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E. PLAN OF ACTION FOR THE SUSTAINABILITY OF MEASLES, RUBELLA, AND CONGENITAL RUBELLA SYNDROME ELIMINATION 2018-2023: PROGRESS REPORT

Background

1. The purpose of this document is to present the second progress report on the Plan of Action for the Sustainability of Measles, Rubella and Congenital Rubella Syndrome Elimination in the Americas 2018-2023 to the Governing Bodies of the Pan American Health Organization (PAHO) (Document CSP29/8 and Resolution CSP29. R11 [2017]) *(1, 2)*. This plan of action was approved in order for Member States to take necessary steps to ensure the sustainability of eliminating these diseases according to the plan's four strategic lines of action.

2. For more than 40 years, the Region of the Americas has been a global leader in the eradication, elimination, and control of vaccine-preventable diseases and was declared free of endemic measles in September 2016. However, since September 2019, when the first progress report on the Plan of Action for the Sustainability of Measles, Rubella, and Congenital Rubella Syndrome Elimination in the Americas 2018-2023 (Document CD57/INF/10) was presented to the Directing Council, the Region has continued to report measles outbreaks, amongst other challenges such as the COVID-19 pandemic.

Analysis of the Progress Achieved

3. In January 2019, the Director of PAHO convened the first meeting of an external group of experts to form the Regional Monitoring and Reverification Commission for Measles, Rubella, and Congenital Rubella Syndrome Elimination (hereinafter the Commission). The Commission has been conducting virtual and in-person meetings with the countries that have faced the largest outbreaks, along with technical staff of the Pan American Sanitary Bureau (the Bureau or PASB), which acts as the Commission's technical secretariat *(3)*. The Commission developed the Regional Framework for the Monitoring and Reverification of Measles, Rubella, and Congenital Rubella Syndrome Elimination (under publication) to guide the sustainability of elimination in countries that

have maintained measles- and rubella-free status and for reverification of countries that reestablished endemic transmission.

4. The Bureau continues to support countries by *a)* providing technical and financial cooperation for training workshops on rapid response, *b)* providing laboratory reagents and strengthening technical national capacities for molecular diagnostic, *c)* mobilizing human and financial resources for follow-up vaccination campaigns and outbreak control, and *d)* organizing advocacy meetings between high-level policymakers and the Commission, among other initiatives. These actions have contributed to the implementation of best practices to interrupt measles virus transmission in the countries of the Region.

5. Although two countries in the Region reestablished endemic measles transmission (Venezuela in 2018 and Brazil in 2019), 35 countries and nine territories have maintained elimination of rubella and congenital rubella syndrome since 2009, when the last endemic cases were confirmed in Argentina and Brazil, respectively *(4)*. Between 2010 and 2020, 88 imported cases of rubella were reported in eight countries;[1] and 16 cases of congenital rubella syndrome were reported in two countries.[2] Integrated actions to eliminate measles, both through vaccination and epidemiological surveillance, have made it possible to sustain this achievement over the last 10 years.

6. Below is a summary of progress made on each strategic line of action and the corresponding indicators.

Strategic line of action 1: Guarantee universal access to measles and rubella vaccination services for the population targeted in the routine vaccination program, and other at-risk age groups

7. The COVID-19 pandemic is having a negative impact on the vaccine coverage indicators in strategic line of action 1. In 30 countries and territories in Latin America and the Caribbean, approximately 360,700 first doses of the measles, mumps, and rubella vaccine were not given between January and September 2020, due to the pandemic's impact on vaccination services. This is a 13% drop compared to 2019. Countries in the Region have implemented innovative strategies to continue vaccinating the population, including drive-through vaccination, mobile posts, and appointments, as well as follow-up strategies using nominal electronic immunization registries *(5)*. Although six countries postponed their follow-up campaigns until 2021 due to the COVID-19 pandemic, the Bureau has continued to support these activities through virtual training on microplanning.

[1] Argentina, Brazil, Canada, Chile, Colombia, French Guiana, Mexico, and United States of America.
[2] Canada (3 cases) and United States of America (13 cases).

Objective 1.1: Achieve at least 95% vaccination coverage in children under five in order to achieve high immunity in the general population	
Indicator, baseline, and target	**Status**
1.1.1 Number of countries reporting 95% coverage or higher at the national level with the first dose of MMR vaccine Baseline (2015): 20/35 countries Target (2023): 30/35 countries	In 2019, 16 countries reported 95% of coverage at the national level with the first dose of the MMR vaccine. This is below the baseline. Data for 2020 is not yet available.
1.1.2 Number of countries reporting 95% coverage or higher with the first dose of MMR vaccine in at least 80% of municipalities (or equivalent political division) Baseline (2015): 15/35 countries Target: 25/35 countries	In 2019, nine countries met the target of 95% nationwide coverage in at least 80% of their municipalities for the first dose of the MMR vaccine. This is below the baseline. Data for 2020 is not yet available.
1.1.3 Number of countries reporting 95% coverage or higher at the national level with the second dose of MMR vaccine Baseline (2015): 6/30 countries[a] Target: 15/30 countries[b]	In 2019, 11 countries met the target of 95% nationwide coverage for the second dose of the MMR vaccine. The baseline figure was nearly doubled. Data for 2020 is not yet available.
1.1.4 Number of countries reporting 95% coverage or higher with the second dose of MMR vaccine in at least 80% of municipalities (or equivalent political division) Baseline (2015): 4/30 countries[a] Target: 12/30 countries[b]	In 2019, eight countries met the target of 95% nationwide coverage in at least 80% of their municipalities for the second dose of the MMR vaccine. The baseline figure was nearly doubled. Data for 2020 is not yet available.
1.1.5 Number and proportion of countries that conduct follow-up campaigns and achieve at least 95% of the national target Baseline (2015-2016): 4/6 countries (66%) Target: 80%[c]	In 2019, four of the five countries (80%) conducting follow-up campaigns achieved at least 95% coverage. The target of 80% of campaigns with at least 95% coverage was reached. In 2020, only one country implemented its follow-up campaign. The other seven countries postponed their scheduled campaigns until 2021 due to the COVID-19 pandemic.

