|  |  |
| --- | --- |
| 2023 | Annual Status Update onMeasles and Rubella Elimination |
| (write name of country) |

Dear National Verification Committee - NVC and national technical counterparts, dear colleagues,

We kindly ask you to follow the definitions (please see Annex 1.1) and instructions provided in this form, and to enter numbers or text as required in each segment (table, text box, other).

If you are using your own definitions and indicators, please provide an explanation and clarification why and how these could be considered equivalent to or as an adequate replacement for the WHO definitions and indicators.

If the NVC would like to provide additional data and information to the RVC, please submit them as separate document(s).

We would still kindly request from you to submit your ASU and all relevant additional documents as attachments to an e-mail to RVC Secretariat, using address **eurvc@who.int**. You may also copy any of Vaccine-preventable Diseases and Immunization technical officers cooperating with you in preparation of the ASU and verification process. Please follow up with us to confirm that we received your ASU, and on any other issue that may need our support or attention. We are planning to re-establish online submission or create online data entry platform in near future.

This update for 2023 is to be submitted to the WHO Regional Office for Europe by **30 June 2024.**

**The National Verification Committee (NVC) conclusion on measles and rubella elimination status in 2023**

Please provide NVC statement on the status of measles and rubella viruses’ circulation in your country, based on the information collected and provided by the national surveillance and immunization systems. Tick one of the boxes below as deemed appropriate and provide rationale (main facts that led to the NVC’s conclusion) in the text box below. If you have difficulties in deciding which one of the three status definitions for measles and rubella elimination applies, please leave the boxes unchecked and explain in the text box.

**Measles**

**[ ]**  Endemic

**[ ]**  Elimination/Interrupted endemic transmission

**[ ]** Re-established endemic transmission

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| The NVC conclusion is based on the following:*(please see the guiding text below, then delete and replace it with your text addressing the mentioned areas)*Epidemiology of measles in 2023 – number and description of cases and outbreaks (person-time-place, seasonality, immunization status, known origin, rate of confirmation and discarding of cases). Even it is not directly related to verification, you may include information about measles mortality and cases of subacute sclerosing panencephalitis (SSPE).Measles surveillance quality in 2023 – systems quality and capacity to detect, report, investigate and confirm/discard suspected cases all over the country for the entire year, performance against surveillance indicators, other reliable indicators used in country to confirm adequate surveillance quality and performance, additional activities (active case finding, retrospective case/data analysis, addressing “silent” territories and populations), integration with laboratory segment of surveillance for confirming cases and genotypes/lineages (sporadic cases and outbreaks).Molecular epidemiology of measles in 2023 – comprehensive analysis of epidemiological and laboratory data on detected genotypes/lineages of measles viruses and extended to analysis of available data from the previous and following year looking for/to exclude continuous circulation of >12 months. Activities to increase population immunity in 2023 – routine immunization programme coverage at national and subnational level, and especially where suboptimal programme performance exists (e.g. age cohorts, territories and/or specific population with known low coverage), supplemental immunization activities and coverage, additional studies and surveys about immunity to measles and rubella (MR).Sustainability of and commitment to activities on MR elimination in 2023 – political commitment of decision-making structures and main players, involvement of partners, promotion of and advocacy for elimination, sustainability of immunization programme, political and technical regulations and guidelines developed or renewed, security of funds and vaccine supply, organized activities aimed at particular groups (e.g. health care workers to increase knowledge or general population to increase demand).Characteristics and quality of data for 2023 – Are the data complete, available, valid, representative, consistent? Are any additional data from other sources used to validate existing data and ensure adequate understanding of measles epidemiology and assessment of elimination status? |

**Rubella**

**[ ]** Endemic

**[ ]**  Elimination/Interrupted endemic transmission

**[ ]**  Re-established endemic transmission

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| The NVC conclusion is based on the following:*(please see the guiding text below, then delete and replace it with your text addressing the mentioned areas)*Epidemiology of rubella and CRS in 2023 – number and description of cases and outbreaks (person-time-place, seasonality, immunization status, known origin, rate of confirmation and discarding of cases).Rubella and CRS surveillance quality in 2023 – systems quality and capacity to detect, report, investigate and confirm/discard suspected cases all over the country for the entire year, performance against surveillance indicators, other reliable indicators used in country to confirm adequate surveillance quality and performance, additional activities (active case finding, retrospective case/data analysis, addressing “silent” territories and populations), integration with laboratory segment of surveillance for confirming cases and genotypes/lineages (sporadic cases and outbreaks).Molecular epidemiology of rubella in 2023 – comprehensive analysis of epidemiological and laboratory data on detected genotypes/lineages of measles viruses and extended to analysis of available data from previous and following years looking for/to exclude continuous circulation of >12 months.Activities to increase population immunity in 2023 – routine immunization programme coverage at national and subnational level, and especially where suboptimal programme performance exists (e.g. age cohorts, territories and/or specific population with known low coverage), supplemental immunization activities and coverage, additional studies and surveys about immunity to MR.Sustainability of and commitment to activities on MR elimination in 2023 – political commitment of decision-making structures and main players, involvement of partners, promotion of and advocacy for elimination, sustainability of immunization programme, political and technical regulations and guidelines developed or renewed, security of funds and vaccine supply, organized activities aimed at particular groups (e.g. health care workers to increase knowledge or general population to increase demand).Characteristics and quality of data for 2023 – Are data complete, available, valid, representative, consistent? Are any additional data from other sources used to validate existing data and ensure adequate understanding of rubella (with CRS) epidemiology and assessment of elimination status? |

**These conclusions are approved by the National Verification Committee (NVC)**

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|  | **Name** | **NVC status** | **Professional position** | **Organization** | **Contact details (email, tel.)** | **Signature** |
| 1 |  | *Chairperson* |  |  |  |  |
| 2 |  | *Secretariat person\** |  |  |  |  |
| 3 |  | *Member* |  |  |  |  |
| 4 |  | *Member* |  |  |  |  |
| 5 |  | *Member* |  |  |  |  |
| 6 |  | *Member* |  |  |  |  |

*\*Person with administrative duties, who may also be responsible for documenting, maintaining records and overseeing logistics. This person may be from the national immunization or surveillance programme.*

*Add rows if needed*

In the text box below please provide the NVC and national technical counterparts’ response to any RVC request for additional information or clarification from previous years.

|  |
| --- |
| Text box |

**Sections of the ASU form**

*Please complete sections 1-3, and us/add forms from Section 4 as needed, to report outbreaks and supplemental immunization activities (SIA).*

*Please use provided Excel file to help you analyse the data and complete the ASU, and then send the Excel file to the RVC/Secretariat along with the ASU form.*

*Additional information to help you analyse the data and complete the forms is provided in Annex 1.*

***In your e-mail message with ASU and Excel tool for 2023 please include the latest versions of national plan/document on measles and rubella elimination and the latest document (regulation/plan/guidelines) on response to measles and rubella outbreaks.*** *We would appreciate any format of information - document in Word or PDF, web address link to online version, or any other, and information in any language (English is preferable but we are grateful for documents in official national languages as well).*

