



**PROGRESS
REPORT**



Regional Immunization Action Plan Progress Report

January-December 2017

PAHO



**Pan American
Health
Organization**



**World Health
Organization**
REGIONAL OFFICE FOR THE
Americas



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54th DIRECTING COUNCIL

67th SESSION OF THE REGIONAL COMMITTEE OF WHO FOR THE AMERICAS

Washington, D.C., USA, 28 September-2 October 2015

CD54.R8
Original: Spanish

RESOLUTION

CD54.R8

PLAN OF ACTION ON IMMUNIZATION

THE 54th DIRECTING COUNCIL,

Having reviewed the *Plan of Action on Immunization* (Document CD54/7, Rev. 2) for the 2016-2020 period and considered the significant progress of the countries in the field of vaccination;

Taking into account the international mandates arising from the World Health Assembly, particularly Resolution WHA65.17 (2012) on the Global Vaccine Action Plan, and Resolution WHA65.5 (2012) declaring that poliomyelitis is a global public health emergency, and the Strategic Plan of the Pan American Health Organization 2014-2019;

Recognizing the progress made in the elimination and control of vaccine-preventable diseases and that work must still be done so that access to vaccination helps bring health services to all through a comprehensive approach that considers the social determinants of health and universal coverage;

Considering that the Plan of Action offers the Member States a tool which allows them to adopt goals, strategies, and common activities, and to facilitate dialogue, promote synergies with all partners, and strengthen the Region's national immunization programs,

RESOLVES:

1. To approve the *Plan of Action on Immunization* and urge countries, as appropriate and taking into account their contexts, needs, and priorities, to:
 - a) promote universal access to immunization programs and initiatives as a public good;
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- b) adopt and adapt the *Plan of Action on Immunization* in accordance with the characteristics of each country and seek to guarantee the resources needed to meet the objectives described in the Plan of Action;
 - c) commit to sustaining the achievements made in the elimination of polio, measles, rubella, and congenital rubella syndrome, in the control of vaccine-preventable diseases, in immunization as a political priority in the country, and in the value that individuals and communities place on vaccines;
 - d) ensure that work is done to close gaps related to neonatal tetanus elimination, achieve vaccination coverage goals at all the administrative levels, and expand the benefits of immunization to all people equitably throughout the life course;
 - e) tackle new challenges posed by the sustainability of new vaccine introduction in national immunization schedules, and with access for all; promote evidence-based decision-making and an evaluation of the benefits of immunization;
 - f) favor the strengthening of health services to provide immunization services, and achieve the expected results proposed by the post-2015 development agenda for reductions in infant mortality and maternal mortality;
 - g) ensure that immunization programs have timely and sustainable access to the necessary quality inputs and that these are obtained with national resources, function as an integral part of strengthened health services, and carry out vaccination activities integrated with other interventions.
2. To request the Director to:
- a) provide technical cooperation to strengthen the operating capacity of the national immunization programs to consolidate the achievements made;
 - b) promote strategies making it possible to ensure vaccination in municipalities with low coverage, as well as among vulnerable and hard-to-reach populations;
 - c) provide technical guidance to the Member States for evidence-based decision-making;
 - d) promote strategies that optimize epidemiological surveillance of vaccine-preventable diseases, the laboratory network, the supply chain, the cold chain, and information systems;
 - e) maintain technical cooperation to facilitate timely and equitable access to vaccines and supplies by means of the Revolving Fund for Vaccine Procurement, while upholding its principles and conditions;
 - f) strengthen the integrated work of the Organization, so that together with the countries, the immunization program is used as a strategy for the health services to reach everyone, based on a comprehensive approach and within the framework of universal health coverage.

(Sixth meeting, 30 September 2015)

ACRONYMS

AFP	acute flaccid paralysis	MMR	measles–mumps–rubella vaccine
BCG	Bacillus Calmette-Guérin (vaccine against serious forms of tuberculosis)	MNT	maternal and neonatal tetanus
BOPV	bivalent oral polio vaccine	NAC	National Authority for Containment
CRS	congenital rubella syndrome	NITAG	National Immunization Technical Advisory Group
cVDPV	circulating vaccine-derived poliovirus	NRA	National Regulatory Agency
DTP	diphtheria–tetanus–pertussis vaccine	OPV	oral polio vaccine
EIR	electronic immunization registry	PAHO	Pan American Health Organization
EPI	Expanded Program on Immunization	PCV	pneumococcal conjugate vaccine
EVM	effective vaccine management	RCC	Regional Certification Commission
fIPV	fractional dose of the inactivated polio vaccine	RF	Revolving Fund
GAPIII	Global Action Plan to minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of oral polio vaccine use, third edition	RIAP	Regional Immunization Action Plan
GPEI	Global Polio Eradication Initiative	RSV	respiratory syncytial virus
GVAP	Global Vaccine Action Plan	TAG	Technical Advisory Group on Vaccine-preventable Diseases
HPV	human papillomavirus	TD2	tetanus–diphtheria vaccine
IPD	invasive pneumococcal disease	TDAP	tetanus–diphtheria–pertussis vaccine
IPV	inactivated polio vaccine	UNICEF	United Nations Children's Fund
JRF	Joint Reporting Form on immunization	VDPV	vaccine-derived poliovirus
LAC	Latin America and the Caribbean	VSSM	Vaccination Supplies Stock Management software
MCV1	measles-containing vaccine, dose 1	VWA	Vaccination Week in the Americas
		WHO	World Health Organization
		WPV	wild poliovirus

Introduction

During the 54th Directing Council meeting of the Pan American Health Organization (PAHO) in September 2015, Member States approved a resolution to adopt the Regional Immunization Action Plan (RIAP) as the framework to identify and overcome immunization challenges currently faced by the countries of the Americas. The creation of the RIAP was the result of an extensive consultation process conducted among those involved in the Region's immunization programs, including national managers of the Expanded Program on Immunization (EPI), PAHO immunization focal points, and other key partners.

The RIAP aims to provide Member States with the rationale, guiding principles, general and strategic objectives, and monitoring and evaluation framework to enable national immunization programs in the Region to align successfully with the Global Vaccine Action Plan (GVAP) and implement strategies to ensure that all citizens of the Americas will benefit from immunization through 2020 and beyond.

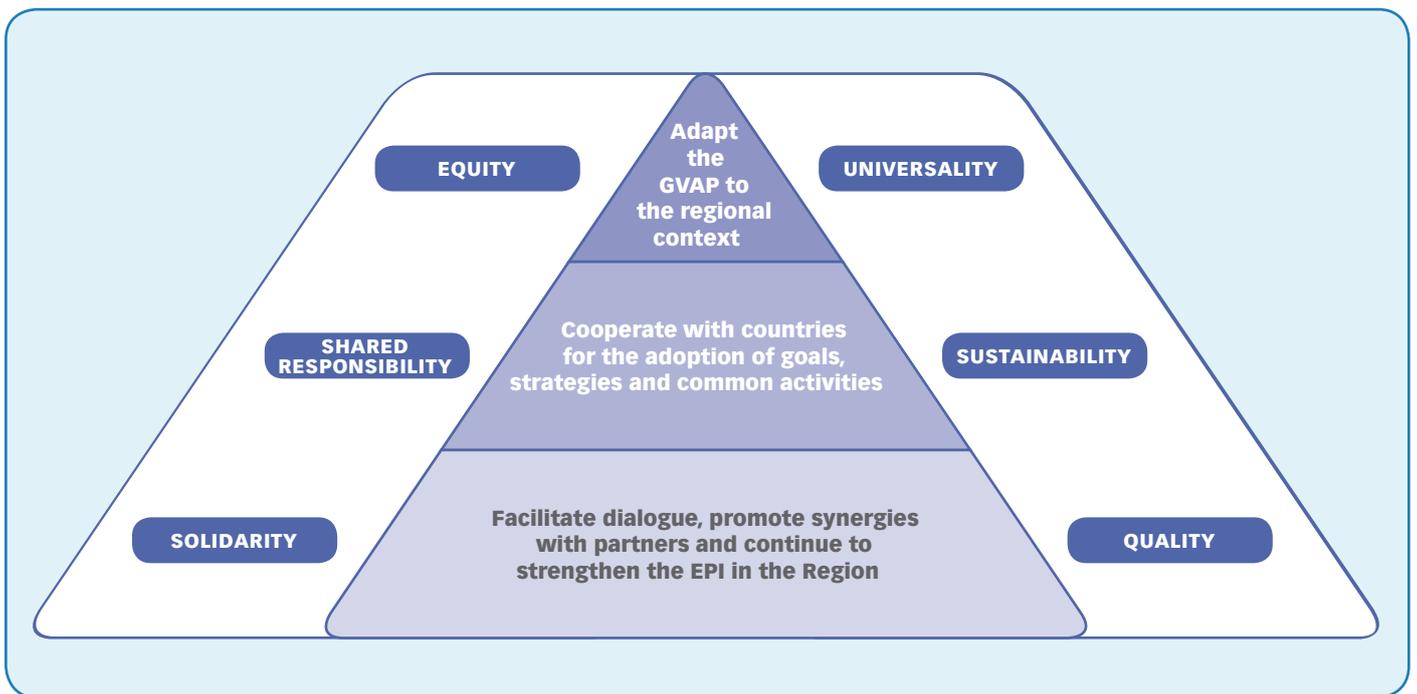
The RIAP also promotes the integration of immunization with other primary care services, such as prenatal care, adolescent sexual and reproductive health, the health of older adults, and the prevention of chronic diseases, such as liver and cervical cancer through Strategic Line of Action No. 4.