[a] When the Plan of Action was developed in 2017, only 30 countries included the second dose of the measles, mumps, and rubella vaccine their national immunization schedules.

[b] The 35 Member States have since introduced the second dose into their national immunization schedules.

[c] The number of countries that reach the target will be determined by how many implement campaigns between 2018 and 2023. The objective is for at least 80% of countries to achieve the 95% national target.

Strategic line of action 2: Strengthen the capacity of epidemiological surveillance systems for measles, rubella, and congenital rubella syndrome

8. The COVID-19 pandemic is also having a negative impact on the indicators of epidemiological surveillance of measles and rubella (strategic line of action 2). Compared to 2019, the Region of the Americas has experienced a 71% drop in reported cases of measles and rubella. Factors affecting measles and rubella surveillance include limited human resources, reduced field research, and difficulties with international and national transport for timely shipment of reagents and laboratory supplies *(6)*.

Objective 2.1: Monitor the quality and sensitivity of epidemiological surveillance of measles, rubella, and congenital rubella syndrome	
Indicator, baseline, and target	**Status**
2.1.1 Number of countries that meet the established minimum annual rate of suspected measles/rubella cases (at least 2 per 100,000 population) plus at least three of the following five additional indicators: a) At least 80% of suspected cases are adequately investigated. b) Adequate serum samples are obtained from at least 80% of suspected cases. c) At least 80% of samples reach the laboratory within five days. d) At least 80% of laboratory results are reported within four days. The annual rate of suspected cases of congenital rubella syndrome is at least 1 per 10,000 live births. Baseline: 6/33[a] Target: 15/33	In 2019, 14 countries met the established minimum annual rate of suspected measles/rubella cases, but only six met at least three of the other five indicators. Therefore, the number of countries meeting the indicator remained at the baseline. In 2020,[b] seven countries met the expected established rate of suspected measles/rubella cases, and three met at least three of the other five indicators. In 2020, the pandemic impacted indicators and halved the baseline number.
2.1.2 Number of countries with an active surveillance system for congenital rubella syndrome Baseline: 12/33[a] Target: 20/33	In 2019, 21 countries had active surveillance of suspected cases of congenital rubella syndrome, meeting the reporting rate of 1 case per 10,000 live births. This indicator showed an increase from the baseline. Data for 2020 is not yet available.

[a] Only 33 countries report suspected cases of measles, rubella, and congenital rubella syndrome to PAHO.
[b] Data up to epidemiological week 45 of 2020.

Strategic line of action 3: Develop national operational capacity to maintain measles and rubella elimination

9. Starting in 2021, an essential requirement will be for national commissions on the sustainability of elimination to endorse the country reports submitted to the Regional Monitoring and Reverification Commission for Measles, Rubella, and Congenital Rubella Syndrome Elimination from the current year onwards. By the 2023 target year, 100% are expected to meet this indicator.

Objective 3.1: Implement and monitor plans to ensure the sustainability of elimination by strengthening national response capacity in the event of imported cases of measles, rubella, or congenital rubella syndrome	
Indicator, baseline, and target	**Status**
3.1.1 Number of national committees that monitor the plans of sustainability of measles and rubella elimination Baseline (2016): 24[a] Target: 24[a]	Between 2019 and 2020, 19 countries and the English Caribbean subregion had national commissions monitoring sustainability plans for measles and rubella elimination. There is a decline in the baseline number of this indicator.
3.1.2 Number of countries that present annual reports on the implementation of their plans to ensure the sustainability of measles and rubella elimination Baseline (2016): 35 Target: 35	Between 2019 and 2020, only six countries with outbreaks submitted reports to the Commission. There is a decline in the baseline number of this indicator.

[a] 23 national commissions, plus an English Caribbean subregional commission, were formed to verify elimination. The number of commissions should be maintained to monitor elimination sustainability.

