

Remaining Immunity Gaps in Developing Countries: Current and Future Challenges

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Vaccinology 2018

Panama City, Panama, October 2018

Presentation

- GVAP update 2017
- Status of coverage in LAC
- Emergence of VPDs in LAC
- Critical issues going forward



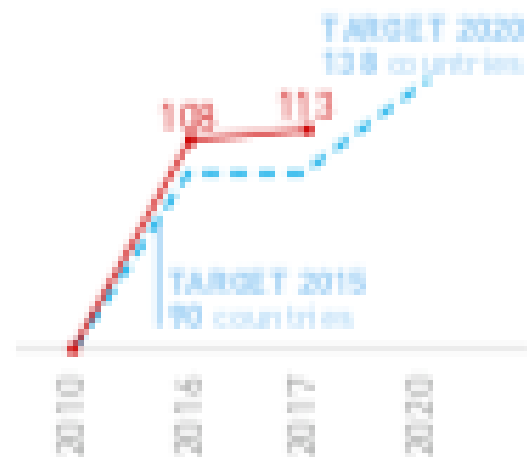
IMMUNIZATION TODAY
AND IN THE NEXT DECADE

2018
ASSESSMENT
REPORT OF THE
GLOBAL VACCINE
ACTION PLAN

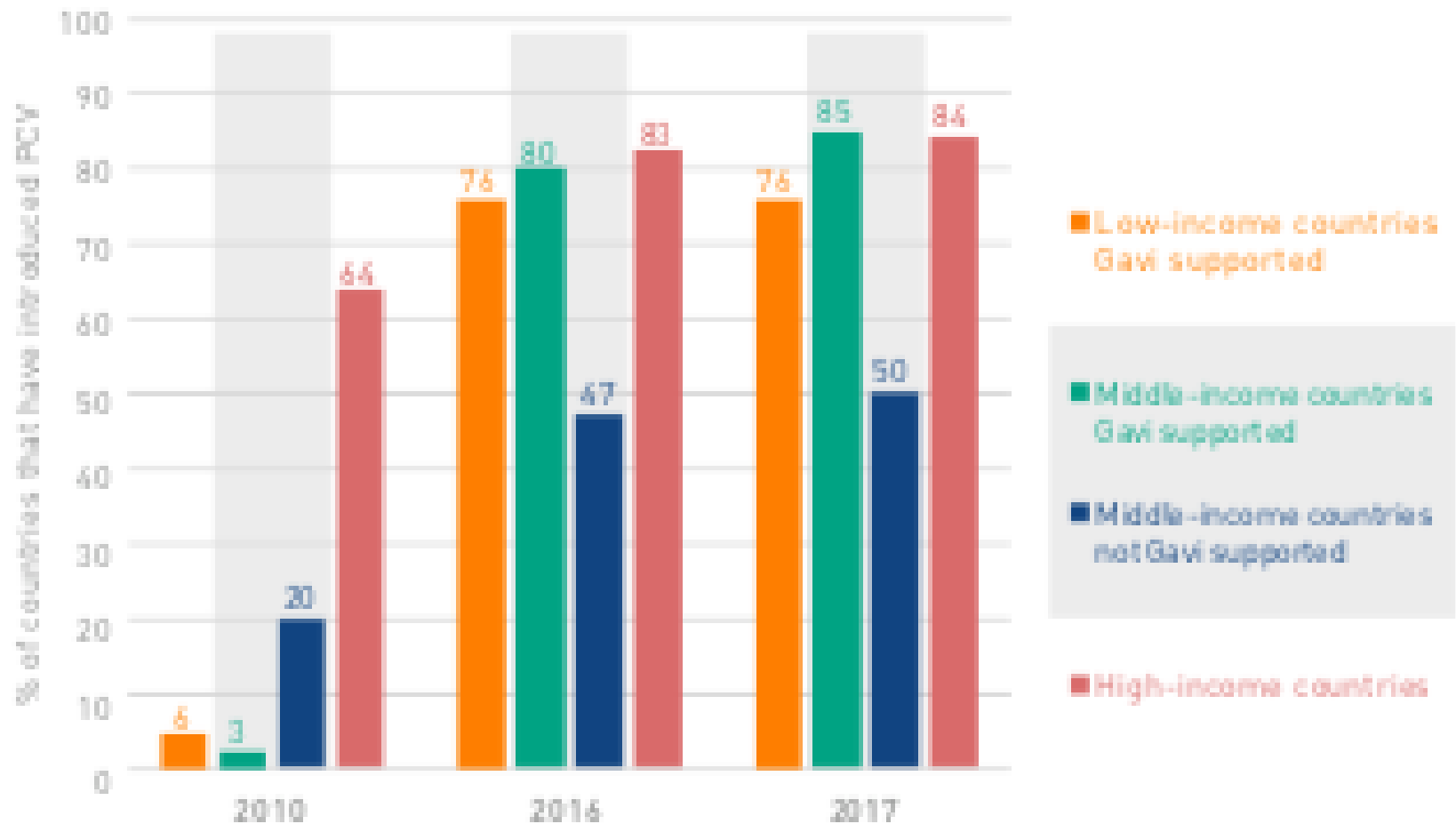
STRATEGIC
ADVISORY
GROUP OF
EXPERTS ON
IMMUNIZATION

NEW VACCINE INTRODUCTIONS REMAIN ON TRACK

Number of low- and middle-income countries that have introduced at least one new- or underutilized vaccine since 2010



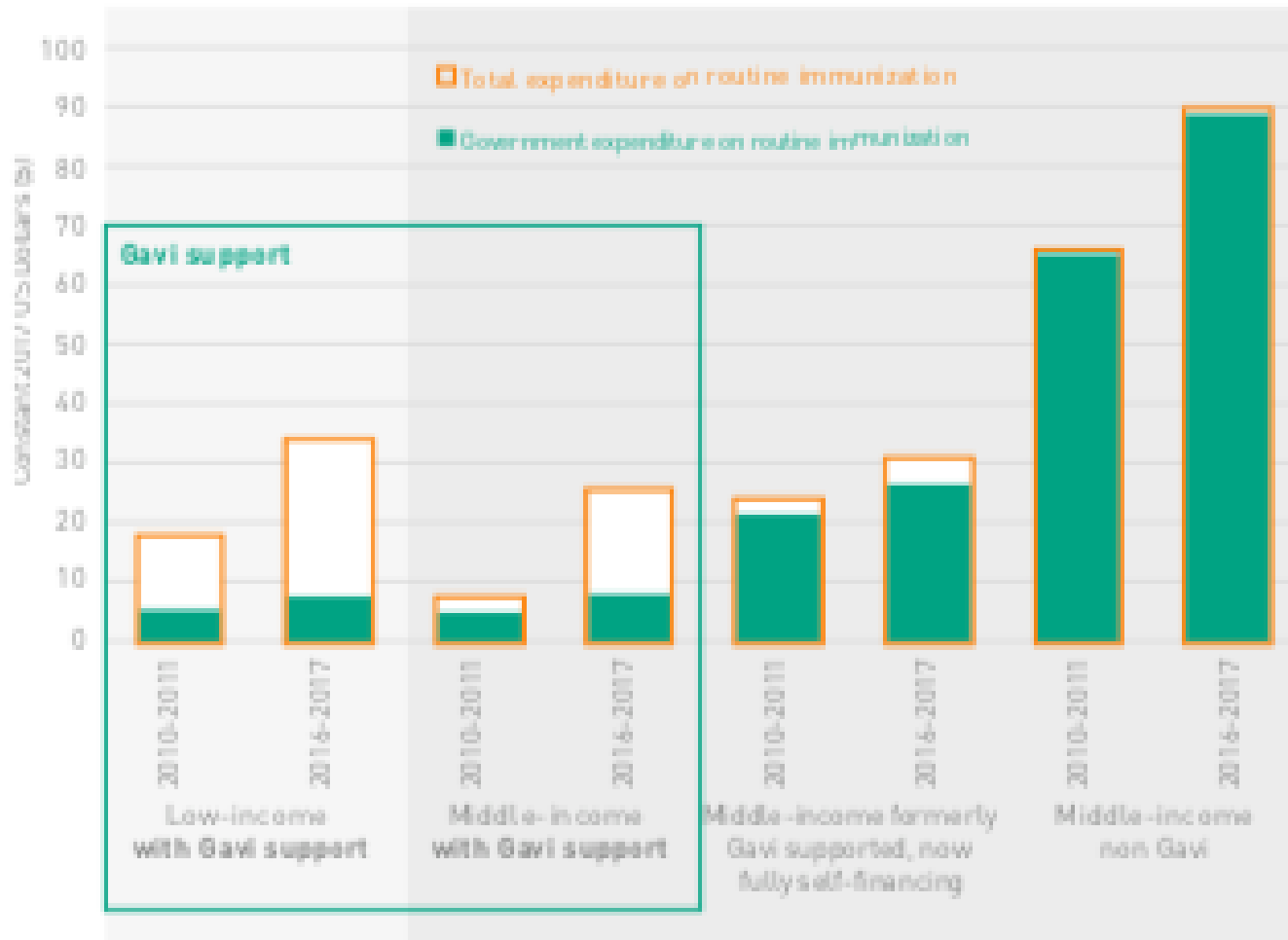
MIDDLE-INCOME COUNTRIES THAT ARE NOT GAVI-SUPPORTED LAG BEHIND IN PCV INTRODUCTION