Monitoring and evaluating of the RIAP is conducted in accordance with PAHO's results-based management framework, as well as its performance management processes. PAHO developed an indicator template for each of the indicators included in the RIAP. The template includes the definition, purpose, the units, and the frequency of the measurement. As an initial step, each country is asked to evaluate its progress towards achieving the RIAP objectives, together with its National Immunization Technical Advisory Group (NITAG). PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases then evaluates advances at the regional level, and progress reports are prepared annually for PAHO's Executive Management, as well as at the end of every biennium for PAHO's Governing Bodies. A final evaluation of the plan will be completed to determine the strengths and weaknesses of its implementation. The information needed will be obtained from the following sources: a) reports by the countries' ministries of health; b) PAHO-WHO/UNICEF's Joint Reporting Form (JRF) on immunization; and c) the compilation of research and other available sources.

This progress report provides an overview of the Region’s progress towards the objectives of the RIAP in 2017 and highlights the challenges that the Region is still facing; this report will be reviewed by the TAG.

The RIAP’s vision is that the population of the Region of the Americas is protected against vaccine-preventable diseases and the Member States promote universal and equitable access to immunization services, with safe and affordable vaccines throughout the life cycle.

The following graphic shows the relationship among the RIAP’s principles and objectives.



Update on progress by Strategic Line of Action

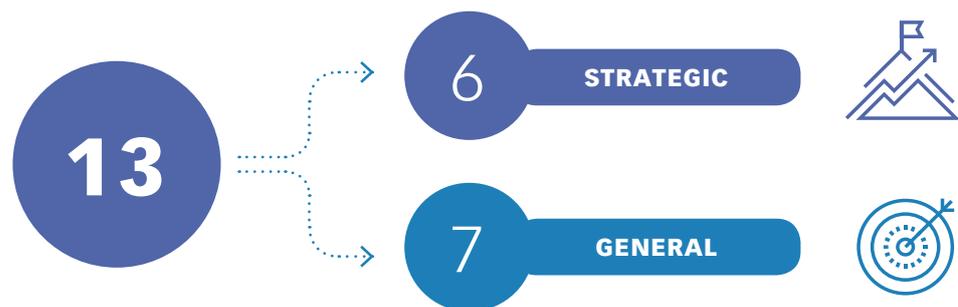
The RIAP established 13 objectives (7 general and 6 strategic) and 29 indicators. As of December 2017, the situation in the Region was as follows: 15 indicators are on track, 6 are in progress, and 8 indicators are off track and will require a concerted effort and urgent action to achieve the stated targets.

REGIONAL IMMUNIZATION ACTION PLAN

Strategic Lines of Action



Objectives



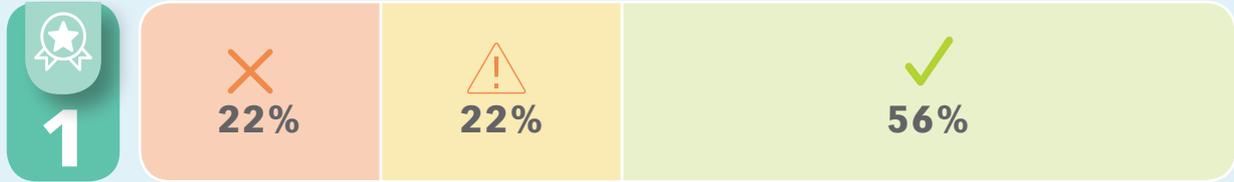
Indicators

29
TOTAL

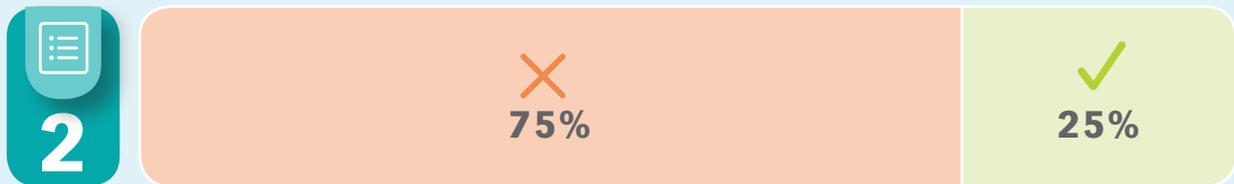


RIAP 2017 PROGRESS BY STRATEGIC OBJECTIVE

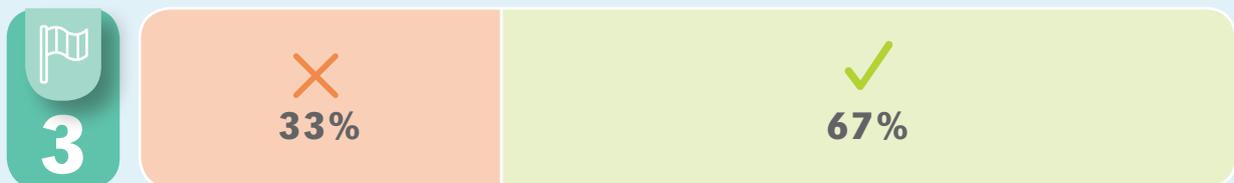
Sustain the achievements (n=9)



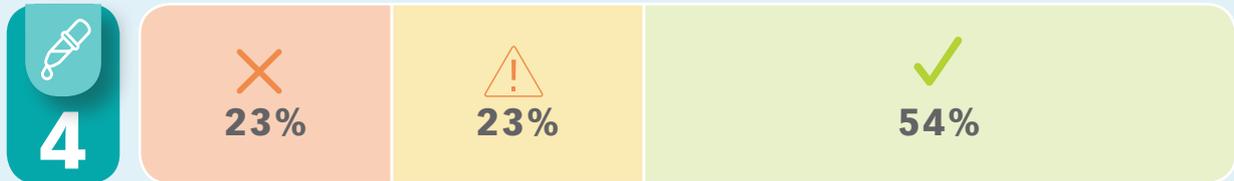
Complete the unfinished agenda in order to prevent and control vaccine-preventable diseases (n=4)