**Section 1: Country measles and rubella profile for 2023**

1.1 Epidemiologic analysis of measles, rubella and CRS

1.2 Laboratory performance - national framework for MR laboratory testing

1.3 Performance of measles and rubella surveillance against indicators

1.4 Population immunity to measles and rubella

**Section 2: Update of general programme activities by components**

**Section 3: Activities of the National Verification Committee (NVC) and its Secretariat**

3.1 Activities of the NVC in the year under review

3.2 The NVC Secretariat (list of national staff involved in preparation of ASU) – **UPDATE CONTACT DATA**

**Section 4: Additional data on measles, rubella and CRS in 2023**

4.1 Maps and epi curves with distribution of suspected and confirmed measles and rubella cases and measles and rubella outbreaks in 2023

4.2 Technical report on SIA or ORI, if any conducted

**Annex 1: WHO guiding documents and examples**

1.1 Definitions

1.2 Description of “Indicators and targets” for measuring performance of measles and rubella surveillance

1.3 Sustain measles and rubella elimination after verification - Discussion points for NVC and its Secretariat on risk for re-establishing endemic transmission of diseases

**Abbreviations**

|  |  |
| --- | --- |
| ASU | Annual Status Update (form) |
| CRS | congenital rubella syndrome |
| EQA  | external quality assurance  |
| MCV | measles-containing vaccine |
| MeaNS | WHO Measles Nucleotide Surveillance online database (www.who-measles.org) |
| NVC | National Verification Committee |
| ORI | Outbreak response immunization |
| RCV | rubella-containing vaccine |
| RubeNS | WHO Rubella Nucleotide Surveillance online database (www.who-rubella.org) |
| RVC | Regional Verification Commission |
| SIA | Supplemental immunization activities |

**Section 1: Country measles and rubella profile for 2023**

* 1. ***Epidemiologic analysis of measles, rubella and CRS***

Progress towards measles and rubella elimination, 2021-2023 - Incidence of measles and rubella and total number of CRS cases in last three years

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Incidence or number of cases** | **2021** | **2022** | **2023** | **Remarks** |
| **Measles incidence*****per 1 million population***  |           Numerator:            |           Numerator:            |           Numerator:            | Text |
| **Rubella incidence*****per 1 million population*** |           Numerator:            |           Numerator:            |           Numerator:            | Text |
| **Number of CRS cases** |       |       |       | Text |

**Country population**: **number used as denominator to calculate incidence for 2023 in table above**:

(please enter number)

*The numerator is the total number of measles/rubella cases including laboratory-confirmed, epidemiologically linked and clinically compatible cases* ***but excluding imported cases****. For CRS cases please provide total number of cases classified as CRS,* ***excluding imported cases****.*

* + 1. Epidemiology of measles, rubella and CRS in 2023
1. Measles and rubella surveillance is organized as:

**[ ]**  Disease-specific surveillance (measles surveillance, rubella surveillance)

**[ ]** Rash and fever surveillance (syndrome-based)

**[ ]** Both types of the above surveillance systems are in place

**[ ]** Other (please describe in text box below)

|  |
| --- |
| Text box |

1. Are specimens from ALL suspected cases routinely tested for both diseases by a laboratory?

**[ ]** No

**[ ]**  Yes, for both diseases, in parallel or in sequence (if testing for one disease is negative)

**[ ]** Yes, but partially/for some of cases (if there are national guidelines or proposed testing algorithm – please explain):

|  |
| --- |
| Text box |

1. Number of measles and rubella cases in 2023

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Total number of suspected cases**(from diseases-specific and syndrome-based surveillance) | **Total number of cases classified as measles or rubella**(laboratory-confirmed, epidemiologically linked and clinically compatible cases) | **Number of discarded** **cases** (please indicate if these are discarded for both diseases) |
| **Measles** |  |  |  |
| **Rubella** |  |  |  |

*Value in cell “Total number of suspected cases” should be equal to the sum of values presented in “Total number of cases classified as measles or rubella” and “Total number of discarded cases”. Include laboratory-confirmed, epidemiologically linked and clinically compatible cases,* ***regardless of origin (include imported).***

*If suspected cases are systematically investigated/tested for both diseases in your surveillance system (syndromic-based surveillance; simultaneous or sequential testing in laboratories), cases suspected for measles may be included in the total number of cases suspected for rubella, and conversely, cases suspected for rubella may be included as cases suspected for measles.*

1. Number of measles cases, by case classification and origin of infection

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Measles** | **Laboratory-confirmed (A)** | **Epidemiologically linked (B)** | **Clinically compatible (C)** | **Total****(A+B+C)** |
| **Imported**  |  |  |  |  |
| **Import-related (I)** |  |  |  |  |
| **Endemic (II)** |  |  |  |  |
| **Unknown origin (III)** |  |  |  |  |
| **Total (excluding imported cases) (I + II + III)** |  |  |  |  |

*Note: Please use the Excel spreadsheet provided with this ASU, as it can help you in completing this table.*

1. Number of rubella cases, by case classification and origin of infection

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Rubella** | **Laboratory-confirmed (A)** | **Epidemiologically linked (B)** | **Clinically compatible (C)** | **Total****(A+B+C)** |
| **Imported**  |  |  |  |  |
| **Imported-related (I)** |  |  |  |  |
| **Endemic (II)** |  |  |  |  |
| **Unknown origin (III)** |  |  |  |  |
| **Total (excluding imported cases) (I + II + III)** |  |  |  |  |

*Note: Please use the Excel spreadsheet provided with this ASU, as it can help you in completing this table.*

1. Number of CRS cases, by case classification and origin of infection

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CRS** | **Laboratory-confirmed (A)** | **Epidemiologically linked (B)** | **Clinically compatible (C)** | **Total****(A+B+C)** |
| **Imported**  |  |  |  |  |
| **Imported-related (I)** |  |  |  |  |
| **Endemic (II)** |  |  |  |  |
| **Unknown origin (III)** |  |  |  |  |
| **Total (excluding imported cases) (I + II + III)** |  |  |  |  |

*Note: Please use the Excel spreadsheet provided with this ASU, as it can help you in completing this table.*

* + 1. Age and vaccination status of laboratory-confirmed, epidemiologically linked or clinically compatible cases of measles and rubella
1. Age and vaccination status of **measles** cases

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Measles** | **< 1 year** | **1-4** **years** | **5-9** **years** | **10-14** **years** | **15-19** **years** | **20-29** **years** | **≥30** **years** | **Unknown age** | **Total** |
| **0 doses** |  |  |  |  |  |  |  |  |  |
| **1 dose** |  |  |  |  |  |  |  |  |  |
| **2 or more doses** |  |  |  |  |  |  |  |  |  |
| **Unknown status** |  |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |  |

1. Age and vaccination status of **rubella** cases

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Rubella** | **< 1 year** | **1-4** **years** | **5-9** **years** | **10-14** **years** | **15-19** **years** | **20-29** **years** | **≥30****years** | **Unknown age** | **Total** |
| **0 doses** |  |  |  |  |  |  |  |  |  |
| **1 dose** |  |  |  |  |  |  |  |  |  |
| **2 or more doses** |  |  |  |  |  |  |  |  |  |
| **Unknown status** |  |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |  |

