

Summary report on the  
**Fourth meeting of the  
Regional Verification  
Commission of Measles  
and Rubella Elimination  
in the Eastern  
Mediterranean Region**

Virtual meeting  
1–3 November 2022



**World Health  
Organization**

REGIONAL OFFICE FOR THE **Eastern Mediterranean**

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## **1. Introduction**

In 2015, the WHO Regional Committee for the Eastern Mediterranean endorsed the Eastern Mediterranean Vaccine Action Plan 2016–2020, which outlined the steps for the countries of the Region to be verified for elimination of measles and rubella and set the target of interruption of indigenous measles virus transmission by the earliest possible date. While a regional target for rubella/congenital rubella syndrome (CRS) elimination has not yet been established, several countries have set a national rubella and/or CRS elimination target.

In February 2018, the WHO Regional Director for the Eastern Mediterranean established the Regional Verification Commission for Measles and Rubella Elimination (RVC-MR) to verify the achievement of measles and rubella elimination. The first meeting of the Commission was held on 9 May 2018 in Cairo, Egypt. At its second meeting in May 2019, the Commission verified and declared achievement of elimination of measles in Bahrain and Oman, as well as elimination of rubella in Bahrain, Islamic Republic of Iran and Oman. At its third meeting, the Commission verified and declared the achievement of measles elimination in Islamic Republic of Iran. However, it considered that evidence submitted by Egypt and Morocco did not yet meet the criteria for verification of elimination. The Commission was not convened in 2020 or 2021. The fourth meeting of the RVC-MR was held virtually on 1–3 November 2022 to monitor progress and confirm maintenance of elimination status in countries previously verified and to verify elimination in any new country.

Ahead of the meeting, the RVC-MR Secretariat developed and shared a template for countries achieving elimination status to document maintenance of this status. All three verified countries (Bahrain, Islamic Republic of Iran and Oman) complied and submitted their reports. Egypt submitted an updated version of its initial verification report.

The specific objectives of the fourth meeting were to:

- review the progress reports on the elimination status of measles and rubella for the verified countries (Bahrain, Islamic Republic of Iran and Oman);
- review the second version of Egypt's initial verification report on the elimination status of measles; and
- review and discuss the regional status of measles and rubella elimination.

Six of the nine members of the RVC-MR, national verification committee (NVC) representatives from Bahrain, Egypt, Islamic Republic of Iran and Oman, and WHO staff from the Regional Office, country offices and WHO headquarters attended the meeting. Dr Yvan Hutin, Director for Communicable Disease Control at the WHO Regional Office for the Eastern Mediterranean, opened the meeting, along with Dr Quamrul Hasan, Unit Head, Immunization, Vaccine Preventable Diseases and Polio Transition (IVP), WHO Regional Office, extending their welcome to the participants. Dr Frank Mahony, Senior Immunization Officer at the International Federation of Red Cross and Crescent Societies and acting chairperson of the RVC, chaired the meeting.

## **2. Summary of discussions**

The first day of the meeting included updates from the WHO Regional Office on the measles and rubella situation in the Eastern Mediterranean Region and the impact of the COVID-19 pandemic, as well as country presentations with situation updates and the salient features of their country reports. The second day covered the remaining countries' presentations, followed by a closed session for the RVC-MR to discuss the four country reports and produce recommendations. On the third day, the Commission recommendations were announced, followed by a closed session of the RVC-MR, the Secretariat and senior colleagues from WHO headquarters.

### *Regional presentation*

Updates were given by Dr Nasrin Musa and Dr Amany Ghoniem, from the WHO Regional Office's measles and rubella team, on the regional situation regarding measles and rubella epidemiology, surveillance and verification, activities undertaken and next steps. They explained the current challenges for meeting the measles and rubella elimination targets in the Region. These include security and humanitarian emergencies affecting surveillance activities in several countries, inadequate visibility of measles elimination among decision-makers and competing priorities, and the persistent weakness of immunization systems, with low demand in some countries. Additional factors included insufficient funding for supplementary immunization activities (SIAs) from domestic resources in low- and middle-income countries, and a lack of appetite among donors to support elimination targets in middle-

income countries, together with the brain-drain of qualified professionals and high staff turnover.