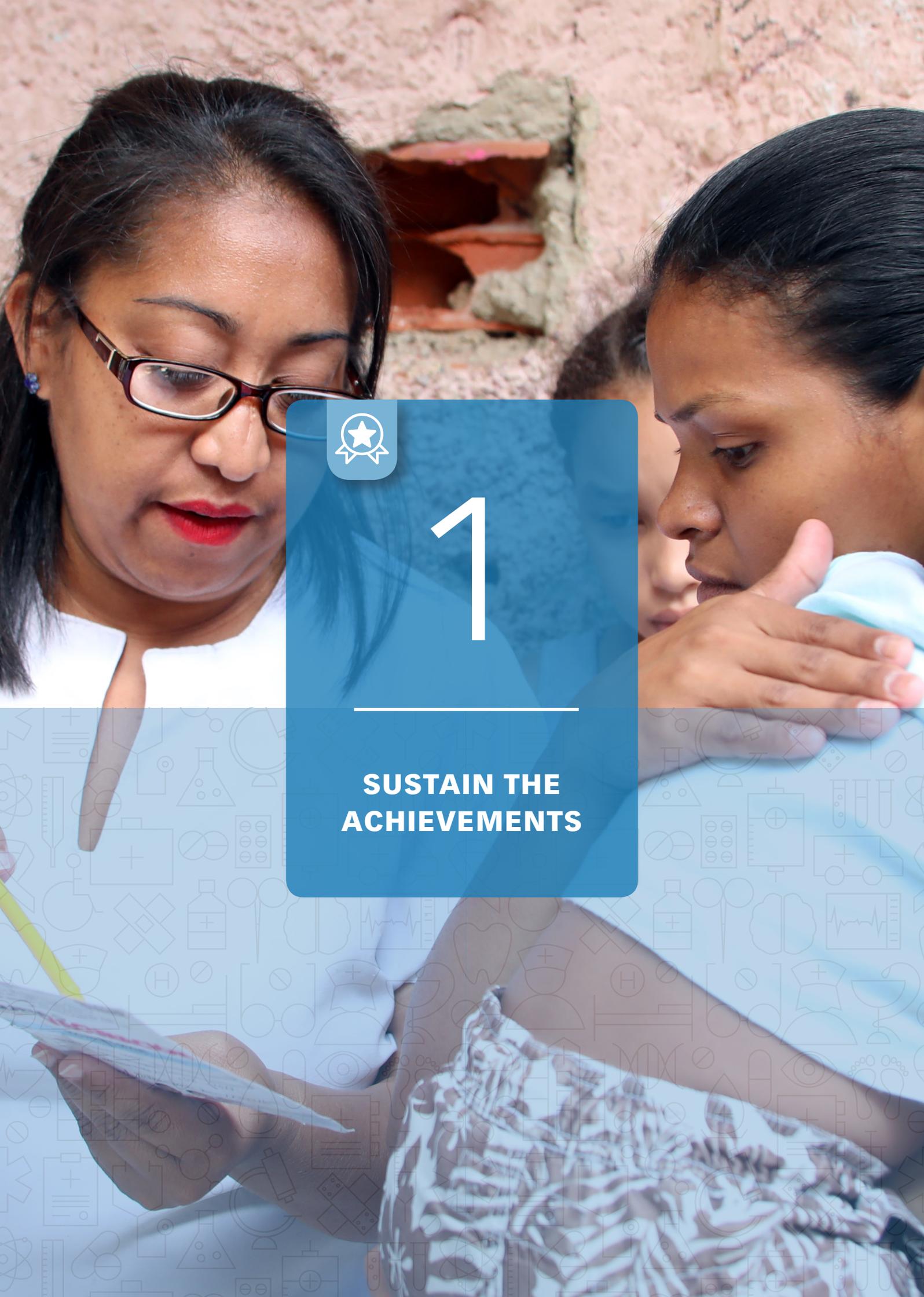


Tackle new challenges in the introduction of vaccines and assess their impact (n=3)



Strengthen health services for effective vaccine administration (n=13)





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**SUSTAIN THE
ACHIEVEMENTS**



GENERAL OBJECTIVE 1.1

For 2017, the Region had not met its goal of $\geq 95\%$ polio-3 coverage because only 10 countries and territories had met the target at the national level. At the subnational level, vaccination coverage is not uniform among municipalities.

Regarding surveillance in the last five years, the Region has achieved a notification rate of ≥ 1 case of acute flaccid paralysis (AFP) per 100,000 children aged <15 years; the percentage of cases with adequate stool samples obtained within 14 days of the onset of paralysis, which should reach at least 80%, has ranged from 73% to 79% over 10 years and is 75% for the last year. The percentage of AFP cases investigated within 48 hours of notification, which should reach at least 80%, has ranged from 61% to 91%, and is 80% for the last 52 weeks.¹ In 2017, only Mexico and Paraguay met these three indicators.

In order to evaluate the risk of poliovirus importation to the Americas, PAHO developed a risk analysis methodology with four components: i) immunization coverage, as a proxy for the level of immunity in the population; ii) AFP surveillance; iii) outbreaks, including history of circulating vaccine-derived poliovirus (cVDPV) or any other vaccine-preventable disease and availability of an outbreak response plan; and iv) others that include population and health-system specific factors that could influence national capacity to detect and respond to wild poliovirus (WPV) importation or cVDPV events. The result of this assessment showed that three countries (Guatemala, Haiti, and Venezuela) were at very high risk for polio importation, five countries were at high risk, nine countries were at medium risk, and three countries were at low risk.

REGIONAL CONTAINMENT STATUS

Aligned with the World Health Organization (WHO) Global Action Plan to minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of oral polio vaccine use (GAPIII), the Regional Plan for Containment of Poliovirus in the Americas is being implemented in three phases linked to the milestones in the Global Polio Eradication Initiative (GPEI). The regional plan is conducted in 44 countries and territories following WHO guidelines, Regional Certification Commission (RCC) orientations, and PAHO technical support.

In December 2017, the RCC validated five updated reports. All countries have presented at least one report on phase I of GAPIII: WPV2/VDPV2/OPV2/Sabin2 containment. The reports from Bolivia, the Caribbean sub region, Cuba, and Honduras have been fully validated by RCC for the survey process, inventory, and identification of infectious and potentially infectious WPV2/VDPV2/OPV2/Sabin2; 18 country reports have been validated for WPV2/VDPV2 infectious and potentially infectious materials, and 13 country reports for Sabin2 infectious materials. Seven countries of the Region have designated 32 poliovirus-essential facilities: Brazil (2), Canada (4), Cuba (1), Chile (3), Mexico (1), Panama (1), and United States (20). Two of these countries have nominated a National Authority for Containment (NAC).

¹ Last 52 weeks, ending in epidemiological week 26 (1 July 2017).

USE OF FRACTIONAL IPV DOSES (fIPV)

In September 2017, at the 29th Pan American Sanitary Conference and 69th Session of the WHO Regional Committee for the Americas, all Member States passed the Resolution CSP29.R16 recognizing the situation of global demand and limited supply of inactivated polio vaccine (IPV), as well as recognizing PAHO's Revolving Fund as the strategic cooperation mechanism most suitable to provide access to vaccines like IPV. The Member States also called for PAHO to:

- Negotiate extraordinarily for the best possible price for IPV procurement in the Region of the Americas and, if necessary, adjust the terms and conditions of the Revolving Fund for this occasion only, to address the special circumstances currently existing and provide the supply of IPV for the Region of the Americas;
- Maintain coordination with the GPEI throughout this process in alignment with the Polio Eradication and Endgame Strategic Plan 2013–2018;
- Maintain a dialogue with partners and global IPV producers to accelerate and ensure the capacity to produce the necessary doses of IPV for the Region of the Americas; and
- Continue to support the Member States in their preparations to use fIPV.

IPV SUPPLY SITUATION AND FORECAST FOR 2018–2019

As requested by Member States, PAHO conducted extraordinary negotiations in 2017, which resulted in an additional 690,000 doses of IPV-10. Negotiations resumed in December 2017 and are ongoing.

Recognizing that the ongoing global IPV supply constraints could still affect countries of the Region, the TAG recommends for all countries of the Region – without exception – to be prepared for how to respond in case of a shortage. In case IPV is not available, children should receive the bivalent oral polio vaccine (bOPV) as the first or second dose of the schedule, and receive IPV as a later dose, always respecting the minimum interval of four weeks between doses of polio vaccine. It is important that health care workers always clearly record what vaccine was given to each child.

GENERAL OBJECTIVE 1.2

Maintain elimination of measles, rubella, and CRS



MEASLES EPIDEMIOLOGICAL SITUATION IN THE AMERICAS

Between epidemiological weeks 26 and 52 of 2017, Venezuela reported 727 confirmed measles cases. Children under 5 years of age were the most affected age group, followed by children aged 6–15 years. The outbreak affected four states, with most of the cases identified in the state of Bolívar. Measles virus genotype D8 was identified in specimens collected from cases. Measles cases reported in Argentina (3), Canada (45), and the United States (120) were either imported or import-associated. The age of cases ranged between 6 months and 49 years old. The identified measles virus genotypes were D8, D4, and B3.

