from all levels of government.
• The legacy rubella vaccination gap in young adults poses a risk of a CRS epidemic.

Republic of Korea
• The RVC verifies that the Republic of Korea has maintained the elimination of measles and rubella.
• The RVC applauds the Republic of Korea’s comprehensive efforts to maintain measles and rubella elimination and maintain excellent health system performance during the COVID-19 pandemic.
• The RVC appreciates the Republic of Korea’s responsiveness to the RVC recommendations.

Singapore
• The RVC thanks Singapore for its high-quality report on measles elimination and verifies that Singapore has sustained interruption of endemic measles virus transmission.
• The RVC verifies that Singapore has provided compelling evidence that endemic rubella virus transmission has been interrupted for more than 36 months.
• However, the RVC concurs with the NVC’s concern about lower levels of IgG seroprevalence among the high-risk subgroup of migrant workers. Unless homogenous high levels of immunity are achieved in this subgroup, the threat of outbreaks and re-established transmission remains.
• The RVC notes with great concern that laboratory investigation of acute fever and rash cases remains suspended since April 2020.
Viet Nam

- The RVC applauds Viet Nam’s active engagement with WHO to strengthen laboratory surveillance and capacity.
- The COVID-19 pandemic has stalled progress towards increasing coverage and fully implementing the planned surveillance strengthening.
- The RVC notes no measles or rubella outbreaks were reported, and measles and rubella incidence rates have declined since 2020. However, the RVC notes with concern that vaccination status was reported as unknown for the majority of cases among children, indicating inadequate case investigation.
- The RVC is concerned that the planned MR vaccination campaign in 2021–2022 was not conducted, and most surveillance performance indicator targets were not met.

3.2 Recommendations

3.2.1 Recommendations for Member States

While recognizing the pandemic-related diversion of public health resources, the RVC notes with concern the decline in surveillance performance in many countries, especially at subnational levels. The RVC requests all countries to include in future annual progress reports their measles and rubella diagnostic and case classification algorithm.

Australia

1. The RVC recommends that Australia carefully monitor vaccination coverage among First Nations children and ensure that any gaps are rapidly closed.
2. The RVC recommends that Australia consider university entry checks for MR vaccination, especially for international students.
3. The RVC looks forward to Australia completing the update of the national rubella guidelines.

Brunei Darussalam

1. The RVC reminds the NVC of its responsibility to meet annually (in person or virtually).
2. The RVC urges Brunei Darussalam to accelerate efforts towards implementing previous RVC recommendations:
   a. Establish policies for ensuring high measles and rubella immunity among high-risk migrant groups (e.g. foreign students and migrant workers).
   b. Ensure enhanced surveillance is maintained to promptly detect any suspected measles or rubella cases among these high-risk groups.
   c. Provide additional information on rubella population immunity, such as the proportion of pregnant women tested for rubella or the proportion seronegative in the past 5–10 years. Alternatively, consider conducting a serological survey to assess immunity against rubella among women aged 15–44.

Cambodia

1. The RVC recommends conducting a high-quality, nationwide, non-selective SIA for children aged 9–59 months to fill immunity gaps and prevent the resurgence and re-establishment of endemic measles in Cambodia.
2. The RVC agrees with the NVC that the performance of measles and rubella surveillance needs to be strengthened, especially suspected case notification from the health facilities, active case searches, timely detailed case investigation and contact tracing in communities, and genotype sequencing.
3. The RVC requests that a target year for rubella elimination be established in line with the 2017 Regional Committee resolution.

4. When the NVC is satisfied that the five lines of evidence support the interruption of measles transmission with elimination quality surveillance and with coverage to sustain elimination, then application for reverification of measles elimination can be made to the RVC.

China

1. Noting sustained progress towards measles and rubella elimination, the RVC encourages China to:
   a. consider setting a target year for rubella elimination in line with the 2017 Regional Committee resolution;
   b. continue to intensify efforts in mitigating the risk of re-establishing endemic transmission after importation; and
   c. further enhance preparedness at subnational levels to contain import-related outbreaks.

2. The RVC encourages China to take active measures to close the rubella immunity gap, including leveraging the strong COVID-19 vaccination platform to reach susceptible adolescents and young adults.

3. The RVC encourages China to further consider methods for CRS surveillance.

4. The RVC encourages China to conduct retrospective genotyping analysis of available residual laboratory specimens from 2021 and 2022, including IgM-positive serum, to confirm the interruption of endemic H1 genotype measles virus transmission in China and in the world.