Source: 2017 SAGE DoV Report

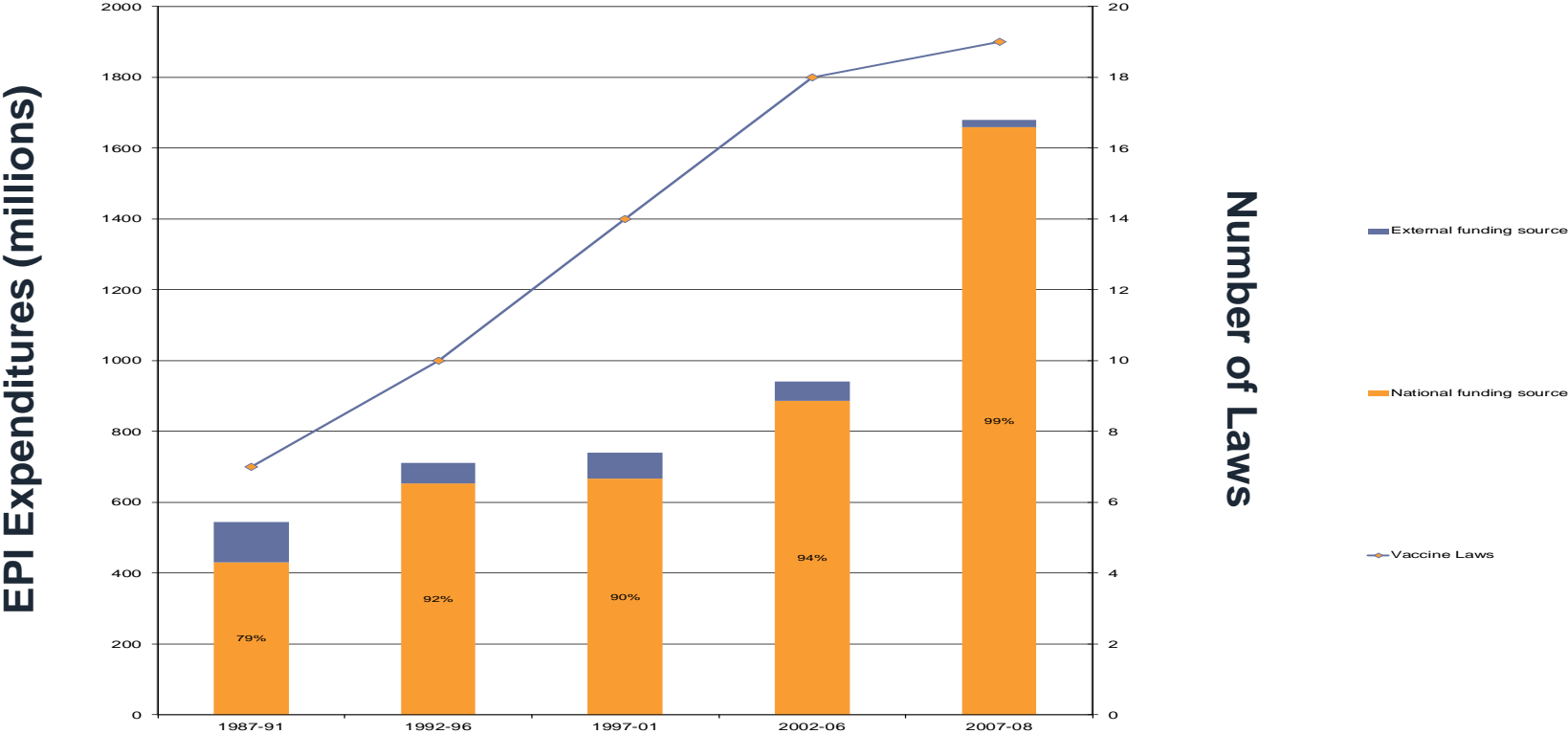
TOTAL EXPENDITURE ON IMMUNIZATION AND SOURCES OF EXPENDITURE VARY SIGNIFICANTLY BETWEEN DIFFERENT CATEGORIES OF COUNTRY

Annual expenditure on routine immunization per live birth

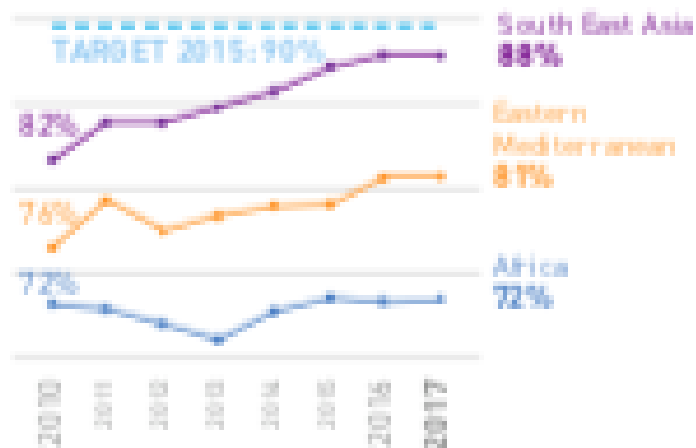


EPI Financing and Vaccine Legislation

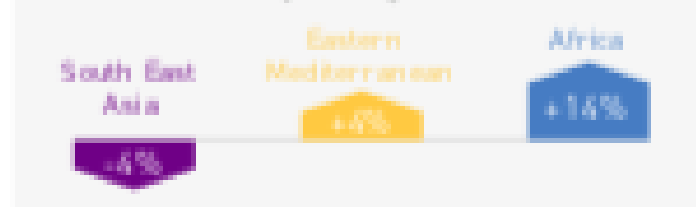
The Americas, 1987-2008



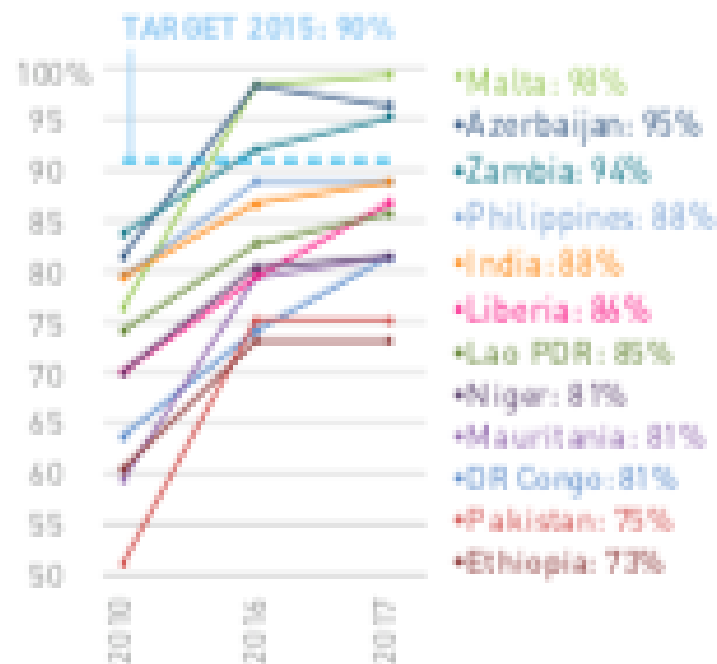
DTP3 COVERAGE HAS INCREASED SIGNIFICANTLY IN THE EASTERN MEDITERRANEAN AND SOUTH-EAST ASIA REGIONS AND BEEN MAINTAINED IN THE AFRICAN REGION DESPITE A BIG INCREASE IN ITS BIRTH COHORT