* + 1. List of administrative territories with measles and rubella cases
1. Total number of confirmed **measles** cases by month (classified as laboratory-confirmed, epidemiologically linked or clinically compatible), **regardless of origin (including imported cases)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Administrative territory and its population size** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Total** |
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| **Total** |  |  |  |  |  |  |  |  |  |  |  |  |  |

*Add as many rows as you may need for territories – one and the same type/level of administrative organization (district, region, municipality) that provides routine diseases surveillance data in your system.*

1. Total number of confirmed **rubella** cases (classified as laboratory-confirmed, epidemiologically linked or clinically compatible), regardless of origin (including **imported cases)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Administrative territory and its population size** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Total** |
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| **Total** |  |  |  |  |  |  |  |  |  |  |  |  |  |

*Add as many rows as you may need for territories– one and the same type/level of administrative organization (district, region, municipality) that provides routine diseases surveillance data in your system.*

* + 1. Outbreaks in 2023 and molecular epidemiology

**NOTE**: If genotyping data are available, please note that each outbreak or chain of transmission should have **only one genotype-variant**. If more than one genotype-variant is reported for an outbreak, this refers to more than one outbreak/chain of transmission and should be described as two separate outbreaks/chains of transmission in the table. Countries with comprehensive data are encouraged to use the additional Excel sheets provided as tool for better visualization.

Please provide definition for an outbreak of measles and rubella used in your country in the text box below:

|  |
| --- |
| Text box |

* + - 1. *Measles*
1. *Measles outbreaks and sporadic cases in 2023 by availability of the genotype information*

|  |  |  |  |
| --- | --- | --- | --- |
| **MEASLES** | **Genotyped** | **Not genotyped** | **Total**  |
| Number of **outbreaks/chains of transmission** |  |  |  |
| Number of **cases** that are part of outbreaks/chains of transmission (I) |  |  |  |
| Number of **sporadic cases** that are not part of outbreaks/chains of transmission (II) |  |  |  |
| Total number of **cases (I +II)** |  |  |  |

*The value in the cell highlighted in orange should be the total number of* ***cases classified as measles*** *and the same as the value for the Total number of cases classified as measles in table 1.1.1.c*

1. *Measles outbreaks in 2023 (list ALL outbreaks; if your country only reported sporadic measles cases and NO outbreaks, please go directly to table d)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Outbreak ID** | **Name of the affected territory****(national, or list of affected sub-national territories)** | **Duration (Date of onset of the first case, date of onset of the last case; or “ongoing”) (dd/mm/yyyy)** | **Total number of cases in outbreak in 2023** | **First case by origin (Imported or not-imported)** | **Outbreak genotyped****(Yes/No)**  | **Outbreak report form attached to the ASU (Yes/No)** |
|  |  |  |  |  |  |  |
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*Add as many rows as you need*

1. *Genotyped measles outbreaks/chains of transmission*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Genotype-variant (MeaNS distinct sequence ID) as defined in Annex 1.** | **Outbreaks****(list all IDs)** | **Name of the affected territory****(national, or list of affected subnational territories)** | **Total number of cases in 2023** | **Duration**  | **Documented importation for first case (yes/no)** | **Are there sporadic cases with the same variant that are not part of the identified outbreak/chain of transmission?** |
| **[ ]  Yes [ ]  No** |
| **Date of onset of the first case**  | **Date of onset of the last case or ‘ongoing’** | **If yes, how many cases?** (enter data at the bottom of the table) |
| **Date of first sporadic case** | **Date of last sporadic case** |
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| SUM - Total number of genotyped **outbreaks/****chains of transmission**  |  | SUM - Total number of **cases in outbreaks/****chains of transmission** |  |  |  | SUM - Total number of **sporadic cases** with genotype |  |

*Add as many rows as you need, or remove not used rows (e.g. only one genotype-variant detected)*

1. ***Measles sporadic cases*** *with different genotype-variant(s) than those reported in table c)*

*Please fill in this table* ***ONLY IF***

*1) there were NO genotyped outbreaks at all reported in 2023 or*

*2) if NO outbreaks had the same genotype-variant(s).*

*Otherwise, please include the sporadic cases above in the last column of table c).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Genotype-variant (MeaNS distinct sequence ID) as defined in Annex 1** | **Case ID****/Epid. No.** | **Name of subnational territory from where case was reported** | **Date of onset** | **Documented importation (yes/no)** |
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| SUM - Total number of **cases** |  |  |  |  |

*Add as many rows as you need, or remove not used rows (e.g. only one genotype-variant detected*

*1.1.4.2 Rubella*

1. *Rubella outbreaks and sporadic cases in 2023 by availability of the genotype information*

|  |  |  |  |
| --- | --- | --- | --- |
| **RUBELLA** | **Genotyped** | **Not genotyped** | **Total**  |
| Number of **outbreaks/chains of transmission** |  |  |  |
| Number of **cases** that are part of outbreaks/chains of transmission (I) |  |  |  |
| Number of **sporadic cases** that are not part of outbreaks/chains of transmission (II) |  |  |  |
| Total number of **cases (I + II)** |  |  |  |

*The value of the cell highlighted in orange should be the total number of* ***cases classified as rubella*** *and the same as the value for the Total number of cases classified as rubella in table 1.1.1.c*

1. *Rubella outbreaks in 2023 (list ALL outbreaks; if your country only reported sporadic rubella cases and NO outbreaks, please go directly to table d)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Outbreak ID** | **Name of the affected territory****(national, or list of affected sub-national territories)** | **Duration (Date of onset of the first case, date of onset of the last case; or “ongoing”) (dd/mm/yyyy)** | **Total number of cases in outbreak in 2023** | **First case by origin (Imported or not-imported)** | **Outbreak genotyped****(Yes/No)**  | **Outbreak report form attached to the ASU (Yes/No)** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

*Add as many rows as you need*

1. *Genotyped rubella outbreaks*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Genotype-variant (RubeNS sequence ID)** | **Outbreaks****(list all IDs)** | **Name of the affected territory****(national, or list of affected subnational territories)** | **Total number of cases in 2023** | **Duration**  | **Documented importation for first case (yes/no)** | **Are there sporadic cases with the same variant that are not part of the identified outbreak/chain of transmission?** |
| **[ ]  Yes [ ]  No** |
| **Date of onset of the first case**  | **Date of onset of the last case or ‘ongoing’** | **If yes, how many cases?** (enter data at the bottom of the table) |
| **Date of first sporadic case** | **Date of last sporadic case** |
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| SUM - Total number of genotyped **outbreaks/****chains of transmission**  |  | SUM - Total number of **cases in outbreaks/****chains of transmission** |  |  |  | SUM - Total number of **sporadic cases** with genotype |  |

*Add as many rows as you need, or remove not used rows (e.g. only one genotype-variant detected)*

1. ***Rubella sporadic cases*** *with different genotype-RubeNS sample ID than those reported in table c).*