National rapid response teams were implemented in response to the aforementioned measles outbreaks. The necessary control measures taken included vaccination of susceptible individuals or of individuals at high risk such as health care workers, active case finding of suspected measles and rubella cases, contact tracing and follow-up, cross-border coordination in frontier municipalities (Brazil, Colombia, and Venezuela), and dissemination of national epidemiological alerts and media messages.

FIGURE 1. DISTRIBUTION OF CONFIRMED MEASLES CASES BY COUNTRIES, THE AMERICAS, 2017

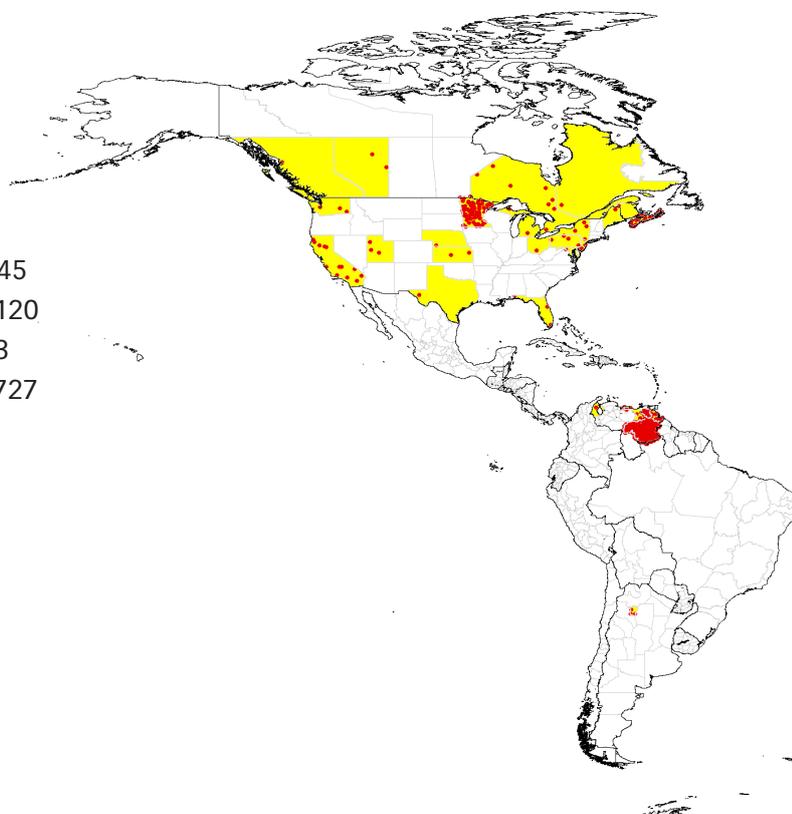
2017

CAN=45

USA=120

ARG=3

VEN=727



Sources: Surveillance country reports sent to the Immunization Unit of PAHO/WHO and by the Ministry of Popular Power of Venezuela

VACCINATION WITH MMR

In 2017, regional coverage with the first dose of the measles, mumps, and rubella vaccine (known as MMR) was 89%. However, this figure disguises a highly heterogeneous situation between countries and between municipalities within countries. The regional coverage with the second dose of the MMR vaccine was 62%, falling short of the target of 95% or higher. To reduce the accumulation of susceptible individuals caused by these low coverage levels, many countries in Latin America and the Latin Caribbean continue to conduct follow-up campaigns every four or five years.

QUALITY OF EPIDEMIOLOGICAL SURVEILLANCE SYSTEMS

During the past five years (2012–2016), fulfillment of the following indicators was lower than 80% (the level established as a minimum): percentage of sites reporting weekly, percentage of samples submitted within five days, and percentage of laboratory results reported within four days. There was progress in the percentage of cases with adequate investigation, which increased from 79% and 77% in 2012 and 2013, respectively, to 82% in 2014–2016; and in the percentage of cases with adequate serum samples, which exceeded 80% throughout the period. Regarding the rate of 2 suspected cases of measles/rubella per 100,000 population, the target was met in the Americas throughout the post-elimination era, from 2003 until 2015, with rates ranging from 3.5 to 10.1 per 100,000. However, since 2011 this indicator has been seeing a steady downward trend, and in 2016 the rate dropped to 1.9 cases per 100,000. This pattern reflects the many challenges that countries face in maintaining sensitive, high-quality surveillance systems in scenarios of epidemiological crisis, due to the presence of other emerging febrile diseases (Zika in particular), which could be masking suspected cases of measles and rubella.

PLAN OF ACTION FOR THE SUSTAINABILITY OF MEASLES, RUBELLA, AND CONGENITAL RUBELLA SYNDROME (CRS) ELIMINATION FOR THE PERIOD 2018–2023

During the 29th Pan American Sanitary Conference in September 2017, the Ministers of Health approved a Plan of Action for the sustainability of measles, rubella, and congenital rubella syndrome (CRS) elimination for the period 2018–2023, with the purpose of protecting this important public health gain. The Plan has four strategic lines of action:

- 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
- Strategic line of action 2: Strengthen the capacity of epidemiological surveillance systems for measles, rubella, and congenital rubella syndrome
- Strategic line of action 3: Develop national operational capacity to maintain measles and rubella elimination
- 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

GENERAL OBJECTIVE 1.3



Maintain achievements reached in vaccine-preventable disease control

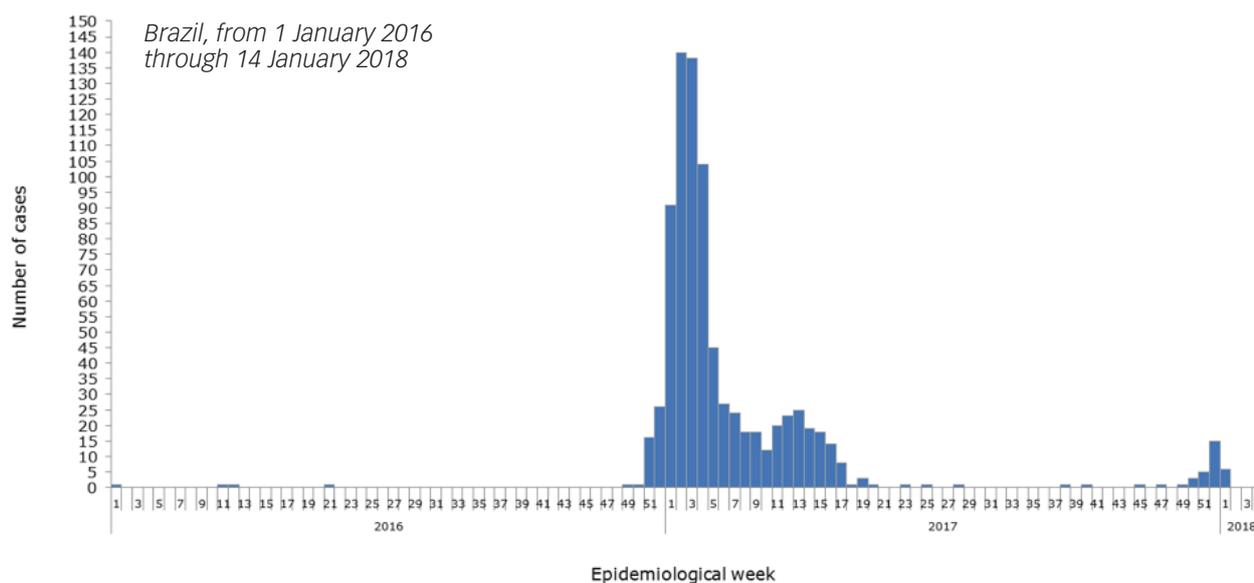
ELIMINATION OF HEPATITIS B PERINATAL TRANSMISSION

Countries in the Region have focused on the prevention of perinatal transmission of hepatitis B mainly through routine childhood hepatitis B immunization. As of 2017, 24 of 51 countries and territories have adopted the universal birth dose vaccination policy, representing ~80% of the birth cohort in the American region. Regional coverage in the Americas in 2017 for the third dose of hepatitis B vaccine (pentavalent) was 88% among children under 1 year of age, and birth dose coverage was 69%.