5. With the low incidence of measles in China, the RVC encourages China to:
   a. genotype as many cases as possible;
   b. develop laboratory capacity to thoroughly characterize measles breakthrough infections, particularly the use of IgG avidity testing; and
   c. define the source of infection for as many cases as possible.

6. Given the country’s population size, the RVC encourages the NVC to incorporate more granular analysis by subnational levels in future progress reports.

Hong Kong SAR (China)

1. The RVC encourages Hong Kong SAR (China) to maintain excellent laboratory and epidemiologic surveillance, including genotyping and identification of source of infection.

2. The RVC notes the important school-based mop-up strategy and looks forward to hearing about the achievements of this initiative.

3. While acknowledging the impact of COVID-19, the RVC encourages Hong Kong SAR (China) to examine any additional reasons for the low non-measles, non-rubella discard rates and share the findings with the RVC.

Macao SAR (China)

1. The RVC recommends Macao SAR (China) to consider extending its policy on vaccine record screening prior to employment to workers frequently in contact with foreign visitors (e.g. casino, tourism and airline workers).

2. The RVC encourages Macao SAR (China) to publish its experience of achieving and sustaining measles and rubella elimination, as this is a great case study in an area with a huge number of visitors and an active tourism industry.

Japan

1. The RVC encourages Japan to continue its excellent genotyping practices.

2. The RVC encourages Japan to determine the source of measles infection for as many cases as possible.
3. The RVC encourages Japan to continue its efforts towards rubella elimination and requests that a revised target year for rubella elimination be established.

Lao People’s Democratic Republic
1. Given the immunity gaps in young children that have resulted from the pandemic, the RVC recommends that planning be initiated for a high-quality nationwide MR SIA.
2. The RVC requests that all suspected measles and rubella cases be confirmed by laboratory testing and that complete information on cases be collected, particularly vaccination status, clinical picture and source of infection, and reported.
3. Innovative strategies to close immunity gaps in high-risk communities should be bolstered and collaborations strengthened (e.g. nongovernmental organizations, medical societies, private sector).
4. The RVC looks forward to the performance report of the expanded pilot CRS surveillance system.

Malaysia
1. The RVC supports the NVC’s recommendation that Malaysia adopt national-level policies to ensure provision of equitable, free-of-charge, routine immunization services (with all routine immunization antigens) to high-risk subpopulations, including non-citizens and refugees.
2. Noting steady progress towards rubella elimination, the RVC recommends that Malaysia set a target year for rubella elimination in line with the 2017 Regional Committee resolution.
3. The RVC recommends that well conducted coverage surveys or serosurveys be used to overcome the perplexing denominator issue, validate administrative coverage estimates and identify possible immunity gaps.
4. The RVC strongly supports Malaysia’s plans to conduct a nationwide MR SIA in 2022–2023 based on the successful experience of the recent polio outbreak response. Because administrative coverage estimates may hide immunity gaps in some subpopulations, non-selective approaches should be considered, especially in high-risk areas. The RVC urges Malaysia to work closely with WHO to ensure successful planning and implementation of the SIA.
5. The RVC encourages Malaysia to carefully apply WHO regional guidance to differentiate vaccine-related rash presentations from measles cases.

Mongolia
1. Noting strong progress towards rubella elimination, the RVC recommends that Mongolia set a target year for rubella elimination in line with the 2017 Regional Committee resolution.
2. As a pre-requisite to applying for verification of rubella elimination, additional CRS surveillance data should be collected to demonstrate the absence of CRS.
3. The RVC requests that complete information, particularly vaccination status, clinical picture and source of infection, be collected for all suspected measles or rubella cases, and included in future reports to the RVC.
4. The RVC recommends that strategies be adopted to fill immunity gaps, particularly those caused by lower MRCV coverage as a result of the COVID-19 pandemic.
5. When the NVC is satisfied that the five lines of evidence support the interruption of measles transmission in the presence of elimination quality surveillance and with coverage to sustain elimination, then application for reverification of measles elimination should be made to the RVC.

New Zealand
1. The RVC urges New Zealand to rapidly close the immunity gaps among young children created by progressively declining MMR vaccination coverage, with special attention to Māori and Pacific children.
2. The RVC looks forward to a report on the impact and follow-up initiatives following the national effort to close immunity gaps among young adults.
3. The RVC recommends that New Zealand reapply successful interventions made in response to the devastating 2019 measles outbreak to limit the impacts of future outbreaks on New Zealand and neighbouring Pacific Island populations.
4. As international travel resumes in the wake of the pandemic, the RVC encourages New Zealand to take all necessary steps to limit the importation of measles and rubella viruses by foreign travellers, students and workers.