*Please fill in this table* ***ONLY IF***

*1) there were NO genotyped outbreaks at all reported in 2023 or*

*2) if NO outbreaks had the same genotype-variant(s).*

*Otherwise, please include the sporadic cases above in the last column of table c).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Genotype-variant (RubeNS sequence ID)** | **Case ID****/Epid. No.** | **Name of subnational territory from where case was reported** | **Date of onset****(dd/mm/yyyy)** | **Documented importation (yes/no)** |
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| SUM - Total number of **cases** |  |  |  |  |

*Add as many rows as you need, or remove not used rows (e.g. only one genotype-variant detected)*

1. ***Non-genotyped rubella sporadi****c* ***cases***

|  |  |  |  |
| --- | --- | --- | --- |
| **Case ID /Epid. No.** | **Name of subnational territory from where case was reported** | **Date of onset****(dd/mm/yyyy)** | **Documented importation (yes/no)** |
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|  |  |  |  |
| SUM - Total number of **cases** |  |  |  |

* 1. ***Laboratory performance - national framework for measles and rubella laboratory testing in 2023***
1. Standard laboratory procedures for testing and case confirmation

Please select **ONE** of the following:

[ ]  IgM serology is the first line of laboratory investigation; case confirmation may rely on additional tests if needed.

[ ]  Molecular detection is the first line of laboratory investigation; serology may be additionally performed or not.

[ ]  Other case confirmation procedure, please specify:

1. Testing and confirmation of cases by laboratory proficiency

Select all that apply regarding testing of measles, rubella and CRS suspected cases (more than one may apply)

**[ ]**  Testing conducted by WHO-accredited measles–rubella reference laboratory/laboratories.

**[ ]**  Testing conducted by laboratories having an established quality assurance programme with oversight by a WHO-accredited laboratory.

[ ]  Testing conducted by laboratories having an established quality assurance programme and accredited by a national body/institution. Please specify

* EQA programme
* Name of national accrediting body
* Accreditation standard(s)

**[ ]** Other (please comment/describe)

1. Number of suspected cases tested in 2023 by type of the laboratory

Systematic screening studies as well as any other results of general screenings of population should not be reported in this form (e.g. survey for rubella in pregnancy).

|  |  |  |  |
| --- | --- | --- | --- |
| **Laboratory performing the test** | **Number of suspected cases tested for measles** | **Number of suspected cases tested for rubella**  | **Number of suspected cases tested for CRS** |
| **WHO-accredited lab(s)** |  |  |  |
| **Proficient labs overseen by WHO- accredited lab**  |  |  |  |
| **Nationally accredited labs** |  |  |  |
| **Other labs** |  |  |  |
| **Total** |  |  |  |

* 1. ***Performance of measles and rubella surveillance against indicators***

Please use the Excel spreadsheet provided with this ASU 2023 to calculate rates or percentages required as surveillance indicators and insert the calculated values in the tables of this section. Please add any comments or clarifications in the “Remarks” column.

* + 1. ***Measles surveillance performance indicators***
1. **Standard indicators**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Indicator** | **Value for indicator** | **Numerator** | **Denominator** | **Remarks** |
| **Timeliness of reporting (to national level in %) (T)***Target: ≥80%* ***T****= (A\*100)/B* |   % |      *(A) = number of reports submitted by deadline*  |           *(B) = number of expected reports submitted* |  |
| **Completeness of reporting (to national level in %) (C)***Target: ≥80%* ***C****=(E\*100)/B* |   % |           *(E) = number of submitted reports*  |      *(B) = number of expected reports*  |  |
| **Rate of laboratory investigations in % (L**)*Target: ≥80%* ***L****=(F\*100)/G* |   % |      *(F) = number of suspected measles cases with adequate specimens collected and tested in a proficient laboratory* |      *(G) = number of suspected measles cases* |  |
| **Rate of discarded cases (D)***Target: ≥2/100,000* ***D****=(H\*100,000)/J* |   /100,000 |      *(H) = number of suspected measles cases investigated and discarded as non-measles* |           *(J) = population* |  |
| **Representativeness of reporting discarded cases in % (R)***Target: ≥80%* ***R****=(K\*100)/M*  |   % |      *(K) = number of subnational administrative territories reporting the rate at least 2 per 100,000*  |      *(M) = number of subnational administrative territories* |  |
| **Viral detection in %** **(V)***Target: ≥80%* ***V****=(P\*100)/Q* |   % |      *(P) = number of chains of transmission of measles for which adequate samples have been submitted for viral detection/genotyping* |      *(Q) = number of chains of transmission identified* |  |
| **Viral detection for sporadic cases in % (V1)***Target: ≥80%****V1****=(p\*100)/q* |   % |      *(p) = number of sporadic cases from which samples were obtained and sequenced in an accredited laboratory* |           *(q) = number of sporadic cases* | *\* if possible, sporadic cases should be genotyped in countries that are approaching elimination or have already achieved elimination.* |
| **Origin of infection identified in % (O)***Target: ≥80%* ***O****=(W\*100)/X* |   % |      *(W) = number of measles cases for which the origin of infection (imported, import-related, endemic) has been identified* |      *(X) = total number of measles cases* |  |
| **Timeliness of investigation in % (I)***Target: ≥80%* ***I****=(Y\*100)/Z* |   % |      *(Y) = number of measles cases with an adequate investigation* |      *(Z) = number of suspected measles cases* |  |

1. **Alternative indicators** – If the above standard indicators could be calculated using the available data, there is no need to provide alternative indicators. If data is not available to calculate the standard indicators, NVC should use these alternative indicators to assess the performance of measles surveillance.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Indicator** | **Value for indicator** | **Numerator** | **Denominator** | **Remarks** |
| **Timeliness of notification (in %; alternative to *Timeliness and Completeness* indicator) (Tn)***Target: ≥80%* ***Tn****=(CC\*100)/G* |   % |           *(CC) = number of reports submitted within 48 hours* |           *(G) = number of suspected measles cases* |  |
| **Rate of cases tested negative for measles IgM (alternative to *Rate of Discarded Cases* indicator) (N)** *Target: ≥2/100,000* ***N****=(DD\*100,000)/J* |   /100,000 |           *(DD) = number of negative IgM test results*  |           *(J) = population* |  |