Birth cohort variation by WHO region between 2010 and 2017



COUNTRIES ACHIEVING THE GREATEST INCREASES IN DTP3 COVERAGE 2010-17

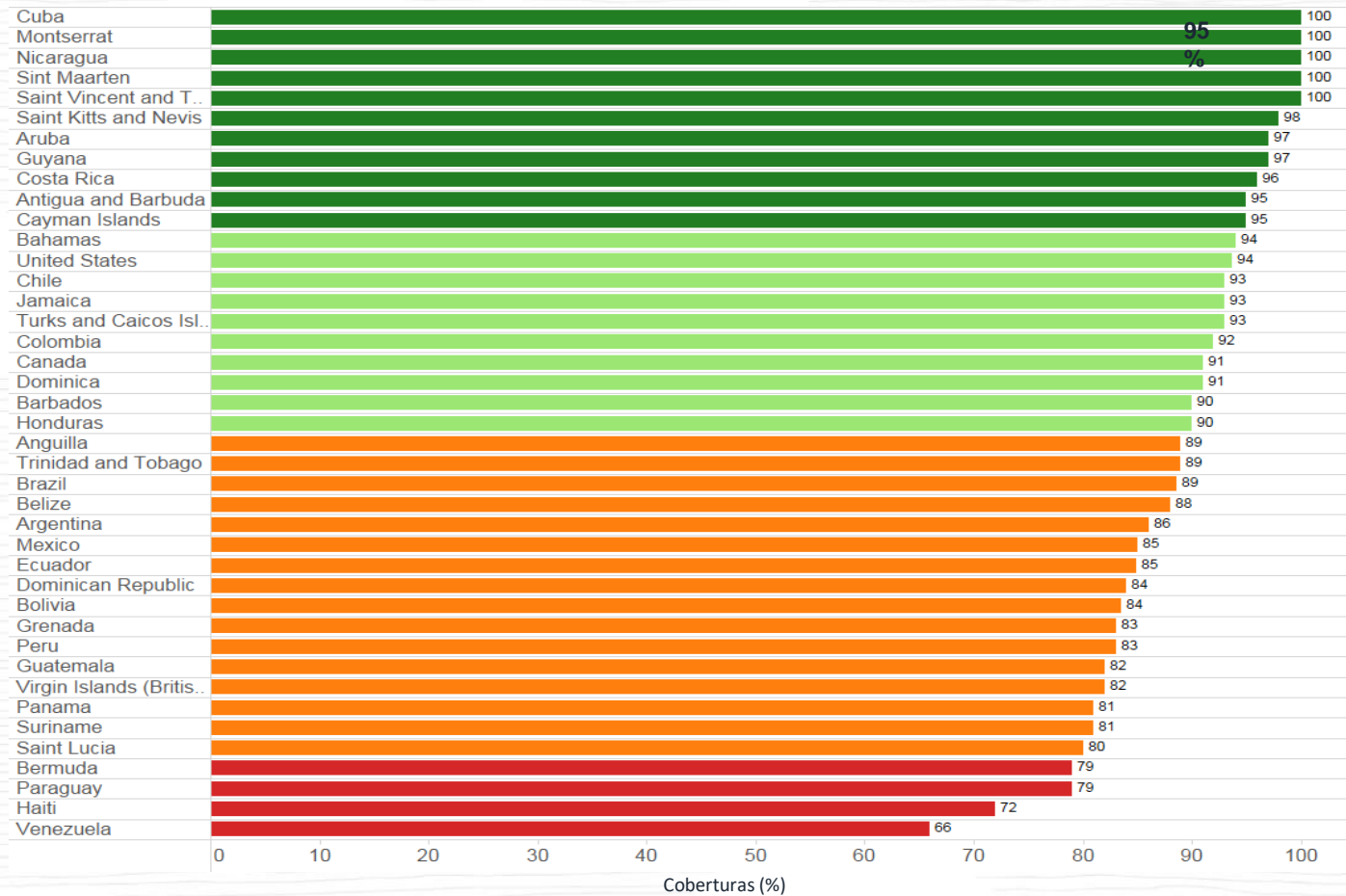


Excluding countries with a population less than one million.

Presentation

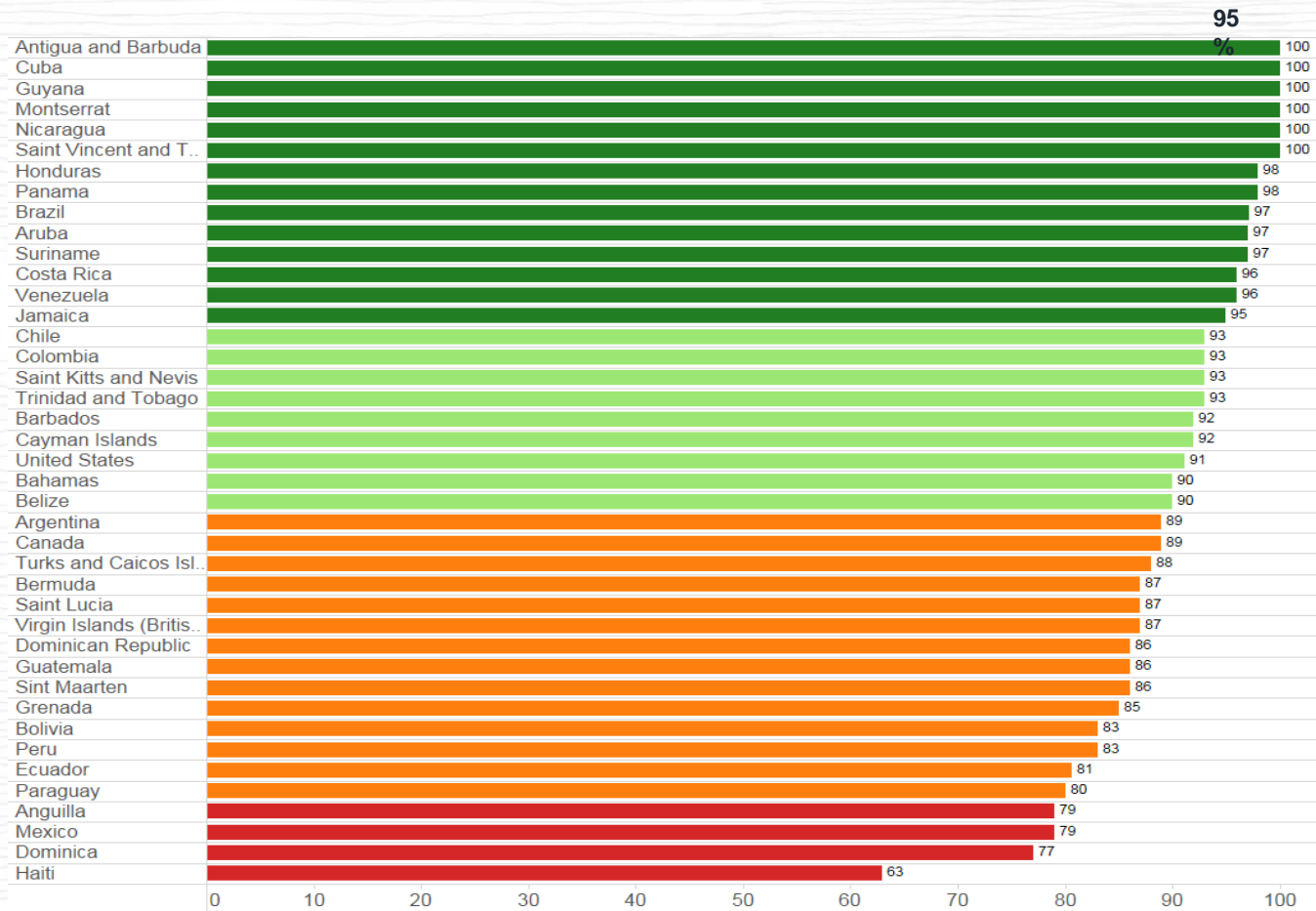
- GVAP update 2017
- ***Status of coverage in LAC***
- Emergence of VPDs in LAC
- Critical issues going forward

DTP3 coverage, The Americas 2017



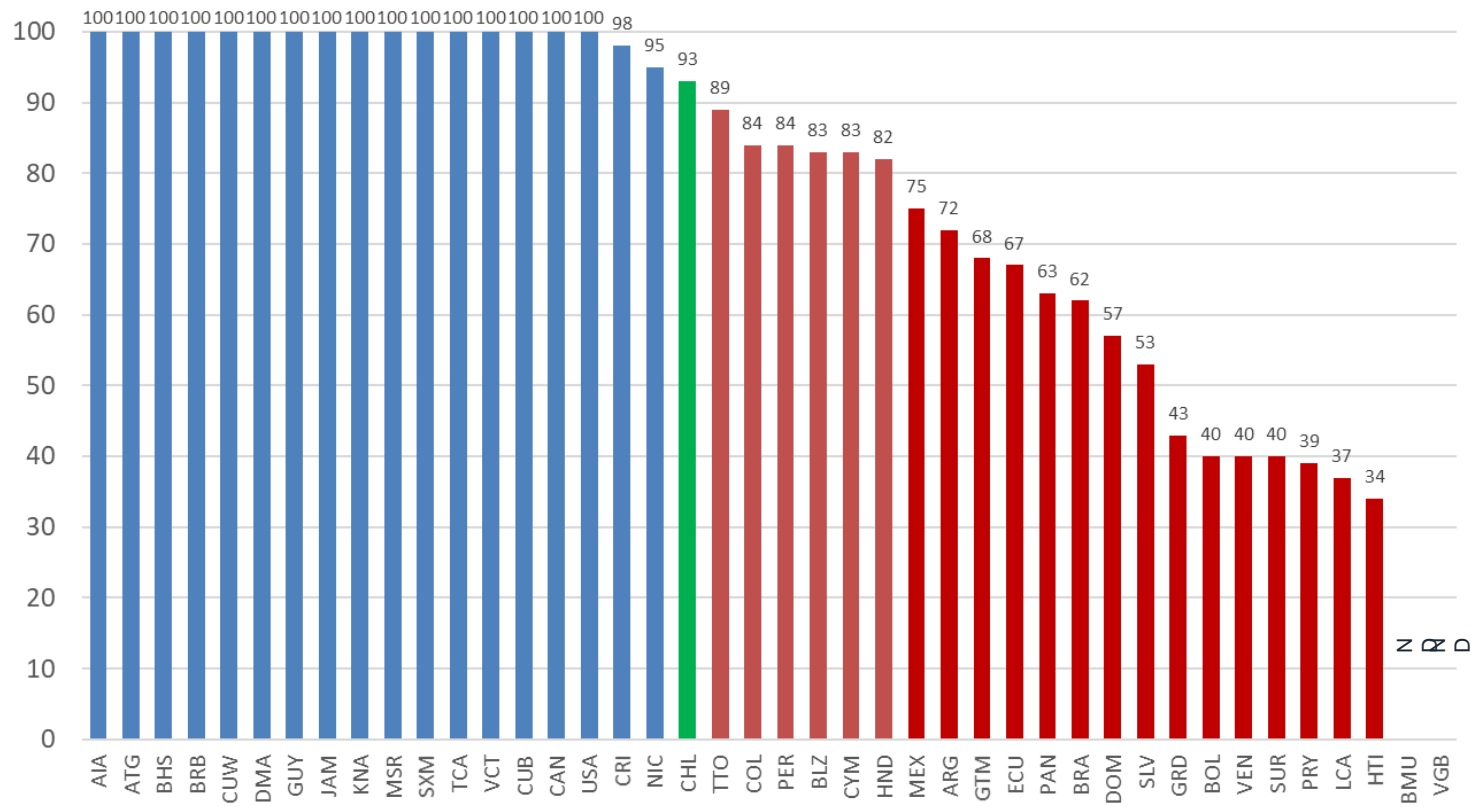
Source: Country reports through PAHO-WHO/UNICEF Joint Reporting Forms (JRFs), 2018.