Pacific island countries and areas (PICs)
1. The RVC urges low-performing countries and areas to close immunity gaps to prevent large-scale outbreaks.
2. The RVC urges countries and WHO to accelerate strategies to strengthen laboratory capacity in PICs.
3. The RVC encourages active implementation of the Pacific plan of action for measles and rubella elimination by all countries and areas.

Papua New Guinea
1. The RVC again urges Papua New Guinea to support the critical activities of the NVC and reminds the NVC of its obligation to meet annually (in person or virtually) and to engage in technical review, including case confirmation, and advocacy to the Government.
2. The RVC is deeply concerned about the very large immunity gaps that have accumulated among children and urges Papua New Guinea to implement the postponed nationwide MR SIA as soon as possible and ensure optimal coverage.
3. The RVC strongly supports resumption of accelerated mobile and outreach immunization activities, and completion of the planned catch-up vaccination rounds in high-risk provinces.
4. The RVC encourages Papua New Guinea to leverage the technical assistance of WHO and other partners to strengthen immunization and surveillance programme capacity at subnational levels. This will assist in accelerating the planned vaccine-preventable disease surveillance and EPI refresher training.
5. Concurring with the NVC’s concerns, the RVC recommends to senior management that nothing hamper or delay resource mobilization for the planned, urgently needed activities in 2022–2023.

Philippines
1. The RVC urges the Philippines to take urgent action to mitigate the risk of a pending large measles outbreak, including implementing a timely, well planned and organized national vaccination campaign.
2. The RVC encourages the Philippines to ensure that measles and rubella elimination is considered a national health priority, to renew the national plan of action for measles and rubella elimination and execute resolutions to strengthen critical health system factors identified.
3. Given the bimodal distribution of immunity gaps and increasing rubella cases, the RVC encourages the Philippines to consider conducting CRS surveillance in selected paediatric hospitals and make plans to address the very concerning rubella immunity gap in young adults aged 20–29 years old.
4. The RVC recommends the Philippines work with WHO and partners to strengthen capacity at subnational levels for using epidemiological and surveillance data to understand subnational programme weaknesses, and to guide immunization programme strengthening.
5. The RVC encourages full implementation of important strategies already in place, particularly school-entry checks and vaccination of overseas Filipino workers.
Republic of Korea
1. The RVC encourages the Republic of Korea to monitor immunity levels in young adults and healthcare workers by conducting in-depth analysis of the recent serosurvey data.
2. As international travel resumes in the wake of the pandemic, the RVC encourages the Republic of Korea to take all necessary steps to limit the importation of measles and rubella viruses by foreign travellers, students and workers.

Singapore
1. Singapore should reinstate the enhanced surveillance protocol with laboratory testing of all suspected cases, in the private and public health sector, to improve the completeness of investigations as soon as possible.
2. The RVC appreciates that high-quality molecular epidemiology analysis remains critical in Singapore, with very high international population movement and multiple measles and rubella importations historically, and encourages Singapore to revive genotyping reporting as soon as possible.
3. The RVC encourages resumption of regular seroprevalence monitoring among migrant workers and implementation of catch-up vaccination to close any immunity gaps found.
4. The Singapore Ministry of Health is encouraged to prioritize requiring evidence of vaccination among migrant workers and international students.
5. School-based immunization should be fully utilized to reach under-immunized children.

Viet Nam
1. The RVC encourages Viet Nam to revitalize routine immunization services and school-entry checks of vaccination status.
2. The RVC awaits a report from Viet Nam with in-depth analysis of the recent serosurvey data to estimate immunization coverage and identify at-risk population subgroups by their characteristics.
3. The RVC strongly recommends that the SIA postponed due to the COVID-19 pandemic should be carefully planned and implemented to close immunity gaps.
4. The RVC advises that the planned surveillance harmonization of rash and fever surveillance should be fully implemented with necessary training and support.
5. The RVC requests that a target year for rubella elimination be established in line with the 2017 Regional Committee resolution.