* + 1. ***Rubella surveillance performance indicators***
1. **Standard indicators**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Indicator** | **Value for indicator** | **Numerator** | **Denominator** | **Remarks** |
| **Timeliness of reporting (to national level in %) (T)***Target: ≥80%* ***T****=(A\*100)/B* |   % |      *(A) = number of reports submitted by deadline*  |           *(B) = number of expected reports submitted* |  |
| **Completeness of reporting (to national level in %) (C)***Target: ≥80%* ***C****=(E\*100)/B*  |   % |      *(E) = number of submitted reports*  |           *(B) = number of expected reports*  |  |
| **Rate of laboratory investigations in % (L**)*Target: ≥80%* ***L****=(F\*100)/G* |   % |      *(F) = number of suspected rubella cases with adequate specimens collected and tested in a proficient laboratory* |           *(G) = number of suspected rubella cases* |  |
| **Rate of discarded cases (D)***Target: ≥2/100,000****D****=(H\*100,000)/J* |   /100,000 |      *(H) = number of suspected rubella cases investigated and discarded as non-rubella* |           *(J) = population* |  |
| **Representativeness of reporting discarded cases in % (R)***Target: ≥80%* ***R****=(K\*100)/M* |   % |      *(K) = number of subnational administrative territories reporting the rate at least 2 per 100,000*  |           *(M) = number of subnational administrative territories* |  |
| **Viral detection in % (V)***Target: ≥80%****V****=(P\*100)/Q* |   % |      *(P) = number of chains of transmission of rubella for which adequate samples have been submitted for viral detection/genotyping* |           *(Q) = number of chains of transmission identified* |  |
| **Viral detection for sporadic cases in % (V1)***Target: ≥80%****V****=(p\*100)/q* |   % |      *(p) = number of sporadic cases from which samples were obtained and sequenced in an accredited laboratory* |           *(q) = number of sporadic cases* | *\* if possible, sporadic cases should be genotyped in countries that are approaching elimination or have already achieved elimination.* |
| **Origin of infection identified in % (O)***Target: ≥80%* ***O****=(W\*100)/X* |   % |      *(W) = number of rubella cases for which the origin of infection (imported, import-related, endemic) has been identified* |           *(X) = total number of rubella cases* |  |
| **Timeliness of investigation in % (I)***Target: ≥80%* ***I****=(Y\*100)/Z* |   % |      *(Y) = number of rubella cases with an adequate investigation* |           *(Z) = number of suspected rubella cases* |  |

1. **Alternative indicators** – If the above standard indicators could be calculated using the available data, there is no need to provide alternative indicators. If data is not available to calculate the standard indicators, NVC should use these alternative indicators to assess the performance of measles surveillance.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Indicator** | **Value for indicator** | **Numerator** | **Denominator** | **Remarks** |
| **Timeliness of notification (in %; alternative to *Timeliness and Completeness* indicator) (Tn)***Target: ≥80%****Tn****=(CC\*100)/G* |   % |           *(CC) = number of reports submitted within 48 hours*  |           *(G) = number of suspected rubella cases* |  |
| **Rate of cases tested negative for rubella IgM (alternative to *Rate of Discarded Cases* indicator) (N)** *Target: ≥2/100,000* ***N****=(DD\*100,000)/J* |   /100,000 |           *(DD) = number of negative IgM test results*  |           *(J) = population* |  |

* 1. ***Population immunity to measles and rubella***
		1. ***Routine vaccination coverage of measles- and rubella-containing vaccines***

## Summary of vaccination coverage, 2021–2023

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Routine vaccination coverage1**  | **2021** | **2022** | **2023** | **Remarks** |
| Measles-containing vaccine, 1st dose |  |  |  |  |
| Measles-containing vaccine, 2nd dose |  |  |  |  |
| Rubella-containing vaccine, 1st dose |  |  |  |  |
| Rubella-containing vaccine, 2nd dose |  |  |  |  |

*1 Vaccination coverage as in the official national routine immunization reports (JRF).*

## Methods used to determine the immunization coverage

Please describe the methods by which routine immunization coverage is determined, including both numerator and denominator data. Please clearly indicate the source of population statistics.

|  |  |  |  |
| --- | --- | --- | --- |
| **1st dose** | **Description** | **Source of data** | **Comments** |
| Numerator  |  |  |  |
| Denominator  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **2nd dose** | **Description** | **Source of data** | **Comments** |
| Numerator  |  |  |  |
| Denominator  |  |  |  |

*Example:* **Numerator***: Number of children < 24 months of age that have received one dose of measles- and rubella-containing vaccine given after 12 months of age.* **Denominator***: Number of children 12-23 months of age*

**Source of****data***: Administrative reports from subnational level (annually updated)*

* + 1. ***Additional data to determine the population immunity in 2023***

Note: Additional data from rapid coverage monitoring, coverage surveys or seroprevalence studies, when available, should be included in the report. For published studies or final written reports, references may be appended to this report.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Serological (S) or** **coverage (C)** **studies/surveys** | **Targeted territory or subpopulation** | **Results**  |
| **1** |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |

*Add/remove rows as needed*

* + 1. ***Information of administrative territories with measles/rubella-containing vaccine routine coverage 2023***

Are there any administrative territories with less than 90% coverage for either first and/or second dose of measles and/or rubella-containing vaccine in 2023? (Please check the appropriate box)

**[ ]** No

[ ]  Yes (Please provide list of such territories in table below)

**[ ]** Subnational coverage data are not collected or available

**[ ]** No subnational administrative levels in the country

**Please list all administrative territories (subnational levels) with first and/or second dose coverage**.

Total number of subnational territories in the country in 2023:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Territories** | **Population size** | **Coverage 1st dose (%)** | **Coverage 2nd dose (%)** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |
| 6 |  |  |  |  |
| 7 |  |  |  |  |
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| 12 |  |  |  |  |
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| 15 |  |  |  |  |
| 16 |  |  |  |  |
| 17 |  |  |  |  |

 ***Add/remove rows as you need***

* + 1. ***Information about high-risk population groups in the country***

Please indicate population groups with a higher than expected risk of developing/transmitting measles and/or rubella due to insufficient level of vaccination coverage or known/possible measles or rubella transmission in the country of origin. Consider for example population groups for which vaccination coverage is influenced by religious beliefs or ethnicity, residence in specific geographic or administrative areas, refugee or migrant status etc. Include high-risk groups here even though supplementary activities may have been implemented to improve coverage in these groups – these activities should be reported in the text boxunder **1.4.5 c. Qualitative assessment of SIA**. If details about these populations are not available, please note in the last column (Remarks) that your country is aware of the presence of these population groups.

[ ]  **No high-risk population groups**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description of high-risk population groups (please specify here)** | **Estimated population size** | **Estimated % of total population** | **Estimated MR vaccination coverage**  | **Remarks** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

*Add/remove rows as you need*

* + 1. ***Information on additional immunization activities in 2023***

## Actions taken to improve the level of immunization coverage in selected territories and/or in high-risk population groups in 2023

|  |
| --- |
| Text |

## Supplemental immunization activities (SIA)

## Were supplementary immunization activities with measles/rubella – containing vaccine conducted in 2023 (please check the appropriate box)?