YELLOW FEVER

From 1 July 2017 through 14 January 2018, 35 confirmed human cases of yellow fever were reported in Brazil (Figure 2), including 20 deaths, and 145 suspected cases which are under investigation. In early 2018, the number of confirmed human cases of yellow fever has tripled in Brazil. Confirmed cases were notified in the states of São Paulo (20 cases, including 11 deaths), Rio de Janeiro (3 cases, including 1 death), and Minas Gerais (11 cases, including 7 deaths), and in the Federal District (1 fatal case). All confirmed cases are likely to have acquired the infection in geographic locations where there are documented epizootics in non-human primates.

FIGURE 2. DISTRIBUTION OF CONFIRMED YELLOW FEVER HUMAN CASES BY EPIDEMIOLOGICAL WEEK



Source: <http://www.who.int/csr/don/22-january-2018-yellow-fever-brazil/en/>

The header features a light blue background with a repeating pattern of white medical icons, including a DNA double helix, a microscope, a pill, a footprint, a shield, a water drop with a plus sign, a bar chart, and a human eye.

Although epizootics were reported throughout 2017, there was a significant increase from September 2017. The high number of epizootics indicates a high level of circulation of the virus in ecosystems favorable for transmission. From 1 July 2017 through 14 January 2018, there were 2,442 epizootics in non-human primates reported in 21 federal entities, including areas that were previously not considered to be at risk for yellow fever.

Since September 2017, when yellow fever was confirmed in human cases and epizootics in São Paulo, national authorities have been intensifying vaccination activities through routine and preemptive immunization campaigns. Brazilian health authorities have expanded the yellow fever vaccine recommendations for all residents aged >9 months to the states of Bahia, Espírito Santo, Rio de Janeiro, and São Paulo. WHO also updated vaccine recommendations for travelers to include all areas in Espírito Santo, Rio de Janeiro, and São Paulo, and certain coastal areas in Bahia.

In early January 2018, to reduce the risk of a large yellow fever outbreak, the Brazilian Ministry of Health announced plans to conduct a mass yellow fever vaccination campaign, which will include both standard (0.5 mL) and fractional (0.1 mL) doses. The campaigns took place in São Paulo and Rio de Janeiro from 25 January through 17 February, and in Bahia from 19 February through 3 March. The aim was to vaccinate 21.8 million people (16.5 million with the fractional dose and 5.3 million with the standard dose) who live in 77 municipalities in these three states.

STRATEGIC OBJECTIVE 1.1

All countries make a commitment to vaccination as a priority for health and development



National legislation, technical advisory groups, and an annual immunization plan are some of the aspects that demonstrate a country has a commitment with immunization.

In 2017, 28 countries have a legislative or regulatory basis for their immunization program; 16 countries report having the support of a well-functioning NITAG; and 41 countries have an up-to-date annual immunization plan that includes operational and financial plans.

STRATEGIC OBJECTIVE 1.2

Individuals and communities understand the value of the vaccines



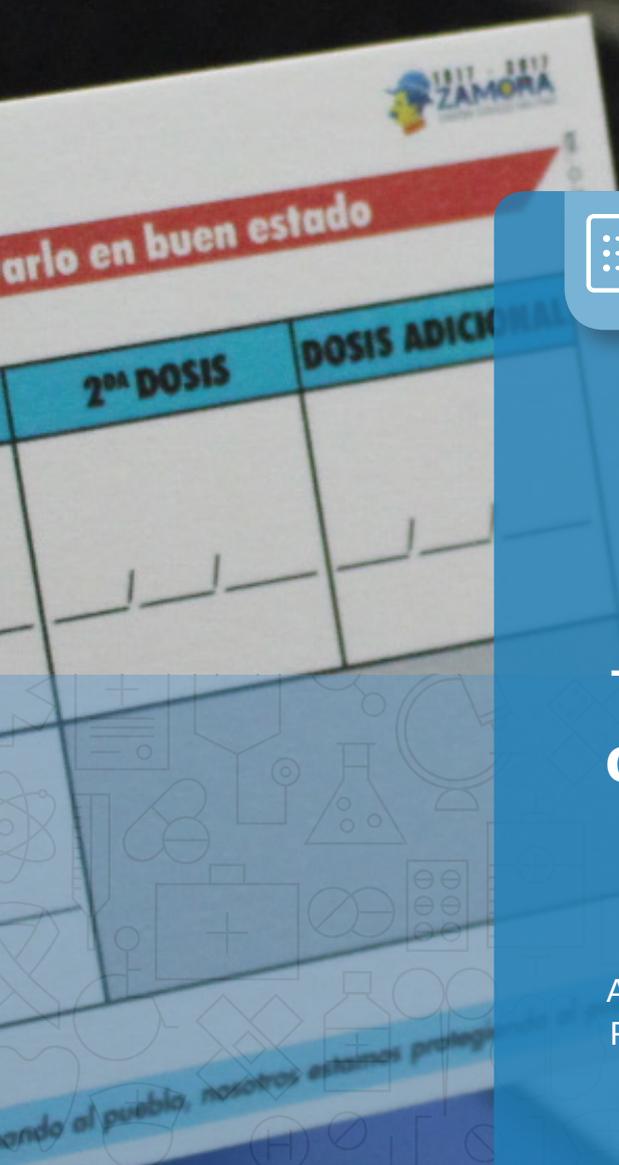
Vaccination Week in the Americas (VWA) celebrated 15 years in 2017 and was launched on 24 April in Mexico City, Mexico.

2017's slogan was "#GetVax to celebrate a healthy tomorrow!" encouraging people and their families to get vaccinated today and enjoy good health tomorrow, given that vaccines offer protection against highly contagious, debilitating and potentially deadly diseases. The VWA opening ceremony took place in the main courtyard of Mexico's Secretary of Health, located in Mexico City. The Secretary of Health, Jose Narro, and PAHO Director, Carissa F. Etienne, participated along with other authorities. A second launch event took place on 29 April, when an indigenous village in the Brazilian state of Rondônia, known as Linea 9 Amaral and belonging to the indigenous group Suri, hosted a regional launch of Vaccination Week to bring vaccines to a priority group of this initiative. The activity took place under the framework of celebrations for Vaccination Month of Indigenous People, organized by Brazil.

STATUS OF INDICATORS

General (GO) and Strategic Objectives (SO)	Indicator	Status	
GO 1.1 Maintain the Region's status as polio-free	GO 1.1.1 Number of countries and territories reporting cases of paralysis due to wild poliovirus or the circulation of vaccine-derived poliovirus (cVDPV) in the last year Baseline: 0 in 2013 Goal: 0 in 2020	As of 2017, 0/51 countries or territories in the Region reported cases of paralysis due to wild poliovirus or the circulation of vaccine-derived poliovirus.	 ON TRACK
GO 1.2 Maintain elimination of measles, rubella, and CRS	GO 1.2.1 Number of countries and territories in which endemic transmission of measles or rubella virus has been reestablished Baseline: 0 in 2013 Goal: 0 in 2020	As of 2017, 0/51 countries or territories in the Region reported endemic cases of measles or rubella virus.	 ON TRACK
GO 1.3 Maintain achievements reached in vaccine-preventable disease control	GO 1.3.1 Number of countries and territories that meet the indicators for monitoring the quality of epidemiological surveillance of acute flaccid paralysis (AFP) cases Baseline: 2 in 2013 Goal: 13 in 2020	As of 2017, 2/51 countries or territories in the Region meet the indicators for monitoring the quality of epidemiological surveillance of acute flaccid paralysis (AFP) cases.	 OFF TRACK
	GO 1.3.2 Number of countries and territories that meet the indicators for monitoring the quality of epidemiological surveillance of suspect measles, rubella, and congenital rubella syndrome cases Baseline: 9 in 2013 Goal: 18 in 2020	As of 2017, 18/51 countries or territories in the region meet the indicators for monitoring the quality of epidemiological surveillance of suspect measles, rubella, and congenital rubella syndrome cases.	 ON TRACK
	GO 1.3.3 Number of countries and territories that administer hepatitis B vaccine to newborns during the first 24 hours Baseline: 18 in 2013 Goal: 25 in 2020	As of 2017, 24 countries and territories have adopted the universal birth dose vaccination policy.	 ON TRACK