3.2.2 Recommendations for WHO
The RVC requests WHO to:
1. Support priority countries to improve subnational surveillance performance that has been significantly negatively impacted by the COVID-19 pandemic.
2. Support selected countries in planning and implementing high-quality preventive SIAs.
3. Support laboratories of selected countries to build serological and molecular testing capacity to improve surveillance sensitivity.
4. Support Mongolia and Cambodia to accelerate their progress toward reverification of measles elimination.
5. Support PICs to accelerate their progress toward measles and rubella elimination.
6. Closely collaborate with the WHO Regional Office for South-East Asia to strengthen cross-border coordination to prevent and rapidly respond to measles and rubella outbreaks.
7. Support countries to strengthen their preparedness and capacity to rapidly detect and respond to measles and rubella outbreaks.
8. Support studies to better understand measles infection in vaccinated individuals during the 2019 outbreaks in Fiji and Tonga.
ANNEXES

Annex 1. List of Regional Verification Commission members and Secretariat

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## Programme of Activities

### Day 1: Monday, 12 September 2022

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<th>Activities</th>
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<td>8:00–8:30</td>
<td>1. Opening session</td>
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<td></td>
<td>1.1. Opening remarks</td>
<td>Dr Huong Thi Giang Tran</td>
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<td>1.2. Self-introduction</td>
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<td>1.3. Administrative announcements</td>
<td>Dr Yoshihiro Takashima</td>
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<td>8:30–8:40</td>
<td>2. Overview</td>
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<td>2.1. Objectives of the meeting</td>
<td>Professor David Durrheim</td>
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<td>2.2. Global Update on Measles and Rubella Elimination</td>
<td>Dr Patrick O'Connor</td>
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<td>2.3. Measles and rubella elimination in the Western Pacific Region: overview and progress in 2021-2022</td>
<td>Dr Chung Won Lee</td>
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<td>8:40–9:00</td>
<td>2.4. Virologic surveillance of measles and rubella in the Western Pacific Region</td>
<td>Dr Roger Evans</td>
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<td>9:00–9:20</td>
<td>GROUP PHOTO AND COFFEE BREAK</td>
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<td>9:20–9:40</td>
<td>Report from Singapore</td>
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<td>10:10–10:50</td>
<td>Presentation of five lines of evidence and missing data for measles</td>
<td>Dr Paul Rota</td>
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<td>Presentation of five lines of evidence and missing data for rubella</td>
<td>Dr Lisi Tikoduadua</td>
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<td>Comments of Secondary Reviewer</td>
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<td>10:50–11:10</td>
<td>Draft recommendations for Singapore</td>
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| 11:10–11:40 | Report from Philippines  
Presentation of five lines of evidence and missing data for measles  
Presentation of five lines of evidence and missing data for rubella  
Comments of Secondary Reviewer  
Comments of other RVC members  
Assessment  
Draft recommendations for Philippines | Dr Michael George Baker  
Dr Dukhyoung Lee  
RVC members  
RVC members |
| 11:40–12:00 | LUNCH BREAK                                                             |                           |
| 12:00–12:50 | Report from Malaysia  
Presentation of five lines of evidence and missing data for measles  
Presentation of five lines of evidence and missing data for rubella  
Comments of Secondary Reviewer  
Comments of other RVC members  
Assessment  
Draft recommendations for Malaysia | Dr Aiqiang Xu  
Dr Mark Papania  
RVC members  
RVC members |
| 12:50–13:20 | Report from Viet Nam  
Presentation of five lines of evidence and missing data for measles  
Presentation of five lines of evidence and missing data for rubella  
Comments of Secondary Reviewer  
Comments of other RVC members  
Assessment  
Draft recommendations for Viet Nam | Dr Dukhyoung Lee  
Dr Maria Rosario Capeding  
RVC members  
RVC members |
| 13:20–13:40 | Draft recommendations for Malaysia | RVC members |
| 13:40–14:10 | Report from Pacific Island Countries and Areas  
Presentation of five lines of evidence and missing data for measles  
Presentation of five lines of evidence and missing data for rubella  
Comments of Secondary Reviewer  
Comments of other RVC members  
Assessment  
Draft recommendations for Pacific Island Countries and Areas | Dr Paul Rota  
Dr Ho-fai Thomas Tsang  
RVC members  
RVC members |
| 14:10–14:30 | Draft recommendations for Pacific Island Countries and Areas | RVC members |
| 8:00–8:15  | Review of Day 1                                                          | Professor David Durrheim |
| 8:15–9:00  | Report from Pacific Island Countries and Areas  
Presentation of five lines of evidence and missing data for measles  