MMR1 coverage, The Americas 2017



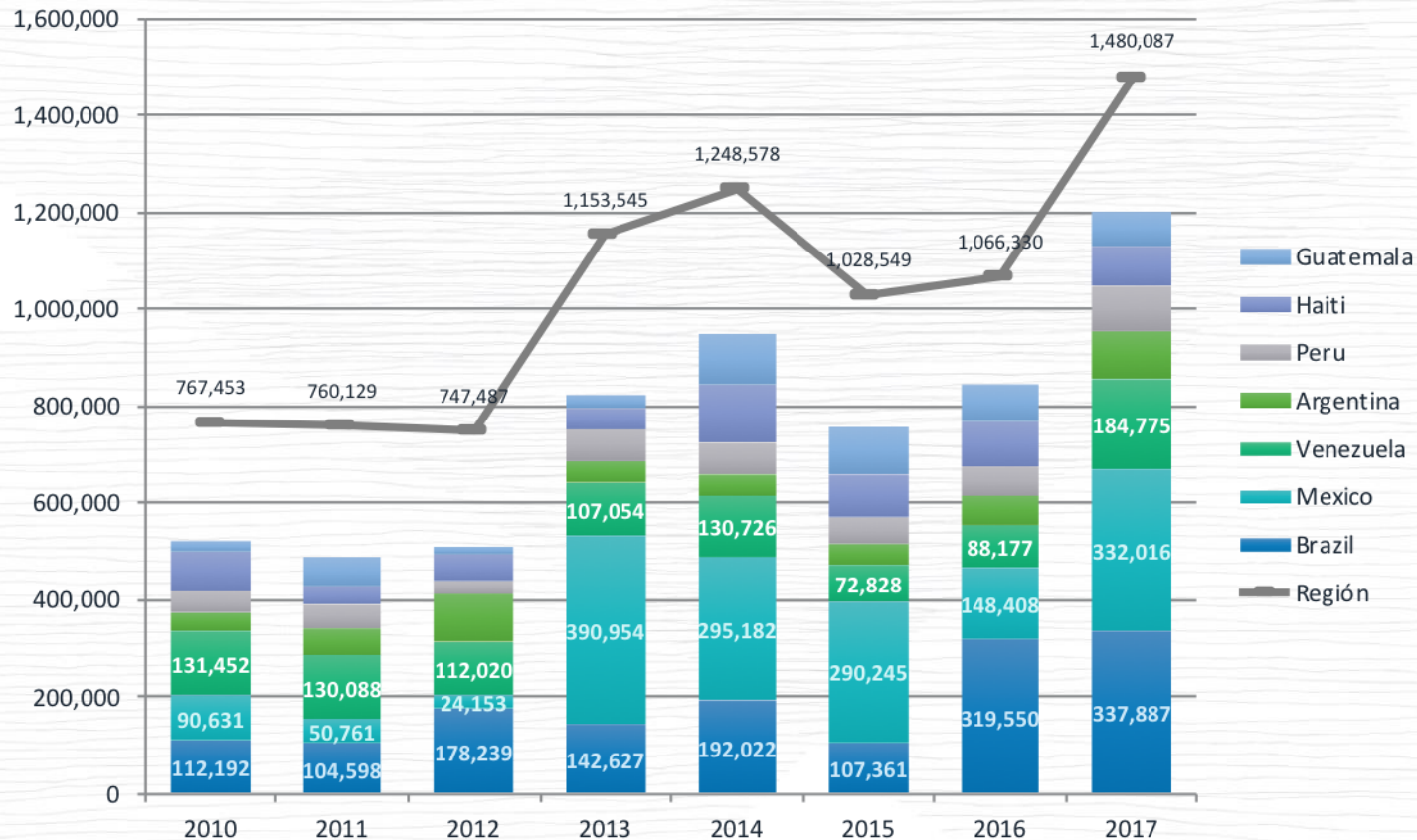
Source: Country reports through PAHO-WHO/UNICEF Joint Reporting Forms (JRFs), 2018.

Percent municipalities with DTP3 vaccination coverage $\geq 80\%$, Children <1 year of age, The Americas, 2017



Source: Country reports through PAHO-WHO/UNICEF Joint Reporting Forms (JRFs), 2018.

Non-vaccinated children (DPT3) by selected country by year, The Americas, 2010 - 2017



Fuente: JRF 2018, datos 2017. Datos al 29 de junio de 2018.

Presentation

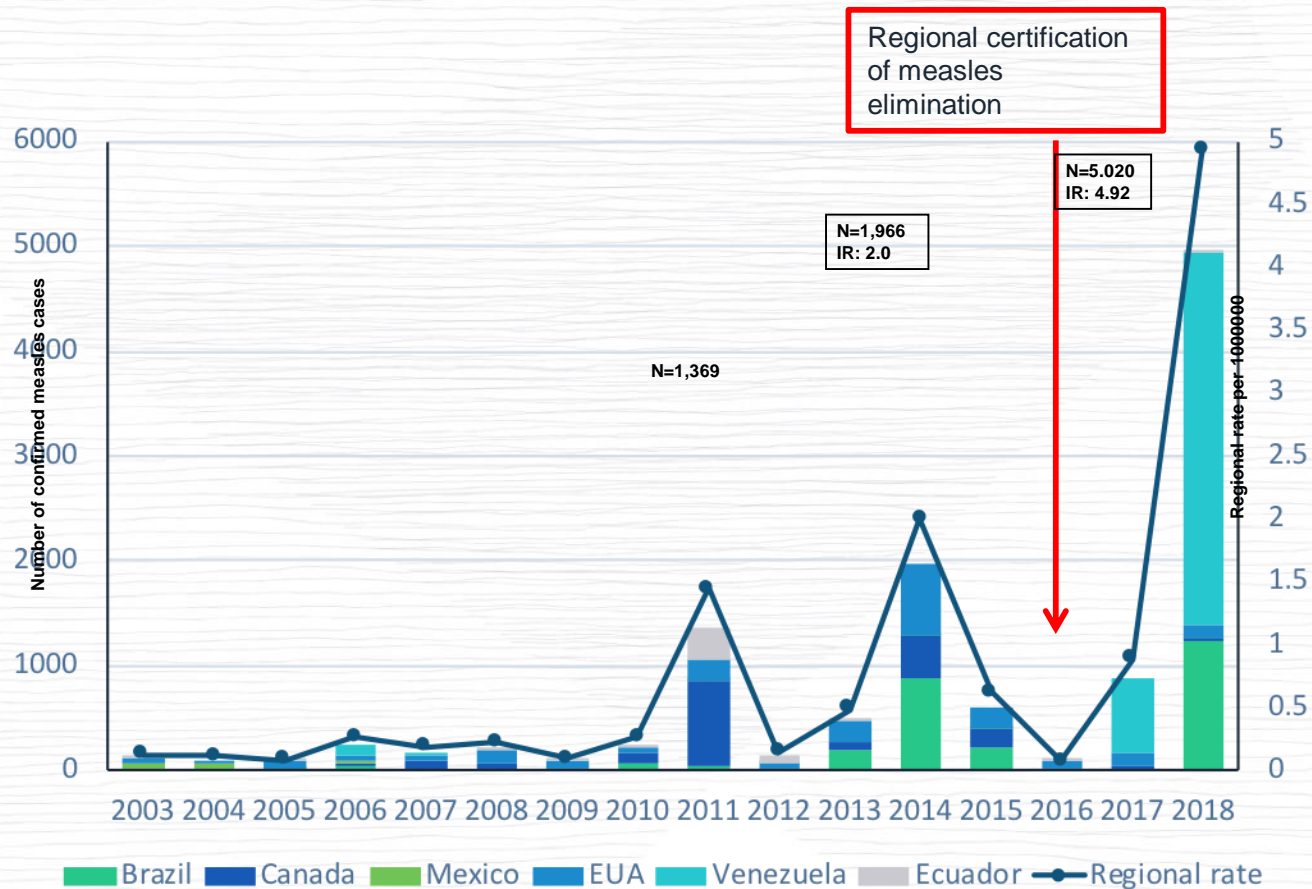
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Diphtheria outbreaks, The Americas, 2014-2018