Strategic line of action 4: Establish standard mechanisms for rapid response to imported cases of measles, rubella, and congenital rubella syndrome in order to prevent the reestablishment of endemic transmission in the countries

10. Between 1 January 2017 and 30 November 2020, the Region of the Americas reported a total of 49,729 confirmed cases of measles in 18 countries. Countries actively responded with their own rapid response teams and financial and human resources to face the challenges involved in controlling their outbreaks, and PAHO maintained technical and financial cooperation with Member States to strengthen national rapid response capacities for measles outbreaks. Transmission of the virus was interrupted within 12 months in 16 of the 18 countries, which remain measles-free. Endemic transmission of the virus was reestablished in Venezuela and Brazil in 2018 and 2019, respectively.

11. Venezuela reported 7,054 cases and 85 deaths between July 2017 and August 2019 (15% of the Region's total cases). On 13 November 2020, the country submitted evidence of outbreak control to the Regional Monitoring and Reverification Commission for Measles, Rubella, and Congenital Rubella Syndrome Elimination and is pending reverification as a measles-free country.

12. Between February 2018 and December 2020, Brazil reported 39,695 cases of measles (80% of the Region's total cases) and 35 deaths. There are still active outbreaks in three states of the country.[3] On 2 September 2020, the country submitted a report to the Commission and continues to implement recommendations to interrupt the outbreak and reverify as a measles-free country.[4]

13. From 2017 to 2020, genotypes D8 and B3 were identified in 99% of cases in the Region where specimens were available for virus detection. The ongoing sequence analysis between the identified genotypes showed different lineages, indicating the presence of multiple imported cases in countries such as Argentina, Brazil, Canada, Colombia, Chile, and United States of America. The analysis also confirmed uninterrupted measles transmission over more than 12 months in countries such as Brazil and Venezuela, where the D8 genotype, MVi/Hulu-Langat.MYS/26.11 lineage became endemic.

Objective 4.1: Establish plans and rapid response teams in the countries to deal with imported cases of measles, rubella, and congenital rubella syndrome in order to prevent the reestablishment of endemic transmission	
Indicator, baseline, and target	**Status**
4.1.1 Number of countries and territories in which endemic transmission of measles or rubella virus has been reestablished Baseline (2016): 0/47[a] Target: 0/47	In 2019, endemic measles transmission was reestablished in one country. No other country reestablished endemic transmission in 2020.

[a] Geographically, the Region of the Americas contains 47 countries and territories (35 countries and 12 territories). All must maintain measles and rubella-free status.

[3] Data up to epidemiological week 14 of 2021 (ending on 4 April).

[4] The other countries reporting cases in 2018 were Antigua and Barbuda (1), Argentina (14), Canada (30), Chile (23), Colombia (204), Ecuador (19), United States of America (372), Guatemala (1), and Peru (41). In 2019, 21,674 cases were reported in 14 countries: Argentina (106), Bahamas (3), Brazil (19,326), Canada (113), Colombia (242), Costa Rica (10), Cuba (1), United States of America (1,282), Mexico (20), Peru (2), Saint Lucia (1), Uruguay (9), and Venezuela (548). In 2020, 8,619 cases were reported in nine countries: Argentina (61), Bolivia (2), Brazil (8,344), Canada (1), Colombia (1), Chile (2), United States of America (12), Mexico (194), and Uruguay (2). Only Brazil has active measles outbreaks at the time of this report.

Objective 4.1: Establish plans and rapid response teams in the countries to deal with imported cases of measles, rubella, and congenital rubella syndrome in order to prevent the reestablishment of endemic transmission	
Indicator, baseline, and target	**Status**
4.1.2 Percentage of countries and territories with measles or rubella outbreaks that have a rapid response team trained to prevent the spread of transmission of the viruses that cause these diseases Baseline: 100% Target: 100%	Between 2019 and 2020, only 91% of countries with measles outbreaks (16 out of 18 countries) deployed a national and subnational rapid response team to prevent transmission of the measles virus. There is a decline in the baseline number of this indicator.
4.1.3 Percentage of countries and territories with measles or rubella outbreaks that have a rapid response plan for dealing with imported cases Baseline: 100% Target: 100%	Between 2019 and 2020, only 91% of countries with measles outbreaks (16 of 18 countries) deployed a national and subnational rapid response team to prevent transmission of the measles virus. There is a decline in the baseline number of this indicator.

Actions necessary to improve the situation

14. Due to the impact of the COVID-19 pandemic on vaccination services and epidemiological surveillance, Member States are urged to:

a) Continue to give high priority to achieving the four strategic lines as a matter of public health to sustain measles, rubella, and congenital rubella syndrome elimination; prevent transmission of the measles and rubella viruses; and reverify those countries that reestablished endemic transmission in order for the Region to regain its status as free of endemic measles.

b) Strengthen cross-border coordination to increase vaccination coverage, epidemiological surveillance, and training for rapid response teams in order to prevent transmission when the virus is detected in their territories.

c) Implement short-term actions to step up vaccinations and epidemiological surveillance in municipalities where vaccination coverage and surveillance indicators have been affected by the COVID-19 pandemic.

d) Develop annual plans to monitor the sustainability of elimination of measles, rubella, and congenital rubella syndrome in each Member State. The plans must be submitted to the Commission each year in June.

Action by the Executive Committee

15. The Executive Committee is invited to take note of this report and provide any comments it deems pertinent.

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