Presentation of five lines of evidence and missing data for rubella  
Comments of Secondary Reviewer  
Comments of other RVC members  
Assessment  | Dr Paul Rota  
Dr Ho-fai Thomas Tsang  
RVC members  |
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<td>9:20–9:50</td>
<td>Report from Mongolia&lt;br&gt;Presentation of five lines of evidence and missing data for measles&lt;br&gt;Presentation of five lines of evidence and missing data for rubella&lt;br&gt;Comments of Secondary Reviewer&lt;br&gt;Comments of other RVC members&lt;br&gt;Assessment&lt;br&gt;Draft recommendations for Mongolia</td>
<td>Dr Hiroshi Yoshikura</td>
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<td>9:50–10:10</td>
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<td>Dr Thian Lian Soo</td>
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<td>10:10–10:30</td>
<td>COFFEE BREAK</td>
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<td>10:30–11:00</td>
<td>Report from Cambodia&lt;br&gt;Presentation of five lines of evidence and missing data for measles&lt;br&gt;Presentation of five lines of evidence and missing data for rubella&lt;br&gt;Comments of Secondary Reviewer&lt;br&gt;Comments of other RVC members&lt;br&gt;Assessment&lt;br&gt;Draft recommendations for Cambodia</td>
<td>Dr Mark Papania</td>
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<td>Dr Phonepadith Xangsayarath</td>
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<td>11:00–11:20</td>
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<td>11:20–11:50</td>
<td>Report from Lao PDR&lt;br&gt;Presentation of five lines of evidence and missing data for measles&lt;br&gt;Presentation of five lines of evidence and missing data for rubella&lt;br&gt;Comments of Secondary Reviewer&lt;br&gt;Comments of other RVC members&lt;br&gt;Assessment&lt;br&gt;Draft recommendations for Lao PDR</td>
<td>Dr Maria Rosario Capeding</td>
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<td>Dr Michael George Baker</td>
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<td>12:10–13:00</td>
<td>LUNCH BREAK</td>
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<td>13:00–13:30</td>
<td>Report from Papua New Guinea&lt;br&gt;Presentation of five lines of evidence and missing data for measles&lt;br&gt;Presentation of five lines of evidence and missing data for rubella&lt;br&gt;Comments of Secondary Reviewer&lt;br&gt;Comments of other RVC members&lt;br&gt;Assessment&lt;br&gt;Draft recommendations for Papua New Guinea</td>
<td>Dr Ho-fai Thomas Tsang</td>
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<td>Dr Hiroshi Yoshikura</td>
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<td>13:30–13:50</td>
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<td>08:00–08:15</td>
<td>Review of Day 2</td>
<td>Professor David Durrheim</td>
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<td>8:15–8:45</td>
<td>Report from China&lt;br&gt; Presentation of five lines of evidence and missing data for measles&lt;br&gt; Presentation of five lines of evidence and missing data for rubella&lt;br&gt; Comments of Secondary Reviewer&lt;br&gt; Comments of other RVC members&lt;br&gt; Assessment&lt;br&gt; Draft recommendations for China</td>
<td>Dr Michael George Baker&lt;br&gt; Dr Li Yang Hsu&lt;br&gt; RVC members&lt;br&gt; RVC members</td>
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<td>8:45–9:05</td>
<td>Report from China&lt;br&gt; Presentation of five lines of evidence and missing data for measles&lt;br&gt; Presentation of five lines of evidence and missing data for rubella&lt;br&gt; Comments of Secondary Reviewer&lt;br&gt; Comments of other RVC members&lt;br&gt; Assessment&lt;br&gt; Draft recommendations for China</td>
<td>RVC members&lt;br&gt; RVC members</td>
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<td>9:05–9:35</td>
<td>Report from Macao SAR (China)&lt;br&gt; Presentation of five lines of evidence and missing data for measles&lt;br&gt; Presentation of five lines of evidence and missing data for rubella&lt;br&gt; Comments of Secondary Reviewer&lt;br&gt; Comments of other RVC members&lt;br&gt; Assessment&lt;br&gt; Draft recommendations for Macao SAR (China)</td>
<td>Dr Phonepadith Xangsayarath&lt;br&gt; Professor David Durrheim&lt;br&gt; RVC members&lt;br&gt; RVC members</td>
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<td>9:35–9:55</td>
<td>Report from Hong Kong SAR (China)&lt;br&gt; Presentation of five lines of evidence and missing data for measles&lt;br&gt; Presentation of five lines of evidence and missing data for rubella&lt;br&gt; Comments of Secondary Reviewer&lt;br&gt; Comments of other RVC members&lt;br&gt; Assessment&lt;br&gt; Draft recommendations for Hong Kong SAR (China)</td>
<td>Dr Maria Rosario Capeding&lt;br&gt; Dr Mark Papania&lt;br&gt; RVC members&lt;br&gt; RVC members</td>
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<td>Dr Maria Rosario Capeding&lt;br&gt; Dr Mark Papania&lt;br&gt; RVC members&lt;br&gt; RVC members</td>
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<td>11:00–11:50</td>
<td>Report from Brunei Darussalam&lt;br&gt; Presentation of five lines of evidence and missing data for measles&lt;br&gt; Presentation of five lines of evidence and missing data for rubella&lt;br&gt; Comments of Secondary Reviewer&lt;br&gt; Comments of other RVC members&lt;br&gt; Assessment&lt;br&gt; Draft recommendations for Brunei Darussalam</td>