**[ ]  YES [ ]  NO**

If supplementary immunization activities were conducted, please summarize results in the table below and complete the SIA Technical Report form (Section 4.3, one for each of SIA)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SIA conducted as national or subnational**  | **Type of SIA (e.g. catch-up, mop-up, follow-up)** | **Vaccine used (M, MR, MMR)** | **Dates****(start-end)** **(dd/mm/yyyy)** | **Age range of target group**  | **Target population size** | **Coverage achieved (%)** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

*Independent monitoring of SIAs is an objective measure of SIA quality. The SIA guidelines developed for injectable vaccines (using measles- and rubella-containing vaccines) can be used as a reference. These are available at* [*http://www.who.int/immunization/diseases/measles/SIA-Field-Guide.pdf?ua=1,&ua=1*](http://www.who.int/immunization/diseases/measles/SIA-Field-Guide.pdf?ua=1,&ua=1)

## Qualitative assessment of SIAAccording to administrative coverage and monitoring results (if done), provide qualitative assessment of SIA that was conducted. Indicate whether there were any geographic clusters and/or high-risk groups where SIA coverage was less than 90%.

|  |
| --- |
| Text |

**Section 2: Update of activities in country towards measles and rubella elimination**

Please indicate in the table below any programmatic changes related to measles, rubella and CRS that took place in your country in 2023. Please describe ongoing or new activities in the country regarding CRS surveillance.

|  |  |
| --- | --- |
| **Area of work** | **Remarks** |
| **Strategies (considering national and WHO regional strategies; any changes or new strategies introduced)** |  |
| **Immunization requirements and schedule, routine and supplemental**  |  |
| **Surveillance and reporting** |  |
| **CRS-specific activities (ongoing and new)** |  |
| **Other** |  |

**Section 3: Activities of the National Verification Committee (NVC) and its Secretariat**

* 1. ***Activities of the NVC in the year under review***

 Please provide a brief summary of the NVC activities conducted in the year under review (you may extend your answer to include conducted and planned activities in the current year). Include key issues addressed, and list any concerns that have arisen (e.g. NVC concerns about the national programme, challenges in organizing and/or holding regular NVC meetings)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Activity** | **Date (Month/Year)** | **Highlights** | **Challenges** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |

***Add/remove rows as you need***

* 1. ***The NVC Secretariat (list of national staff involved in preparation of ASU)***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Name** | **Function in national health system\*** | **Position** | **Organization** | **Contact details** **(e-mail, tel.)** |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |

***Add/remove rows as you need***

*\* Key national public health experts who are responsible for or involved in operational aspects of immunization
 programme, surveillance, measles/rubella reference laboratory and other programme areas.*

**Section 4: Additional data on measles, rubella and CRS in 2023**

* 1. ***Maps and epi curves with distribution of suspected and confirmed measles and rubella cases and measles and rubella outbreaks in 2023***

The RVC has noted that the collection and submission of more detailed subnational data (graphs and maps, epi curves with suspected/confirmed cases, epi curves with different genotypes) would facilitate the verification process. Therefore, if available (especially if already included in the routinely collected and analysed data) and feasible, please provide:

1. Maps with distribution of confirmed and suspected measles and rubella cases by subnational administrative territories, preferably at the level of districts or equivalent basic administrative level (or any other territorial presentation of data);
2. Epi-curves with distribution of cases (time/place).
3. Outbreak reports

These can be as an attached document to email, as copy of the text into this form, as link to official document or web page, or other option convenient for you and accessible for RVC and its Secretariat.

If it is technically challenging to insert them into this form, please send them as supplementary documents.

* 1. ***Technical report on SIA or ORI, if any conducted***

Please provide any report for supplemental immunization activities and outbreak response activities, if these were conducted in 2023. It can be in any format and language (preferable in official languages of the WHO Europe).

These can be as an attached document to email, as link to official document or web page, or other option convenient for you and accessible for RVC and its Secretariat.

**Annex 1: WHO guiding documents and examples**

**WHO Regional Office for Europe developed in 2023 the document “Eliminating measles and rubella in the WHO European Region Integrated guidance for surveillance, outbreak response and verification of elimination”, as update of previous guidelines. It will be in use from 2024.**

**There are no significant changes in the instructions, but in any case, we are not planning to assess countries elimination and verification performance against the document that was not available in 2023. ASU for 2024 will be synchronized with the new guiding document.**

* 1. ***Definitions\****

**Disease elimination:** the absence of endemic measles or rubella cases in a defined geographical area for a period of at least 12 months, in the presence of a well-performing surveillance system.

**Verification of regional elimination**: Regional elimination can be declared after 36 or more months of the absence of endemic measles or rubella in all Member States.

**Disease eradication:** worldwide interruption of measles or rubella transmission in the presence of a verified, well-performing surveillance system.

**Endemic transmission**: a chain of measles virus transmission that is continuous for ≥ 12 months within a country. To the greatest extent possible, this chain of transmission should be defined based on genotyping evidence along with epidemiological investigation. It is often the case that chains of transmission are unclear for measles, given the infectivity and mass movements of people.

**Re-establishment of endemic transmission:** a situation in which epidemiological and laboratory evidence indicate the presence of a chain of transmission of a measles or rubella virus variant that continues uninterrupted for a period of 12 months or more in a defined geographical area where disease was previously eliminated.

**Outbreak or chain of transmission**: 2 or more measles or rubella cases which are temporarily related and epidemiologically or virologically linked, or both.

Classification of cases:

**Suspected measles case**: a case with signs and symptoms consistent with measles clinical criteria:

* + fever *and*
	+ maculopapular rash *and*
	+ cough or coryza (runny nose) or conjunctivitis (red eyes).

**Suspected rubella case:** a case with signs and symptoms consistent with rubella clinical criteria:

* + maculopapular rash *and*
	+ cervical, suboccipital or post-auricular adenopathy, or arthralgia/arthritis.

***Note****: According to “Guidance for evaluating progress towards elimination of measles and rubella”, Weekly epidemiological record, No. 41, 2018, 93, 541-552.*

*(*[*https://apps.who.int/iris/bitstream/handle/10665/275392/WER9341.pdf?ua=1*](https://apps.who.int/iris/bitstream/handle/10665/275392/WER9341.pdf?ua=1) *)*

***Suspected case of measles or rubella*** *– A patient in whom a health-care worker suspects measles or rubella infection, or a patient with fever and maculopapular (non-vesicular) rash.*

**Laboratory-confirmed measles case:** a suspected case that meets the laboratory criteria for measles case confirmation.

**Laboratory-confirmed rubella case:** a suspected case that meets the laboratory criteria for rubella surveillance case confirmation.

**Epidemiologically linked measles case:** a suspected case that has not been adequately tested by laboratory and that was in contact with a laboratory-confirmed measles case 7–18 days before the onset of rash.

**Epidemiologically linked rubella case:** a suspected case that has not been adequately tested by laboratory and that was in contact with a laboratory-confirmed rubella case 12–23 days prior to onset of the disease.

**Clinically compatible measles case:** a suspected case that has not been adequately tested by laboratory and has not been epidemiologically linked to a confirmed measles case.

**Clinically compatible rubella case:** a suspected case that has not been adequately tested by laboratory and has not been epidemiologically linked to a confirmed rubella case.

**Endemic case**: Confirmed case of measles or rubella resulting from endemic transmission of measles or rubella.

**Imported case:** a case exposed outside the country during the 7-18 days (measles) or 12-23 days (rubella) prior to rash onset as supported by epidemiological and/or virological evidence.

**Import-related case:** a locally acquired measles or rubella infection occurring as part of a chain of transmission originating in an imported case, as supported by epidemiological and/or virological evidence. (Note: if transmission of import-related cases persists for 12 months or more, cases are no longer considered as import-related but as endemic).