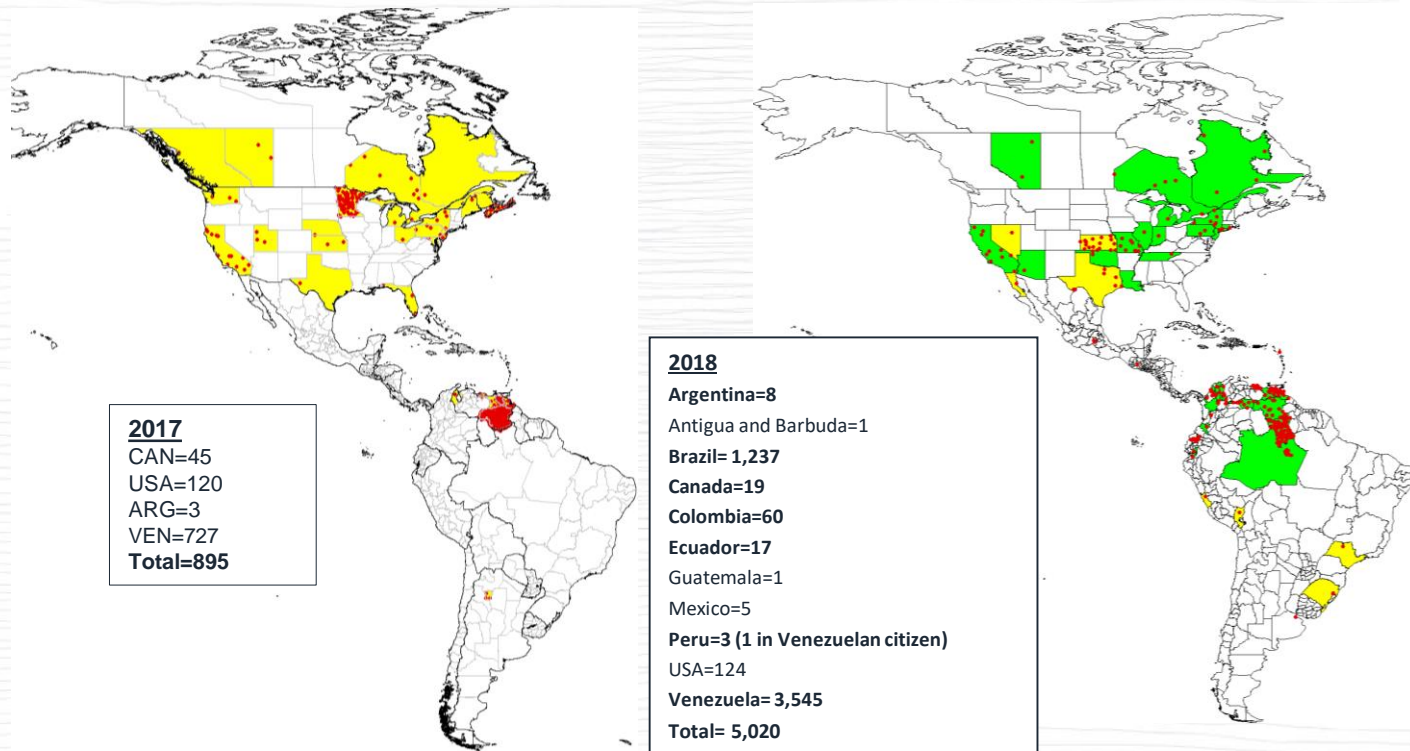


	Haiti	Venezuela
Start of outbreak	EW 51, 2014	EW 26, 2016
Number of confirmed cases from beginning of outbreak to July 31, 2018	218	211
Most affected age group	<10 years of age	5-15 years of age
Vaccination coverage (JRF 2017)	DPT3: 72% DPT4: 32%	DPT3: 66% DPT4: 38%
Vaccination campaign	Intensification of vaccination through regular vaccination program Td campaign in 44 communes of 9 departments (7 - 14 years)	Intensification of vaccination through regular vaccination program Td campaign (7 - 15 years)

Measles outbreaks in the post elimination era. The Americas, 2003-2018* (Incidence rate per million)

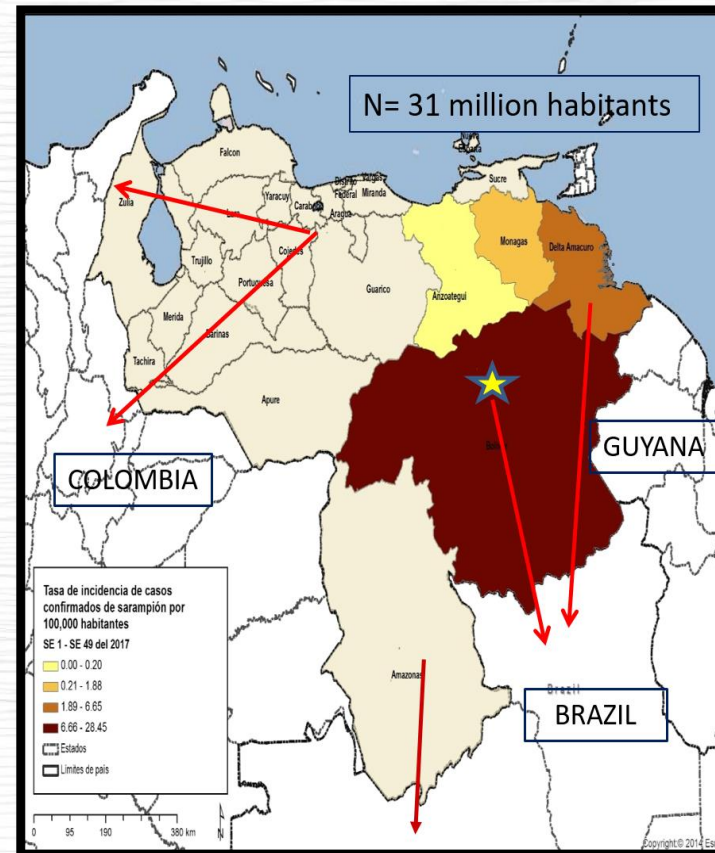


Distribution of confirmed measles cases by countries. The Americas 2017 and 2018*



Measles epidemiological situation. Venezuela, 2017 – 2018*

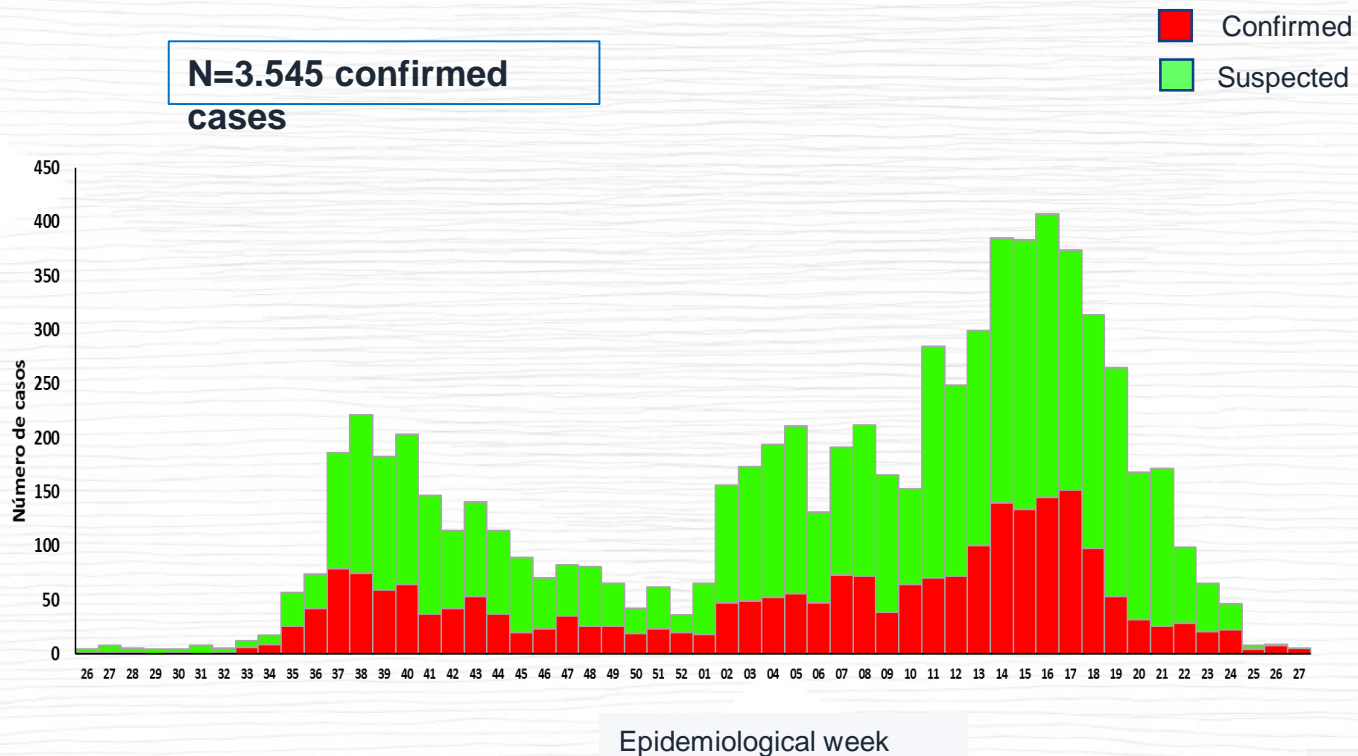
- Index case detected at Caroní, Bolívar DRO: July 1, 2017; No source of infection identified
- Genotype D8 identified
- **July 2017-August 2018:**
 - 3,545 confirmed cases
 - 1,829 cases under investigation
 - 62 deaths: 53 in Delta Amacuro, 2 in Caracas and 7 in Miranda
- 2018 virus has spread into 21/24 states in Venezuela and Brazil (Feb), Colombia and Ecuador (March)
- **June 30, 12 months of viral circulation allowed the reestablishment of measles endemic transmission**