<td>Dr Lisi Tikoduadua&lt;br&gt; Professor David Durrheim&lt;br&gt; RVC members&lt;br&gt; RVC members</td>
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<td>Day 4, Thursday, 15 September 2022</td>
<td>08:00–08:15 Review of Day 3</td>
<td>Professor David Durrheim</td>
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<td>8:15–8:45</td>
<td>Report from New Zealand</td>
<td>Dr Thian Lian Soo</td>
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<td>Presentation of five lines of evidence and missing data for measles</td>
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<td>Presentation of five lines of evidence and missing data for rubella</td>
<td>Dr Dukhyoung Lee</td>
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<td>Draft recommendations for New Zealand</td>
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<td>9:05–9:40</td>
<td>Report from Japan</td>
<td>Professor David Durrheim</td>
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<td>Presentation of five lines of evidence and missing data for rubella</td>
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<td>Draft recommendations for Japan</td>
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<td>10:00–10:20</td>
<td>COFFEE BREAK</td>
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<td>10:20–10:50</td>
<td>Report from Australia</td>
<td>Dr Li Yang Hsu</td>
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<td>Draft recommendations for Australia</td>
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<td>11:10–11:40</td>
<td>Report from Korea</td>
<td>Dr Ho-fai Thomas Tsang</td>
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<td>Draft recommendations for Korea</td>
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<td>12:00–12:20</td>
<td>Discussion on other business</td>
<td>RVC members</td>
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<td>(1) timing and venue of RVC meeting in 2023</td>
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<td>(2) renewal of RVC membership</td>
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<td>Day 5, Friday, 16 September 2022</td>
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<td>08:00–08:15</td>
<td>Review of Day 4</td>
<td>Professor David Durrheim</td>
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| 8:15–8:40    | Implications of false positive IgM results for measles and rubella surveillance in the elimination setting  
                        | Comments from RVC members                                                   | Dr Roger Evans               |
| 8:40–9:05    | Operational Targets 2025: Progress and achievements toward 2020 targets and proposed targets for 2025  
                        | Comments from RVC members                                                   | Dr Syeda Aslam               |
| 9:05–9:30    | Draft Pacific strategy and plan of action for measles and rubella elimination  
                        | Comments from RVC members                                                   | Dr Prakash Valiakolleri      |
| 9:30–10:15   | RVC 10 Conclusions and Recommendations                                     | RVC members                  |
| 10:15–10:30  | COFFEE BREAK                                                               |                              |
| 10:30–11:30  | Preparation for the meeting with Philippines Department of Health staff, National Verification Committee (NVC), and WHO Country Office | RVC members                  |
| 11:30–11:40  | Closing Session                                                             | Dr Yoshihiro Takashima       
                        | WHO Closing Remarks                                                        | Professor David Durrheim     |
| 11:40–13:00  | LUNCH BREAK                                                                |                              |
| 13:00–15:00  | Side Meeting with National Verification Committee Philippines and Department of Health, Philippines  
<pre><code>                    | Welcome Remarks                                                             | Acting WHO Representative in the Philippines |
</code></pre>
<p>|              | NVC presentation on issues and challenges, plans for measles and rubella elimination, and technical support needs | NVC or DOH                   |
|              | RVC conclusions and recommendations for the Region and for the Philippines  | Professor David Durrheim     |
|              | Discussion                                                                  | RVC and Philippine participants |
|              | Closing                                                                     | Officer-In-Charge, Department of Health, Philippines                         |
| 15:00–15:30  | COFFEE BREAK                                                               | For RVC members, Department of Health and National Verification Committee, Philippines |</p>
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<td>15:00–15:30</td>
<td>Post-meeting discussion between WPRO and WHO Country Office in the Philippines regarding support for the Philippines</td>
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