General (GO) and Strategic Objectives (SO)	Indicator	Status	
SO 1.1 All countries make a commitment to vaccination as a priority for health and development	SO 1.1.1 Number of countries and territories that have a legislative or regulatory basis for their immunization program Baseline: 28 in 2013 Goal: 32 in 2020	As of 2017, no additional countries have approved legislations for their immunization programs.	 OFF TRACK
	SO 1.1.2 Number of countries and territories having an immunization technical advisory committee that meets WHO's criteria for good operation Baseline: 15 in 2013 Goal: 18 in 2020	As of 2017, 16 countries report having the support of a well-functioning National Immunization Technical Advisory Group (NITAG).	 IN PROGRESS
	SO 1.1.3 Number of countries and territories that have a current annual immunization plan of action that includes operational and financial plans Baseline: 25 in 2013 Goal: 35 in 2020	As of 2017, 41 countries have an up-to-date annual immunization plan that includes operational and financial plans.	 ON TRACK
SO 1.2 Individuals and communities understand the value of the vaccines	SO 1.2.1 Number of countries and territories that report having monitored public satisfaction with vaccination during Vaccination Week in the Americas or other activities Baseline: 0 in 2013 Goal: 15 in 2020	As of 2017, 4 countries and territories have reported using Vaccination Week as a platform to monitor public awareness, acceptance, and satisfaction during Vaccination Week in the Americas in 2017.	 IN PROGRESS



2

COMPLETE THE UNFINISHED AGENDA

IN ORDER TO PREVENT
AND CONTROL VACCINE-
PREVENTABLE DISEASES

GENERAL OBJECTIVE 2.1

Eliminate neonatal tetanus as a public health problem in all countries



Despite having implemented the recommended strategies for the elimination of maternal and neonatal tetanus (MNT) since 2003, Haiti had been the only country in the Region that had not achieved this goal. A literature review and field visits, conducted in June 2016, concluded that there was a likelihood of MNT elimination in Haiti. To confirm MNT elimination, a neonatal tetanus-related neonatal mortality survey was conducted in the Southern Department, with the highest risk for MNT in the country, after the pre-validation.

A total of 10,516 households were surveyed and 2,302 live births were examined. Maternal coverage by tetanus–diphtheria (Td2) vaccine was 53% (card + history). The proportion of deliveries in a health facility was 45%. The proportion of mothers who applied substances to the umbilical cord was 31%. As no cases of tetanus were identified in the 44 neonatal deaths recorded through a survey deemed of good quality, neonatal tetanus was considered eliminated in the Southern Department for the period 1 May 2016 to 30 April 2017. Therefore, MNT was considered eliminated in Haiti for the same period.

GENERAL OBJECTIVE 2.2

Meet DTP vaccination coverage targets at all levels



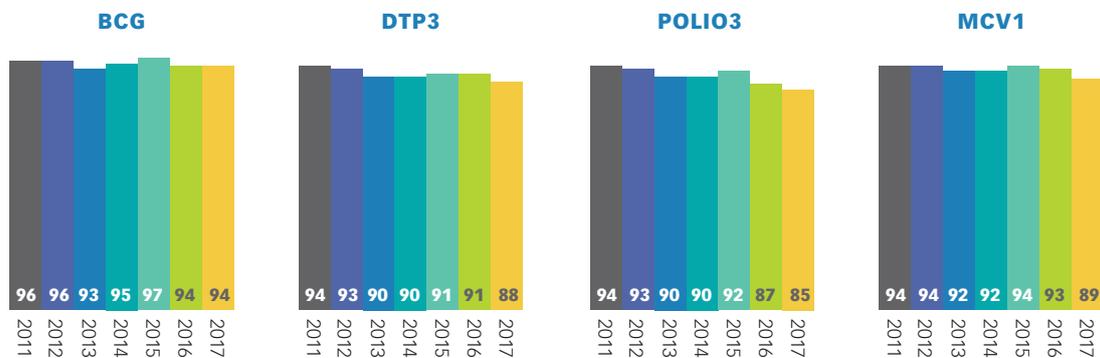
Regional immunization coverage with BCG for 2017 was 94%; three doses of diphtheria–tetanus–pertussis–containing vaccine (DTP3) was 88%; polio3 was 88%; pneumococcal conjugate vaccine (PCV3) was also 88%; while dose 1 of the measles-containing vaccine (MCV1) was 89% among children 1 year old, showing a slight decrease compared with 2016 (Figures 3 and 4).

In 2017, 11 countries and territories reported national average coverage of at least 95% with DTP3 in children under 1 year, compared with 13 in 2016. Inequality in immunization coverage persists, both between countries and within each country. In 2017, out of a total of nearly 15,000 municipalities of Latin America and the Caribbean, 54% reported vaccination coverage with DTP3 below 95%, and just 13 countries reported DTP3 coverage of at least 80% in each district.

FIGURE 3. REGIONAL COVERAGE BY VACCINE, 2017



FIGURE 3. REGIONAL VACCINATION COVERAGE IN CHILDREN <1 YEAR, 2011–2017



	BCG	DTP3	POLIO3	MCV1
2011	96	94	94	94
2012	96	93	93	94
2013	93	90	90	92
2014	95	90	90	92
2015	97	91	92	94
2016	94	91	87	93
2017	94	88	88	89

STRATEGIC OBJECTIVE 2.1

Immunization benefits extend equitably to all people and social groups



One area for impact is ensuring that immunization reaches everyone “no matter where they are born, who they are, or where they live.”

It is for this reason that, in addition to an analysis of aggregate municipal data, PAHO has promoted analysis of inequalities in immunization. As of 2017, no country in the Region is reporting coverage by income or other subgroups that make it possible to monitor vaccination equity. However, the countries have been working on the methodology, with two regional training workshops in which 21 countries were trained on the methodology.

STATUS OF INDICATORS

General (GO) and Strategic Objectives (SO)	Indicator	Status	
GO 2.1 Eliminate neonatal tetanus as a public health problem in all countries	GO 2.1.1 Number of countries and territories with municipalities reporting rates of neonatal tetanus above 1/1,000 live births Baseline: 1 in 2013 Goal: 0 in 2020	As of 2017, 0/51 countries or territories reported municipalities reporting rates of neonatal tetanus above 1/1,000 live births.	 ON TRACK
GO 2.2 Meet vaccination coverage targets at all levels	GO 2.2.1 Number of countries and territories reporting national average coverage of at least 95% with three doses of DTP vaccine in children under 1 year Baseline: 19 in 2013 Goal: 35 in 2020	As of 2017, 11 countries have reached at least 95% of coverage with DTP3.	 OFF TRACK
	GO 2.2.2 Number of countries and territories reporting coverage of at least 80% in each district or equivalent with three doses of DTP vaccine in children under 1 year Baseline: 12 in 2013 Goal: 35 in 2020	As of 2017, 13 countries report DTP3 coverage of at least 80% in each district.	 OFF TRACK
SO 2.1 Immunization benefits extend equitably to all people and social groups	SO 2.1.1 Number of countries and territories reporting coverage by income quintile or other subgroups that make it possible to monitor vaccination equity Baseline: 0 in 2013 Goal: 15 in 2020	As of 2017, there is no country in the Region reporting coverage by income quintile or other subgroups that make it possible to monitor vaccination equity.	 OFF TRACK



3

**TACKLE NEW
CHALLENGES**
IN THE INTRODUCTION
OF VACCINES AND ASSESS
THEIR IMPACT

GENERAL OBJECTIVE 3.1

Introduce vaccines in accordance with technical and programmatic criteria



Significant progress has been made in the introduction of new vaccines during recent years.

To minimize the risk of vaccine-derived polioviruses, especially for type 2, and to boost population immunity and accelerate the eradication of polio, all countries successfully switched from the trivalent (tOPV) to the bivalent oral polio vaccine (bOPV) and introduced the inactivated polio vaccine (IPV), meeting the timelines set for the global switch. Currently 35 countries and territories have introduced the pneumococcal conjugate vaccine (PCV), 31 have introduced the human papillomavirus vaccine (HPV), and 20 have introduced the rotavirus vaccine to their routine vaccination schedule.