Source: Ministry of Health of Venezuela

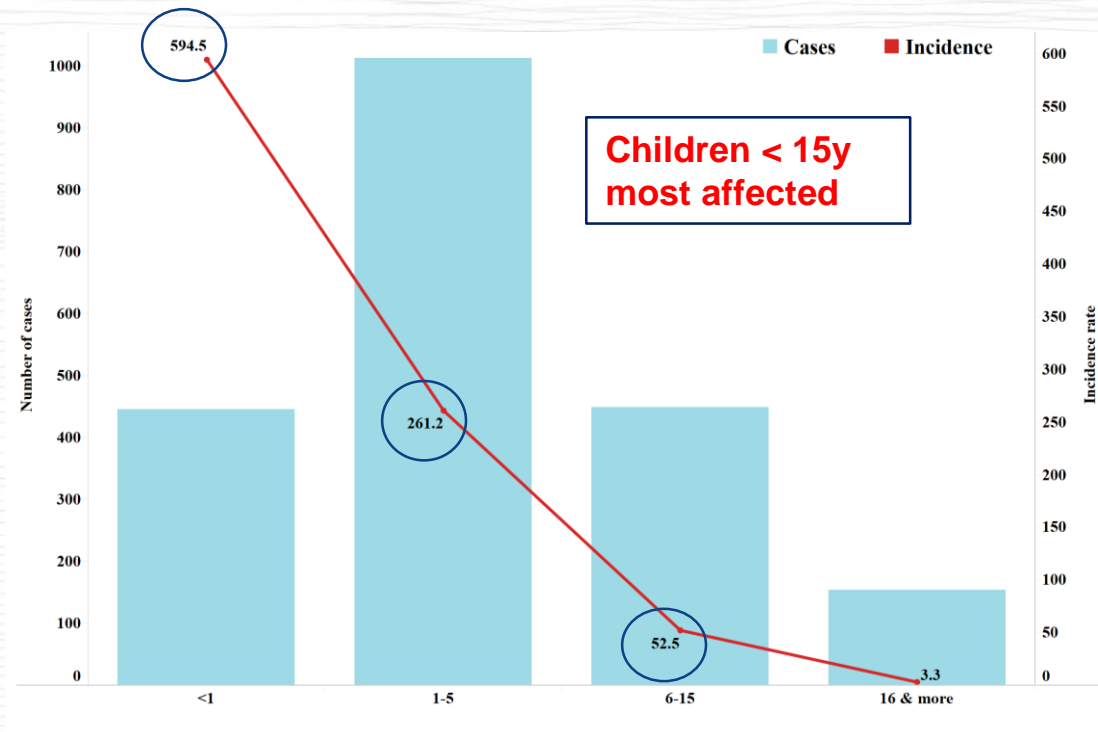
*Data as of EW 27 2018

Reported measles cases by EW of rash onset. Venezuela. EW 26 of 2017 - 2018*



Source: Ministry of Health of Venezuela
 *Data as of EW 27 2018

Measles incidence by age groups in Distrito Capital, Miranda, Vargas and Delta Amacuro. Venezuela, EW 01 -21 2018



Source: PAHO Consultants data obtained directly from Health Services

MIGRATION TRENDS IN THE AMERICAS

Bolivarian Republic of Venezuela

April 2018



International Organization for Migration (IOM)

The UN Migration Agency

Colombia is the main destination for Venezuelans in South America. Likewise, a large percentage of Venezuelan citizens enter Colombia in transit towards third destination countries. This dynamic not only has remained steady, but also increased in recent months, with the following key destinations: **Ecuador, Peru, Chile, The United States, Panama, Mexico, Spain, Argentina, Brazil** and **Costa Rica** (Colombia Migration, 2017)⁶.

IOM Colombia leads the coordination of the UN Border Inter-Agency Group. It also works with UNHCR, WFP and the Resident Coordinator on several activities.

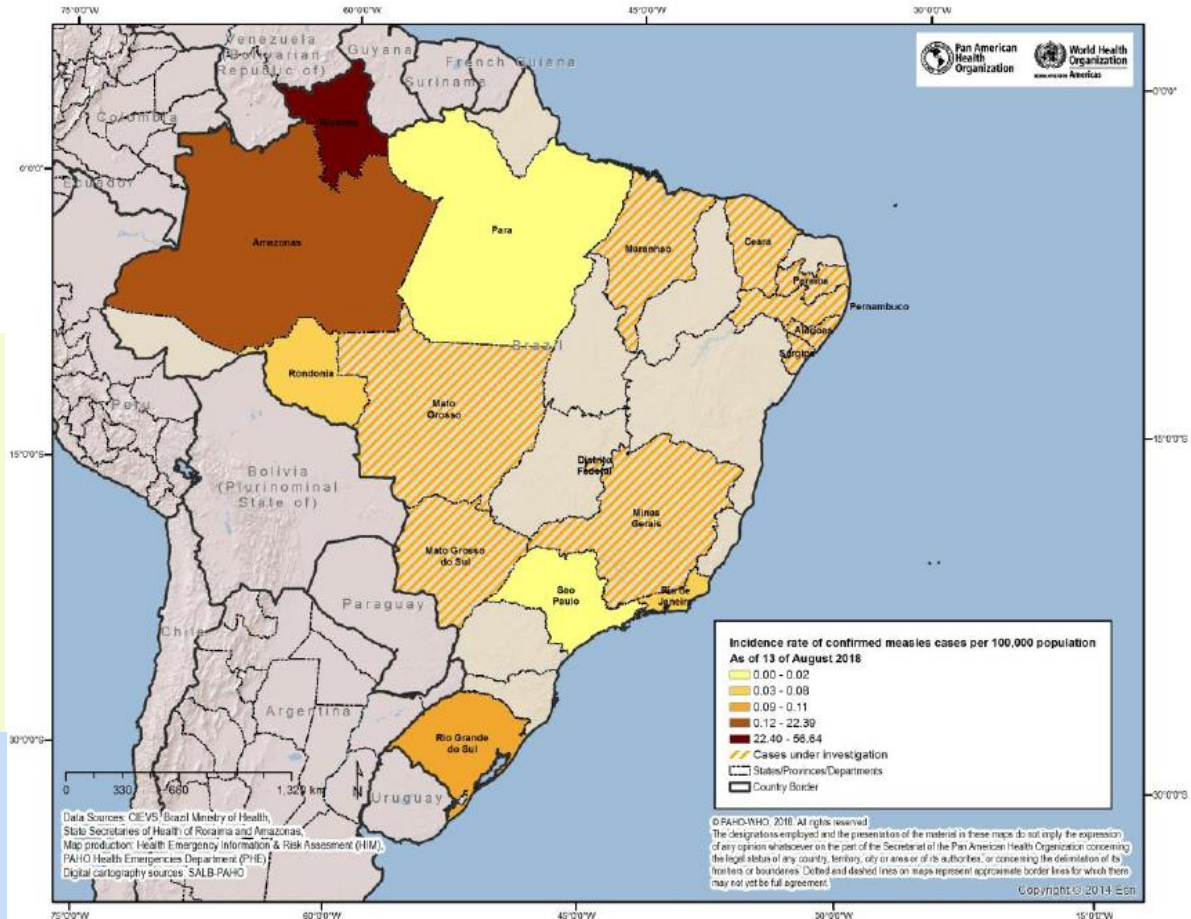


Measles cases in Brazil EW 4-31, 2018

7890 suspected cases
 1237 confirmed cases
 6 confirmed deaths
 7 states confirmed cases
 10 states cases under invest.

1. Amazonas = 910
2. Roraima = 296
3. Rio de Janeiro = 14
4. Rio Grande do Sul = 13
5. Rondonia = 1
6. Para = 2
7. Sao Paulo = 1

- DOR Index case: 4 February 2018 in Boa Vista, Roraima. Six months of circulation.
- D8 genotype identified in RR, AM, RO: identical lineage to one identified in Venezuela