The presentation concluded with the need to start conducting outbreak simulation exercises and to support countries in developing or updating preparedness and response plans. The presenters reiterated the need to strengthen internal coordination with epidemiological departments for the integration of vaccine-preventable disease (VPD) surveillance and encouraged countries to carry out an external in-country surveillance review with a concrete improvement plan as a deliverable. They also called for support for resource mobilization for non-GAVI eligible countries to implement SIAs. They noted that molecular surveillance data were not a replacement for epidemiological surveillance and should only be used in combination with epidemiological information. Regional reference libraries need to work with national laboratories to improve molecular data analysis and to use expanded sequences when necessary. With the ongoing challenges mentioned above, programmatic capacity-building exercises are needed, both at the regional and country level, on different measles and rubella elimination strategies and global tools. National and regional reference libraries should also build capacity in bioinformatics.

Participants commended the efforts and agreed with the conclusions but expressed concerns about the impact of the COVID-19 pandemic on measles and rubella vaccine uptake. MCV1 national coverage masks subnational disparities and immunity gaps that exist in most of the countries. Circulation of multiple genotypes has been witnessed in the Region, with



the B3 genotype appearing as the dominant type detected but with many variants. However, the diversity of genotypes was less than in the past. A participant noted that the sustainability of vaccine supply in conflict-prone countries was becoming an issue due to dependence on donors, such as the interruption of services in the wake of regime change in Afghanistan.

### *Country presentations*

Participating countries presented their process of sustaining verification of elimination status in recent years. The NVC chairpersons and participants from countries responded to the Commissioners' inquiries and follow-up questions.

### *Bahrain*

Dr Najat Mohamed Abulfateh, NVC chairperson, gave a presentation, stating that he and his fellow NVC members were convinced that Bahrain remains free from endemic measles and rubella virus and recommending the maintaining of the strong performance of the National Immunization Programme and laboratory-based surveillance. There were a few sporadic cases with no chain of transmission continuing for more than 12 months in 2018 and 2019. The committee would continue to convene regularly and update the verification report annually for submission to the RVC-MR.

Discussion points included the frequent vaccine-associated cases, general case classification and the algorithm for measles-specific immunoglobulin M (IgM) positive cases testing negative at the reverse transcription polymerase chain reaction

(RT-PCR) test. The Commission encouraged Bahrain to provide further information on how the country diagnoses and investigates vaccine-associated cases.

**RVC-MR conclusion on the status of elimination of measles and rubella:**

Bahrain submitted a comprehensive report and addressed all inquiries raised by RVC-MR members. Therefore, Bahrain has sustained the status of measles and rubella elimination as verified for the years 2018–2020 and is congratulated on sustaining its achievement.

*Islamic Republic of Iran*

Dr Mohsen Zahraei, National Expanded Programme on Immunization (EPI) manager, gave the presentation on behalf of the NVC chairperson. The NVC concluded that strong political commitment for sustaining the elimination status of measles and rubella was evident across all stakeholders. The EPI had already established a measles and rubella strategic plan and an outbreak preparedness and response plan. The country is vigilant in preventing and responding to any risk of importation from neighbouring countries.

The discussion addressed the definition of imported cases and their classification, the respective surveillance indicators, case classification, genetic sequencing and vaccination status among different population groups in the Islamic Republic of Iran and across its borders.

**RVC-MR conclusion on the status of elimination of measles and rubella:**

The Islamic Republic of Iran submitted a comprehensive report and addressed all inquiries raised by the Commission. The isolation of the 2b genotype of rubella virus in around 30 cases is a point of excellence for the National Immunization Programme. The RVC-MR recognize the ongoing high risk of importation to the country. Therefore, the National Immunization Programme should continue strengthening population immunity, with a special focus on high-risk provinces, to control transmission after importation. The RVC-MR declares that Islamic Republic of Iran has sustained the status of measles and rubella elimination as verified for the years 2018–2020 and congratulates the country on this achievement given current and ongoing challenges.