**Unknown origin case**: A confirmed measles or rubella case for which no epidemiological or virological link to importation or endemic transmission can be established after a thorough investigation.

**Discarded case**: a suspected case that was investigated and discarded, either through negative results of adequate laboratory testing for measles and rubella or by an epidemiological link to a laboratory-confirmed case of another disease; in addition, IgM-positive cases in recent vaccine recipients can be discarded if they meet all of the following criteria:

* history of vaccination with relevant vaccine 7 days to 6 weeks prior to specimen collection;
* onset of rash 7−14 days after vaccination;
* no evidence of virus transmission revealed by active search in community;
* no history of travel to areas in which the virus is known to be circulating.

**Genotype:** Operational taxonomic unit defined on the basis of nucleotide variation between viral strains. Measles virus genotypes are defined on the genetic analysis of the N-450 sequence, which is the most variable region of the measles virus genome. Rubella virus genotypes are defined on genetic analysis of the E1- 739 sequence.

**MeaNS Distinct Sequence ID (measles only):** is a 4-digit identifier assigned to a given N-450 sequence in MeaNS database, in addition to its unique identifiers (Sample ID and Sequence ID). All the identical N-450 sequences will harbour the same MeaNS Distinct Sequence ID, while having different Sample IDs and Sequence IDs. Some of the Distinct Sequence IDs will be assigned a named strain (see examples below). genotype, distinct seq ID and when available, named strains, are the data expected in tables 1.1.4.1 c and d.

**Named strain (measles only):** Measles virus variant specifically identified in MeaNS as a representative N-450 sequence due to its important prevalence within the database (usually associated with widespread transmission). It allows describing viral diversity with finer resolution within a single genotype. Examples of named strains are shown below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MeaNS ID** | **WHO name** | **Genotype** | **Distinct Seq ID** | **Named Strain** |
| 139793 | MVs/Derby.GBR/19.19/ | B3 | **4298** | MVs/Kabul.AFG/20.2014/3 |
| 144562 | MVs/Reading.GBR/2.20/ | B3 | **6254** | *no named strain for this Distinct Seq ID* |
| 144929 | MVs/London.GBR/5.20/ | D8 | **4683** | MVs/Gir Somnath.IND/42.16/ |
| 135047 | MVs/Harrow.GBR/3.19/ | D8 | **5676** | *no named strain for this Distinct Seq ID* |

**Case classification algorithm for measles and rubella**



*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*\*Definitions are based on:*

***Surveillance Guidelines for Measles, Rubella and Congenital Rubella Syndrome in the WHO European Region -Update December 2012***

<http://www.euro.who.int/__data/assets/pdf_file/0018/79020/e93035-2013.pdf?ua=1>

***Eliminating measles and rubella. Framework for the verification process in the WHO European Region***[*http://www.euro.who.int/\_\_data/assets/pdf\_file/0009/247356/Eliminating-measles-and-rubella-Framework-for-the-verification-process-in-the-WHO-European-Region.pdf?ua=1*](http://www.euro.who.int/__data/assets/pdf_file/0009/247356/Eliminating-measles-and-rubella-Framework-for-the-verification-process-in-the-WHO-European-Region.pdf?ua=1)

***World Health Organization. Vaccine-preventable Diseases Surveillance Standard. Measles.2018***<https://www.who.int/immunization/monitoring_surveillance/burden/vpd/WHO_SurveillanceVaccinePreventable_11_Measles_R2.pdf?ua=1>

***World Health Organization. Vaccine-preventable Diseases Surveillance Standard. Rubella. 2018***<https://www.who.int/immunization/monitoring_surveillance/burden/vpd/WHO_SurveillanceVaccinePreventable_20_Rubella_R2.pdf?ua=1>

* 1. ***Description of “Indicators and targets” for measuring performance of measles and rubella surveillance***

| **Indicator** | **Description** | **Target and Notes** |
| --- | --- | --- |
| **Timeliness of reporting (to national level) (T)** | **Percentage** of measles or rubella routine surveillance reports a submitted to the national level by the deadline b | **Target: ≥80%** |
| *Example:* | **A** Number of reports submitted by the deadline **B** Number of expected reports | ***T=(A\*100)/B (%)*** |
| **Completeness of reporting (to national level) (C)** | **Percentage** of measles or rubella routine surveillance reportsasubmitted to the national level | **Target: ≥80%** |
| *Example:* | **E** Number of submitted reports**B** Number of expected reports | ***C=(E\*100)/B (%)***  |
| **Rate of laboratory investigations (L)** | **Percentage** of cases suspected for measles or rubella with adequate specimensc collected and tested in a WHO accredited or proficient laboratoryd*Note:* ***Exclude*** *from the denominator any suspected cases not tested by a laboratory and (a) confirmed by epidemiological linkage, or (b) discarded as non-measles/non-rubella by epidemiological linkage to a laboratory-confirmed case of another communicable disease or epidemiological linkage to a measles or rubella IgM-negative case*  | **Target: ≥80%**  |
| *Example:* | **F** Number of suspected measles or rubella cases with adequate specimens collected and tested in a proficient laboratory**G** Number of suspected cases | ***L=(F\*100)/G (%)*** |
| **Rate of discarded cases (D)** | **The rate** of suspected measles or rubella cases investigated and discarded as non-measles or non-rubella cases using laboratory testing in a proficient laboratory and/or epidemiological linkage to another confirmed disease | **Target:** At least 2 discarded measles or rubella cases per 100 000 |
| *Example:* | **H** Number of suspected measles or rubella cases investigated and discarded as non- measles or non-rubella cases**J** Population | ***D=(H\*100 000)/J*** |
| **Representativeness of reporting discarded cases (R)** | **Percentage** of subnational administrative territories (e.g. at the province level or its administrative equivalent) reporting the rate of discarded cases (D) at least 2 per 100 000 population per year | **Target: ≥80%**  |
| *Example:* | **K** Number of subnational administrative territories reporting the rate of discarded cases (D) at least 2 per 100 000 population per year**M** Number of subnational administrative territories | ***R=(K\*100)/M (%)*** |
| **Viral detection (V)** | **Percentage** of laboratory-confirmed chains of transmission of measles or rubella with samples adequate for viral detection collected and tested in an accredited laboratorye | **Target: ≥ 80%**  |
| *Example:* | **P** Number of chains of transmission of measles or rubella for which adequate samples have been submitted for viral detection / genotyping**Q** Number of chains of transmission identified | ***V=(P\*100)/Q (%)*** |
| **Origin of infection identified (O)** | **Percentage** of measles or rubella cases for which the origin of infection (e.g. imported, import-related or endemic) has been identified | **Target: ≥ 80%** |
| *Example:* | **W** Number of measles or rubella cases for which the origin of infection (e.g. imported, import-related or endemic) has been identified **X** The total number of measles or rubella cases  | ***O=(W\*100)/X (%)*** |
| **Timeliness of investigation (I)** | **Percentage** of suspected measles or rubella cases with an adequate investigation f initiated within 48 hours of notification  | **Target: ≥ 80%** |
| *Example:* | **Y** Number of measles or rubella cases with an adequate investigation**Z** Number of suspected measles or rubella cases, respectively  | ***I=(Y\*100)/Z (%)*** |

a Regular monthly or weekly reports, including “zero” reports to be submitted by each surveillance reporting unit to national level. This does not refer to lab reporting of cases.