Source: Data provided by Brazil Ministry of Health



Pan American
Health
Organization

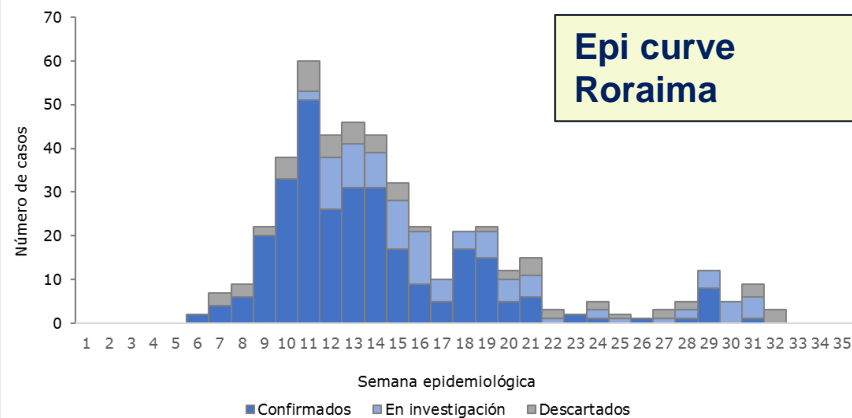


World Health
Organization
REGIONAL OFFICE FOR THE
AMERICAS

Measles in Brazil

19 July 2018 – 6.00 pm

For internal distribution only

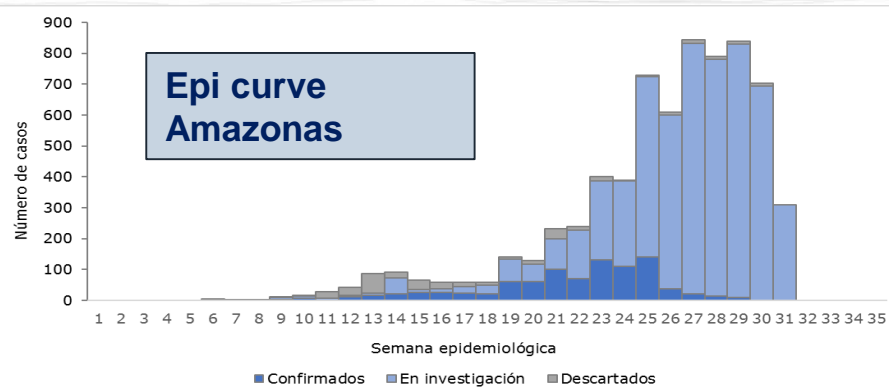


SITUATION IN NUMBERS

Suspected cases
6,880 Amazonas + 441 Roraima

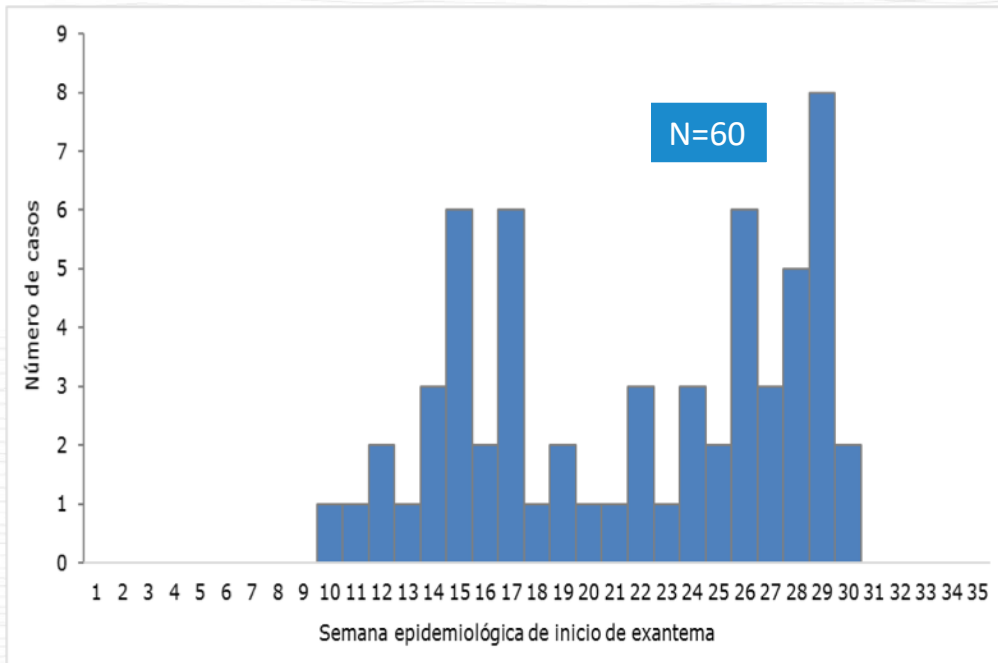
Confirmed cases
910 Amazonas + 296 Roraima

Deaths
2 Amazonas + 4 Roraima



PAHO

Confirmed measles cases by EW of rash onset. Colombia. EW 1 of 2017 to EW 31 of 2018*

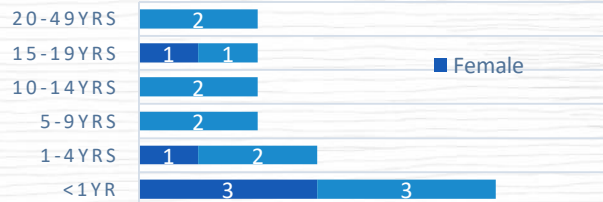
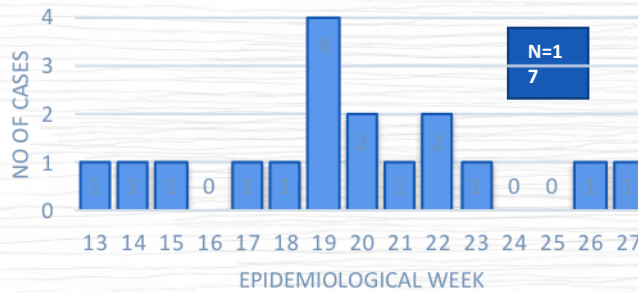


Source: SysVPD (ISIS) and country reports sent to PAHO/WHO.
*Data as of epidemiological week 31-2018

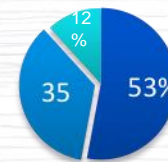
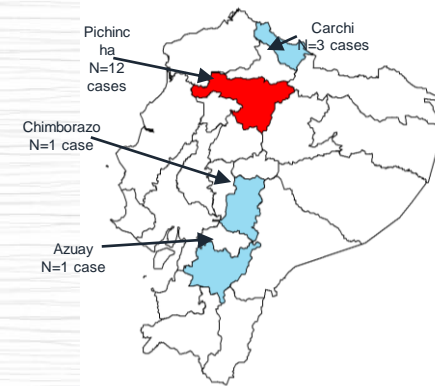
Of 60 cases:

- 37 imported from Venezuela
- 21 import-related
- 2 unknown source
- 6 Colombians
- Cases in 10 departments and 4 districts
- Genotype D8, lineage MVi/HuluLangat.MYS/26.11

Characteristics of measles outbreak in Ecuador, 2018*



Measles cases by province, epidemiological week 27-2018.



■ Unvaccinated ■ Not eligible
■ Vaccinated

Source: Ministry of Health, Ecuador
Data as of 17 July, 2018

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Vaccine and Immunization Investment Case

For every dollar invested in national immunization programs:

- **15 dollars are saved in the cost of health services**
- **44 dollars are saved when societal benefits are included**

Regional Support

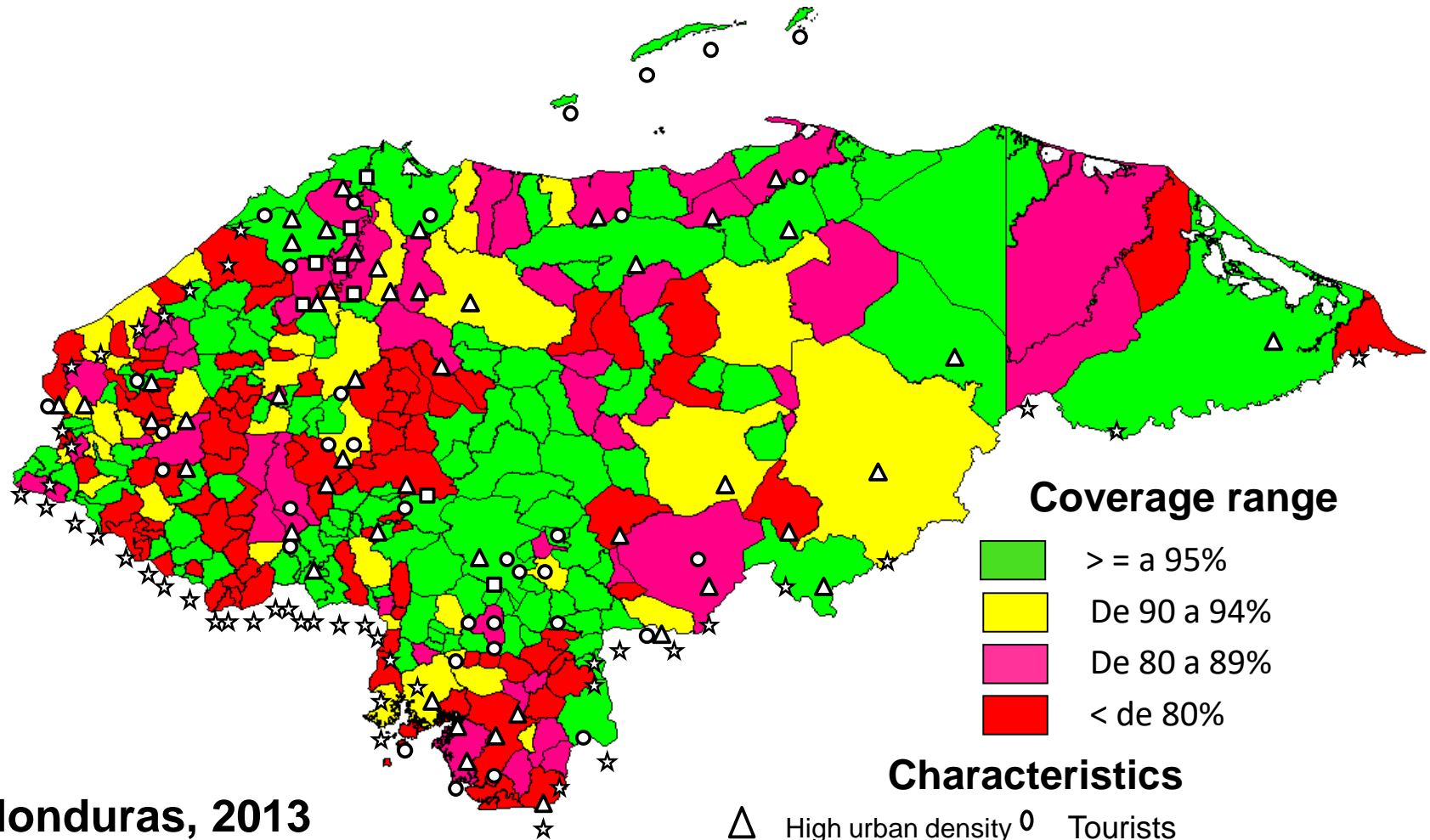
- Technical cooperation and partnership
- TAG and ICCs
- Revolving Fund
- Country presence
- National program reviews every 5 years

Tambini G, Andrus JK, Fitzsimmons JW, Roses Periago M. Regional programs for health: Immunization as a model for strengthening inter-country cooperation and control of infectious diseases.

Pan Am J Public Health 2006;20(1):54-9.