*Oman*

Mr Badr El Rawahi, Director of Infectious Diseases Control, Ministry of Health, gave the presentation on behalf of NVC chairperson Dr Hossam El Farsi. He stated that the COVID-19 pandemic had not affected immunization coverage in Oman due to the policy guidelines adopted by the Ministry of Health. These included continuation of EPI services, dedicated stations for immunization unrelated to COVID-19 or any related vaccine rollout activities, continuation of defaulter tracing and sustained vaccine supply.

The discussion focused on laboratory specimen transfer, Oman's initiative for southern border vaccination, unknown vaccination status and the risk of categorization.

**RVC-MR conclusion on the status of elimination of measles and rubella:**

Oman presented a comprehensive report; all inquiries were addressed after receiving the feedback. The Commission declares that Oman has sustained the status of measles and rubella elimination, as verified for the years 2018–2020, and congratulates the country on sustaining this achievement.

*Egypt*

Dr Ibrahim Fahmy Moussa Abdelnasser, NVC chairperson, gave the presentation, which concluded that the NVC was able to classify Egypt as eliminating both measles and rubella in the three years from 2019 to 2021 after reviewing all the evidence, and given the high political commitment, along with a multiyear strategic national plan for the elimination of measles and rubella, including allocated funding sources. The discussion addressed the vaccination registration system, unregistered children and nomadic peoples, genotype sequencing in 2020 and 2021, and further strengthening of reporting mechanisms for the private sector. Egypt further clarified population immunity and the SIAs taking place, especially on the country's borders. The Commissioners inquired about sources of infection and the case classification for imported and related cases, especially when imported cases were not reported or investigated.

**RVC-MR conclusion on the status of elimination of measles and rubella:**

Egypt submitted a comprehensive report and addressed all inquiries raised by the RVC-MR members. The Commission commends Egypt for its efforts and expresses satisfaction with the case investigation conducted and the identification of country of origin for each imported case. The RVC-MR declares Egypt as verified for elimination for measles and rubella for 2018–2021, and that Egypt has successfully interrupted endemic transmission of measles and rubella virus. It congratulates Egypt on this achievement.

*Vote of thanks*

The RVC-MR thanked all participants and country representatives for their dedication in completing comprehensive country reports, for responding to all inquiries with details, and for being highly compliant with the verification process.

*Closed session of the RVC-MR and Secretariat*

Meeting in a closed session, the Commission and its Secretariat discussed the reports from the four countries and drafted its decisions and recommendations for each country. The RVC-MR was impressed by the countries' efforts in either sustaining the verification of elimination amid the COVID-19 pandemic or in achieving the elimination goal, and by the strength of their surveillance systems and EPI programmes. The Commission also acknowledged this achievement in the two most populous countries of the Region (Egypt and Islamic Republic of Iran).

In other WHO regions, the verification process has often been initiated in countries with smaller populations.

#### *Decisions by the RVC-MR*

Based on the review of the submitted country progress reports and initial reports and discussion with the participants during the meeting, the Commission declared the achievement of elimination of measles and rubella in all four countries. It also announced its recommendations for each country (see below), and participants discussed the lessons learnt and next steps.

#### *Exchange of experience with the European Region*

During another closed session, Dr Patrick O'Connor, Medical Officer, Immunization, Vaccines and Biologicals, WHO headquarters, gave a detailed presentation about the verification process in the WHO European Region and lessons learnt. From this experience, it was advised that resources be focused on countries that are close to elimination for verification of elimination, and the mechanisms needed to support and prepare them for submitting their initial report to the Commission by next year.

### **3. Conclusions**

The RVC-MR Secretariat presented on current challenges and next steps, followed by the Commission's recommendations. Suggestions for innovative support mechanisms for countries to start the process of documentation for verification regardless of their elimination status were discussed.

The key points of the discussion were as follows:

- Countries should understand that the verification process is a powerful tool to support them in each line and area of evidence by identifying the gaps until reaching the elimination target. Country resources are optimized based on independent international experts' oversight of the process. A report constitutes a reference document for the country's epidemiology and laboratory capacity (genetic sequencing for measles and rubella viruses) and records progress on control measures.
- A regional target for rubella elimination should be established, as this would provide encouragement to Member States, given that 18 out of 22 countries/territories in the Region have not yet introduced the rubella vaccine and 19 have not yet set control strategies.
- Countries with limited molecular data face additional burdens in case-based surveillance and outbreaks.
- Cases of double infection of measles and rubella have increased in the Region and are being reported in different countries.