b The deadline to submit data on the previous months or week to be defined by Member State

c A single clinical sample obtained at the first contact with the health-care system at any time within 28 days after rash onset is considered adequate for surveillance purposes*.*

d Laboratory that is WHO accredited and/or has an established quality assurance programme with oversight by a WHO accredited laboratory*.*

e Measles and rubella viruses can be detected in nasal secretions, urine, serum and whole blood, and dry blood spots up to seven days after onset of the rash and in oral fluid for even longer *.*

f An adequate investigation includes the collection of at least the following essential data elements from each suspected measles/rubella case: case identifier, age (or date of birth), date of rash onset, date of specimen collection and vaccination status. Countries may wish to collect other data that may be important for epidemiologic investigation

*Alternative indicators*

The following two indicators should be used by countries that are unable to report standard indicators on timeliness of reporting and/or rate of discarded cases as described above.

| **Timeliness of notification (Tn)**  | **Alternative to Timeliness and Completeness of reporting****Percentage** of measles or rubella case-based reports to surveillance system submitted within 48 hours of the rash onset | **Target: ≥80%**  |
| --- | --- | --- |
| *Example:* | CC Number of reports submitted within 48 hours G Number of suspected cases | ***Tn=(CC\*100)/G (%)*** |
| **Rate of cases tested negative for measles or rubella IgM (N)** | **Alternative to Rate of discarded cases****The rate** of cases of measles or rubella-like illnesses (MLI/RLI) whose specimens tested IgM negative in a proficient laboratory | **Target:** At least 2 MLI/RLI cases tested negative per 100 000 population (nationwide) |
| *Example:* | DD Number of measles or rubella cases tested negative for measles or rubella IgMJ Population | ***N=(DD\*100 000)/J*** |

* 1. ***Sustaining measles and rubella elimination after verification - Discussion points for NVC and its Secretariat on risk for re-establishing endemic transmission of diseases***

Countries verified by the RVC as having achieved interruption of endemic measles and rubella transmission for a period of 36 months should assess their risks for re-establishing endemic transmission of diseases. Recognizing that the risk of importation will exist as long as measles and rubella viruses are present and circulating in other countries, each **national public health system’s priorities are high immunity of the population, sensitive surveillance system and established conditions and capacities for prompt and comprehensive outbreak response.**

Below is a list of possible challenges and suggestions for sustaining elimination status, developed based on recognized and reported situations in countries. It is not a comprehensive list of all issues and it is not intended to be used as a tool with measurable indicators or thresholds. We expect that the National Verification Committee and national technical staff (the NVC’s Secretariat) will use it to review whether these challenges are present in the country; whether they are recognized and being addressed, or whether there is a plan to address them; and what role the NVC can play or is playing in supporting the national public health system dealing with these issues, with expected technical inputs from and involvement of the national technical advisory bodies and structures.

**Immunity/susceptibility of population**

* National immunization programme performance in recent years and routine immunization coverage
	+ Monitor rates and trends related to coverage, timelines of immunization (according to age-specific recommendations), and potential variation in coverage per vaccine dose (due to implementation, availability, acceptance or other reasons) with first and/or second dose.
	+ Define the most affected by suboptimal coverage or downward trends (e.g. territories, populations, minorities/ethnic groups, social-economic groups).
	+ Clarify the main reasons for this situation, list ongoing and planned activities to deal with this situation and discuss further and additional steps (benefits of intervention in policy segment, influencing decision-makers, or addressing the public) to reach/keep coverage at 95% or higher with both doses.
* Susceptible population among adolescents and adults
	+ Review available data or estimate the size of the susceptible population among adolescent and adults (not immunized or immunized with just one dose due to absence of immunization programme, different requirements and schedule, gaps in vaccine supply) and any supplemental immunization activity taken or planned (army service, university entry requirements, for specific occupations or work in health and educational system, for international travel etc.)
	+ Review possibility of aggregation of susceptible individuals or possible increased contacts among susceptible individuals due to social or family relations (economic migration, education institutions, family of susceptible adults and newborns, parents and children contacts in kindergartens).
	+ Review internal (inside country) migration and moving of susceptible individuals (countries with historical difference in immunization programme for different territories, or with different coverage at different subnational territories).
	+ Identify the proportion of adolescents and adults who are born in other countries and who were immunized according to immunization programmes of those countries, and review their immunization programmes (coverage may be higher or lower, immunization and two-dose schedule introduced earlier or later than in your country).
* Specific subgroups of population with low immunization coverage or that are not immunized
	+ Identify all such groups and the reasons for their low immunization coverage (access, denial, refusal, poor services). Have adequate steps and strategies to address their needs been taken, or planed?
	+ If needed, plan additional activities to better define these groups and the best approach to increase their coverage.

**Surveillance**

* High sensitivity of health care system/health care workers to measles/rubella/CRS in absence of diseases
	+ Check whether health care workers (HCW) are trained and systematically reminded to stay vigilant and suspect measles/rubella/CRS, through diseases-specific reporting, or syndromic surveillance, or as part of programmes for surveillance and reporting of congenital malformation. If some challenges are recognized, check whether specific actions are conducted and planned, and if not, plan for actions to be discussed.
* Adequate quality of surveillance
	+ Assess reliability and adequacy of diseases surveillance against global measles and rubella surveillance indicators. If global surveillance indicators are not implementable or are incompatible with the current health system structure and procedures, other indicators should be considered in order to assess quality of surveillance. A high-quality surveillance is the one that have every suspected case of measles, rubella and CRS (appearing anywhere in the country during the year) reported, investigated and confirm or discard.
	+ Ensure that all segments of surveillance (clinical, epidemiological and laboratory) are coordinated and cooperate, and that every suspected case is investigated adequately and timely to identify details of genotype and lineages of the viruses.
* Ensure that surveillance data are systematically used and analysed to detect and define susceptible individuals and groups, and that adequate measures to immunize them are taken/planned.

**Outbreak response**

* Ensure that lessons learned from previous outbreaks are/will be used to improve outbreak response.
* Check that all stakeholders understand that an outbreak is an emergency and its control is a high priority.
* Check that all requirements for adequate, timely response are in place, including
	+ legislation allowing timely intervention;
	+ up to date technical guidelines and protocols;
	+ health care workers and all other critical participants in outbreak response are trained and aware of their role and responsibility;
	+ sufficient resources (financial, human, vaccine, logistics) are or can quickly become available in short period,
	+ prepared and trained advocacy and communication teams who have developed materials, messages and tailored ways of communication (different for different target populations);
	+ planned and prepared cooperation with partners (governmental sectors, private sector, NGOs, donors, media).
* Use outbreak analysis systematically to define susceptible individuals and undertake adequate measures to immunize them to prevent similar events in future.