STRATEGIC OBJECTIVE 3.1

Decision-making is evidence-based and impact assessments ensure that policies are adopted to maximize the benefits of vaccination



Since the introduction of PCV and rotavirus vaccine, countries have been carrying out effectiveness and impact studies with technical cooperation from PAHO. As of 2017, 16 countries and territories have conducted studies prior to the introduction of new vaccines, and 13 countries and territories have conducted studies after the introduction of a vaccine (in 2017, Dominican Republic conducted a PCV effectiveness study).

In December 2016, PAHO published a systematic review aimed at summarizing evidence of impact and effectiveness of PCV on hospitalizations and deaths due to pneumonia, meningitis, and invasive pneumococcal disease (IPD) among under-5 children in Latin America and the Caribbean (LAC).² The search was conducted using the Medline, WoS, Lilacs, Scopus, and Central databases, as well as on gray literature published in any language from 2009 to January 2016. Inclusion criteria considered studies addressing the outcomes of interest among children in the target age group, and the following designs: randomized trials, cohort or case-control studies, interrupted time series studies with at least three data points before and after the intervention, and before-after studies.

The screening identified 1,085 citations: 892 from databases and 193 from other sources. Of these, 22 were included for analysis: 15 focused on PCV10 and 7 on PCV13. Studies were from Argentina, Brazil, Chile, Nicaragua, Peru, and Uruguay. A descriptive analysis was performed based on effectiveness measurements provided or derived from the data available in each study and sensitivity analysis. Effectiveness estimates ranged from 8.8% to 37.8% for hospitalizations due to X-ray-confirmed pneumonia; 7.4%–20.6% for clinical pneumonia hospitalizations; 13.3%–87.7% for meningitis hospitalizations; and 56%–83.3% for IPD hospitalization—varying by age, outcome definition, type of vaccine, and study design. The main conclusions of the systematic review were that the available evidence indicates significant impact for both PCV10 and PCV13 in the outcomes studied. There was no evidence of the superiority of one vaccine over the other regarding impact, effectiveness on hospitalization, and mortality outcomes in children aged <5 years. These results provide immunization programs with information for decision-making on PCV use.

Similar results were found in another global systematic review, reported in “Pneumococcal conjugate vaccine product assessment;” a significant reduction in IPD caused by vaccine serotypes was observed following PCV10 and PCV13.³ In addition, most published studies have demonstrated PCV impact on mortality following the routine use of both available products in a range of high and low-income countries. In summary, the global review supports the findings from the systematic review in LAC.

2 de Oliveira LH, Camacho LAB, Coutinho ESF, Martinez-Silveira MS, Carvalho AF, et al. Impact and effectiveness of 10 and 13-valent pneumococcal conjugate vaccines on hospitalization and mortality in children aged less than 5 years in Latin American countries: a systematic review. PLOS ONE 2016;11(12): e0166736. <https://doi.org/10.1371/journal.pone.0166736>

3 O'Brien K. et al. Pneumococcal conjugate vaccine product assessment. April 2017. Available at <https://www.jhsph.edu/ivac/wp-content/uploads/2018/05/pcv-product-assessment-april-25-2017.pdf>

STATUS OF INDICATORS

General (GO) and Strategic Objectives (SO)	Indicator	Status	
GO 3.1 Introduce vaccines in accordance with technical and programmatic criteria	GO 3.1.1 Number of countries and territories that have introduced one or more new vaccines into their national vaccination schedules Baseline: 32 in 2013 Goal: 40 in 2020	As of 2017, 43 countries and territories have introduced one or more new vaccines (rotavirus, pneumococcus, human papilloma virus [HPV]) into their national vaccination schedule.	 ON TRACK
SO 3.1 Decision-making is evidence-based and impact assessments ensure that policies are adopted to maximize the benefits of vaccination	SO 3.1.1 Number of countries and territories that have conducted studies prior to the introduction of a vaccine (e.g., cost-effectiveness analysis) Baseline: 14 in 2013 Goal: 20 in 2020	As of 2017, 16 countries and territories have conducted studies prior to the introduction of new vaccines.	 IN PROGRESS
	SO 3.1.2 Number of countries and territories that have conducted studies after the introduction of a vaccine (e.g., impact assessments, operational review, etc.) Baseline: 9 in 2013 Goal: 15 in 2020	As of 2017, 13 countries and territories have conducted studies after the introduction of a vaccine.	 ON TRACK



4

**STRENGTHEN
HEALTH SERVICES**

FOR EFFECTIVE VACCINE
ADMINISTRATION

GENERAL OBJECTIVE 4.1

Exceed the expected results proposed by the Post-2015 Agenda for reductions in infant mortality and maternal mortality



MATERNAL IMMUNIZATION

The establishment of a routine maternal immunization platform represents a new paradigm that includes the universal use of influenza, tetanus, and pertussis vaccines, and consideration of the use of other relevant vaccines in the near future. Maternal immunization has the potential to impact early childhood morbidity, and in some cases, mortality. Infections such as respiratory syncytial virus (RSV), influenza, and pertussis are associated with adverse outcomes in young infants—i.e. prior to commencement of the primary infant immunization series.

To date, in all LAC countries, the tetanus–diphtheria-containing vaccine is recommended for all women of childbearing age; in 33 LAC countries influenza immunization is indicated for pregnant women; and the pertussis-containing vaccine is indicated for pregnant women in 14 LAC countries. The TAG recommends this vaccine in case of outbreak situations.

STRATEGIC OBJECTIVE 4.1

Supplies are available for the immunization program on a sustainable basis with national resources



As of 2017, 33 countries and territories in the Americas can fund their own programs with domestic resources.

In addition to ensuring financial sustainability, countries should ensure the quality of vaccines in their immunization programs. In LAC, 100% of the birth cohort has access to an adequate vaccine supply of quality vaccines, either because the vaccines are purchased through the PAHO Revolving Fund, or because countries have developed the capacity to monitor and assure the safe use of vaccines through their regulatory authority.

STRATEGIC OBJECTIVE 4.2

Strengthened immunization services are part of comprehensive, well-run health services



DROPOUT RATE

In the Region of the Americas, 93% of children under 1 year were immunized for DTP1 while 88% were immunized for DTP3, with an overall dropout rate of 5%. In Brazil, Dominican Republic, Panama, Suriname and Venezuela, the dropout rate was greater than 10%. The dropout rate is a measure of the strength of a health and immunization system, demonstrating its potential to reach children with the third dose in the series, and countries should define specific strategies to address factors contributing to incomplete infant vaccination.

DATA QUALITY

Countries have made great strides in strengthening their vaccination information systems. With support from PAHO, they have worked to improve data quality, availability, and utilization. To strengthen the capacity of countries for analyzing data, in 2013, PAHO developed and piloted the toolkit “Tools for monitoring coverage of integrated public health interventions,” which has since been used to train 442 health workers from eight countries in the Region.⁴

4 <http://iris.paho.org/xmlui/bitstream/handle/123456789/34510/9789275119822-eng.pdf>

ELECTRONIC IMMUNIZATION REGISTRY (EIR) SYSTEMS

As of 2017, 14 countries currently use EIR systems at the national, subnational, and/or local levels and 9 countries are planning, designing, developing, or implementing these systems.

PAHO has worked closely with countries to develop a document of practical considerations to support countries in assessment of the feasibility of EIR system introduction, development, and implementation, considering their national eHealth strategies.⁵

Despite countries' efforts, problems persist regarding the availability, quality, and use of vaccination data to monitor EPI performance indicators. Countries face the challenges of ensuring the availability of systematic, complete, and consistent data that respond to the EPI's need for evaluation and of strengthening the collection, analysis, and use of data at all levels of responsibility, starting by ensuring that information systems and tools used (both paper and electronic) are efficient and adaptable to different types of user.