#### **4. RVC-MR recommendations**

*To Bahrain*

1. Sustain the strong performance of the National Immunization Programme and the VPD surveillance system.
2. Consider publication of vaccine-related cases and consider joining forces with other countries in this effort, with the support of the RVC-MR Secretariat.

*To Egypt*

3. Maintain the strong performance of the National Immunization Programme and the VPD surveillance system.
4. Enhance molecular surveillance of measles and rubella viral sequences, including accreditation of the measles laboratory for PCR and eventually sequencing.
5. Enhance targeted vaccination at all points of entry and border crossings of all children under 10 years of age coming from countries endemic for measles and rubella.
6. Implement mandatory vaccination of children arriving in the country across international borders.

*To the Islamic Republic of Iran*

7. Sustain the strong performance of the National Immunization Programme.
8. Increase efforts to strengthen capacity for case investigation of unknown sources and diagnosis.
9. Strengthen cross-border coordination and control measures with neighbouring endemic countries regarding measles and rubella elimination activities (routine vaccination, surveillance, SIAs).
10. Consider a special plan (outreach efforts, SIAs, periodic intensification of routine immunization) for unregistered migrants, Afghani children and cross-border areas.
11. Implement mandatory vaccination or presumptive evidence of immunity (documented) against measles and rubella for health-care workers (except for medical exemptions).
12. Strengthen infection prevention control measures in hospitals and health-care settings to prevent measles outbreaks.



*To Oman*

13. Sustain the strong performance of the National Immunization Programme and the VPD surveillance system

*To all countries*

**Elimination progress in other Eastern Mediterranean Region countries**

14. Countries that are epidemiologically close to elimination are urged to start working on their initial report for verification of elimination and submit it for the next meeting of the Commission.
15. All countries (regardless of level of readiness for elimination) are encouraged to start engaging in the verification process and to submit annual reports to the Commission.
16. Countries are advised to look at opportunities to support the verification process at the national level, and to strengthen their national verification committee and their role in the National Immunization Programme. This could be done through deploying consultants or RVC-MR members on a joint mission to train personnel on the job, help the NVC with annual reporting and build capacities for EPI activities in general, and verification for measles and rubella elimination in particular.

**Rubella target for the Region**

17. Establish a regional target for rubella elimination to be linked to Immunization Agenda 2030.

18. EPI programme management (surveillance and laboratory capacity) should be strengthened in high-priority countries for rubella elimination achievement targets.

**Countries with limited molecular data**

19. Collect specimens for molecular analysis and sequencing to generate baseline data for all chains of measles and rubella transmission in sporadic and outbreak settings.
20. Submit molecular data to MeaNS2 and RubeNS2 databases, and work towards accreditation for molecular testing and eventually sequencing. The Regional Office can provide support to countries with limited capacities.


**Double reactivity issue**

21. Countries with cases of double infection of measles and rubella are advised to conduct further IgM analysis and case investigation to distinguish the true double infection from a reagent issue or other causes of rash and fever illness. The Commission suggests a second serum test for immunoglobulin G (IgG) and IgM. If IgG pertains (i.e. there is double reactivity) then it is a double infection. WHO headquarters has created a working group that will issue a testing algorithm to guide laboratories struggling with this issue.

*To the RVC-MR Secretariat*

22. The RVC-MR commends the Region on its progress toward regional measles and rubella elimination.

23. The RVC-MR recommends that the Commission Secretariat focus its technical support on countries close to elimination. RVC-MR members and the IVP unit at the Regional Office should document elimination status while building the capacity of national verification committees and secretariats.
24. The RVC-MR recommends documenting the progress of elimination in the Region over the last five years, including challenges, next steps and epidemiological evidence of elimination. Documentation using the Morbidity and Mortality Weekly Report from CDC is recommended. Suggested titles include “Measles before polio” and “Progress in measles and rubella elimination in the Eastern Mediterranean Region”.



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