SUPPLY AND COLD CHAIN OPERATIONS

Analysis of data from PAHO–WHO/UNICEF JRF country reports on cold chain indicators for 2017 shows that 17 countries in the Region experienced stock-outs (for PCV, rotavirus, BCG, DTP, measles, yellow fever, HPV, IPV, polio, tetanus–diphtheria–pertussis [Tdap], hepatitis B). Data suggest that several countries need to evaluate the management inventory system to assess their current stock management system, or to consider installing a digital inventory management information system. PAHO offers a free version of such software—Vaccination Supplies Stock Management (VSSM). As of 2017, VSSM is installed in 5 countries, and 12 countries have been trained in its use. Three countries use the web version of VSSM, and one country has expanded the use of the web VSSM to other health services for managing stocks of other medical supplies (pharmaceuticals and medical devices).

Since 2014, PAHO has supported four effective vaccine management (EVM) assessments in Bolivia, Guyana, Honduras, and Nicaragua. (UNICEF supported the EVM assessment in Haiti). All four PAHO-supported countries achieved EVM scores of >80%, with Honduras earning the highest at 97%. This is a significant achievement, considering that 80% is the minimum score established by EVM. These evaluations also revealed the need to replace aging cold-chain equipment and the vehicles needed to distribute vaccines. Countries will be responsible for allocating financial resources to replace the equipment. Decisions to purchase more equipment or to increase supply chain operations, to ensure that vaccine or supply stock-outs are avoided in all facilities, will depend upon economic and logistical evaluations.

5 http://iris.paho.org/xmlui/bitstream/handle/123456789/34865/9789275119532_eng.pdf

STATUS OF INDICATORS

General (GO) and Strategic Objectives (SO)	Indicator	Status	
GO 4.1 Achieve the expected results proposed by the Post-2015 Development Agenda for reductions in infant mortality and maternal mortality	GO 4.1.1 Number of countries and territories whose immunization schedules include vaccination of pregnant women against influenza and/or with tetanus–diphtheria vaccine, as tracers of maternal vaccination Baseline: 27 in 2013 Goal: 35 in 2020	As of 2017, influenza vaccination is indicated for pregnant women in 33 countries of the Region.	 ON TRACK
	GO 4.1.2 Number of countries and territories that offer other preventive interventions integrated with vaccination Baseline: 4 in 2013 Goal: 20 in 2020	As of 2017, 9 countries offer preventive interventions integrated with vaccination; for example: deworming, iron and folic acid, vitamin A, etc.	 IN PROGRESS
SO 4.1 Supplies are available for the immunization program on a sustainable basis with national resources	SO 4.1.1 Number of countries and territories that finance more than 90% of their immunization programs with national resources Baseline: 27 in 2013 Goal: 35 in 2020	As of 2017, 33 countries and territories in the Americas can fund their own programs with domestic resources.	 ON TRACK
	SO 4.1.2 Percentage of birth cohort in Latin America and the Caribbean that has access to an adequate vaccine supply of quality vaccines Baseline: 100 in 2013 Goal: 100 in 2020	As of 2017, 100% of the birth cohort in Latin America and the Caribbean has access to an adequate vaccine supply of quality vaccines. The Revolving Fund (RF) considers that 100% of birth cohort in the region is accessing supply of quality through participation in the RF and/or local production in countries (e.g. Argentina, Brazil, Mexico) with National Regulatory Agencies (NRAs) competent and efficient in performing regulatory functions recommended by PAHO/WHO.	 ON TRACK

General (GO) and Strategic Objectives (SO)	Indicator	Status	
<p>SO 4.1</p> <p>Supplies are available for the immunization program on a sustainable basis with national resources</p>	<p>SO 4.1.3</p> <p>Number of countries and territories that procure vaccines through the Revolving Fund that meet the criteria for accuracy of demand for vaccines and supply</p> <p>Baseline: 10 in 2013 Goal: 30 in 2020</p>	<p>As of 2017, 23 of 41 participating countries achieved at least forecast accuracy targets set for at least 50% of vaccines procured. It is important to consider that since 2016 the RF is reviewing and implementing the most appropriate processes, indicators, and tools to drive continuous improvement of countries and RF demand planning accuracy.</p>	 <p>IN PROGRESS</p>
<p>SO 4.2</p> <p>Strengthened immunization services are part of comprehensive, well-run health services</p>	<p>SO 4.2.1</p> <p>Number of countries and territories that have dropout rates below 5% between the first and the third dose of DTP vaccine</p> <p>Baseline: 11 in 2013 Goal: 35 in 2020</p>	<p>As of 2017, 21 countries and territories have the DTP1-3 drop-out rate under 5%.</p>	 <p>IN PROGRESS</p>
	<p>SO 4.2.2</p> <p>Number of countries and territories with coverage above 95% for third dose of DTP vaccine sustained for three or more consecutive years</p> <p>Baseline: 13 in 2013 Goal: 35 in 2020</p>	<p>As of 2017, 5 countries and territories have maintained DTP3 coverage above 95% for three or more consecutive years.</p>	 <p>OFF TRACK</p>
	<p>SO 4.2.3</p> <p>Number of countries and territories that have conducted exercises to identify and correct barriers to reaching the unvaccinated or under-vaccinated populations</p> <p>Baseline: 22 in 2013 Goal: 35 in 2020</p>	<p>As of 2017, 23 countries and territories that have conducted exercises to identify and correct barriers to reaching the unvaccinated or undervaccinated populations.</p>	 <p>OFF TRACK</p>
	<p>SO 4.2.4</p> <p>Number of countries and territories that have held activities to improve the quality of their coverage data and that include these activities in their annual action plans</p> <p>Baseline: 12 in 2013 Goal: 25 in 2020</p>	<p>As of 2017, 24 countries and territories have held activities to improve the quality of their immunization data.</p>	 <p>ON TRACK</p>

General (GO) and Strategic Objectives (SO)	Indicator	Status	
SO 4.2 Strengthened immunization services are part of comprehensive, well-run health services	SO 4.2.5 Number of countries and territories that have a national system for computerized nominal immunization registry Baseline: 3 in 2013 Goal: 10 in 2020	As of 2017, 14 countries have EIR systems implemented.	 ON TRACK
	SO 4.2.6 Number of countries and territories that report having had a stock-out of a vaccine or related supplies for one full month or more at any level (local, subnational, or national) Baseline: 11 in 2013 Goal: 0 in 2020	As of 2017, 17 countries and territories have reported stock-out for PCV, rotavirus, BCG, DTP, measles, yellow fever, HPV, IPV, polio, Tdap, hepatitis B.	 OFF TRACK
	SO 4.2.7 Number of countries and territories that have strengthened post-marketing surveillance of vaccines in the Expanded Program on Immunization Baseline: 4 in 2013 Goal: 10 in 2020	As of 2017, 40 countries and territories have strengthened post-marketing surveillance of vaccines in the Expanded Program on Immunization (EPI) having a national system to monitor adverse events following immunization.	 ON TRACK
	SO 4.2.8 Number of countries and territories that hold vaccination activities geared to health workers Baseline: 19 in 2013 Goal: 25 in 2020	As of 2017, 35 countries and territories in the Region have been working to improve the knowledge and skill of their health workers.	 ON TRACK

Challenges and actions needed to improve immunization in the Region

The Region currently faces outbreaks of vaccine-preventable diseases such as measles, diphtheria, pertussis, and yellow fever, which are of public health concern. These disease outbreaks are mainly due to persistent, low vaccination coverage at the local/district level. In 2017, 10% of the countries in the Region reported vaccination coverage levels with the first dose of measles and rubella-containing vaccines at lower than 80%. Additionally, the regional coverage with the third dose of diphtheria, tetanus, and pertussis (DTP3) vaccine has dropped to 88%, leaving behind approximately 1.8 million children under 1 year of age unvaccinated against these diseases. This places the entire Region in a high-risk situation for outbreaks of measles, diphtheria, pertussis, and other vaccine-preventable diseases.

This situation should motivate the Region to reinforce the following:

1. To ensure that everyone is vaccinated, especially the most vulnerable, including those displaced, migrants, moving to urban centers and other mobile population.
2. To work together with health care systems to ensure access to extend the services to everyone and reinforce the integrated work. Strengthen the surveillance for vaccine-preventable diseases, to promptly identify an importation or a new case. Countries should also work on the quality and use of data.
3. Immunization programs should maintain a budget line for vaccine procurement, but also ensure adequate resources for operational activities such as mop-up vaccination, social communication, supervision, and training.
4. To promote social participation as well as public knowledge of the safety and benefits of the vaccines.