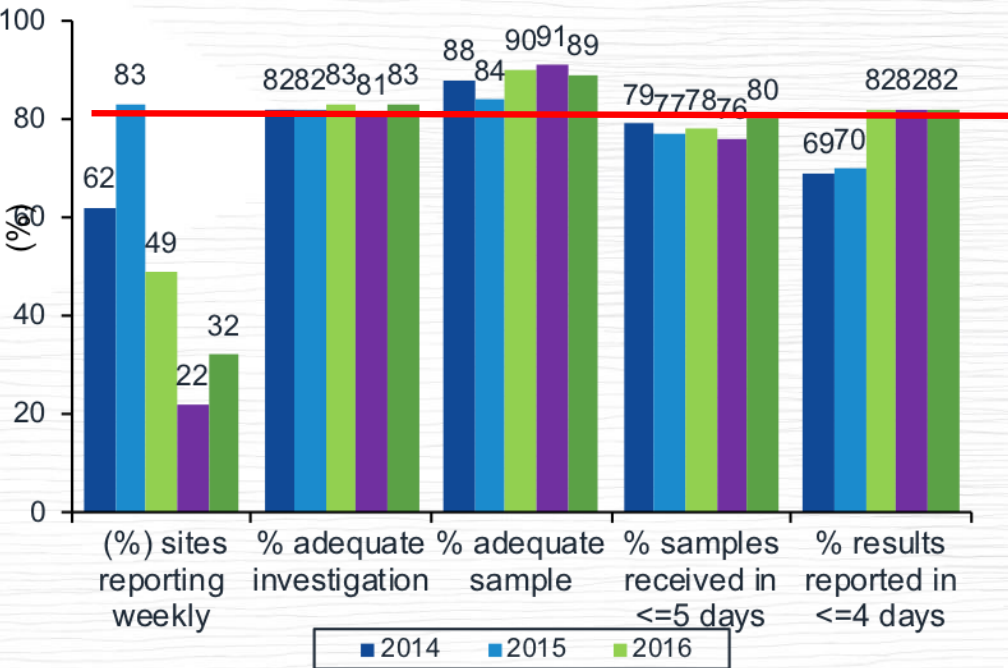
Identification of high risk municipalities by Rapid Coverage Monitoring, Honduras - 2013



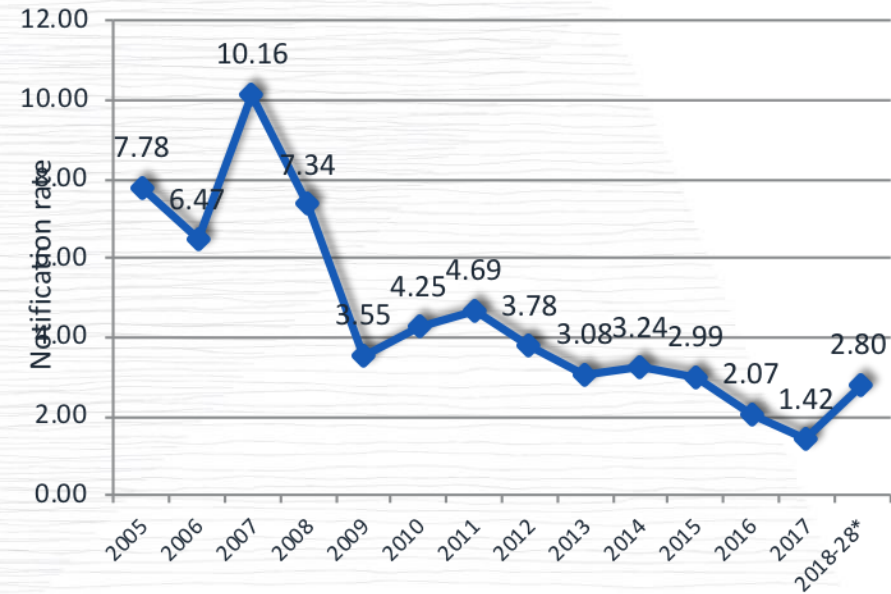
Honduras, 2013

Source: PAI/SESAL

Integrated measles and rubella surveillance indicators The Americas, 2014-2018*

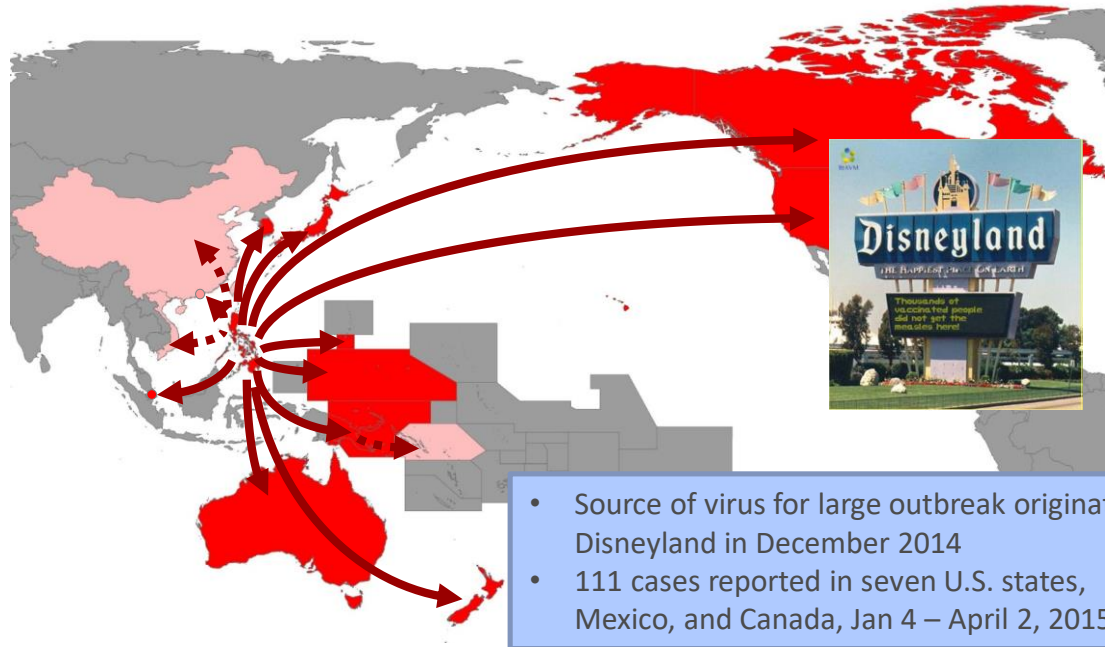


Regional rate of measles and rubella suspected cases. Latin America and the Caribbean, 2005-2018*



Source: ISIS, MESS and country reports *Data as of epidemiological week 28, 2018.

Measles Virus (genotype B3) Spread from Philippines to other Countries, 2013-2014



- Confirmed importation – 10 countries
- Suspected importation – 4 countries

Global Health Security

Andrus et al. BMC Public Health 2010, 10(Suppl 1):S2
<http://www.biomedcentral.com/1471-2458/10/S1/S2>

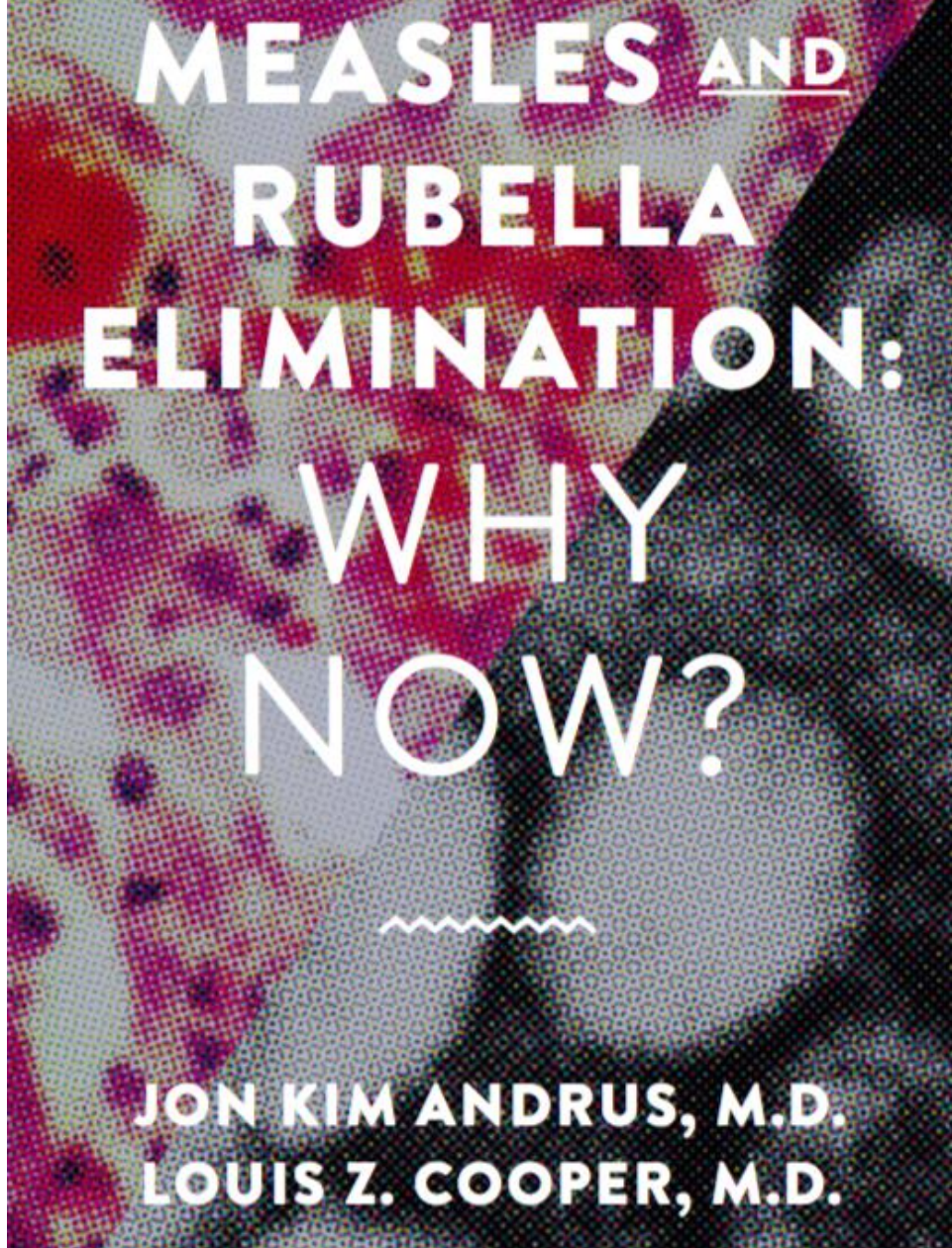


REVIEW

Open Access

Global health security and the International Health Regulations

Jon Kim Andrus^{1*}, Ximena Aguilera², Otavio Oliva³, Sylvain Aldighieri⁴



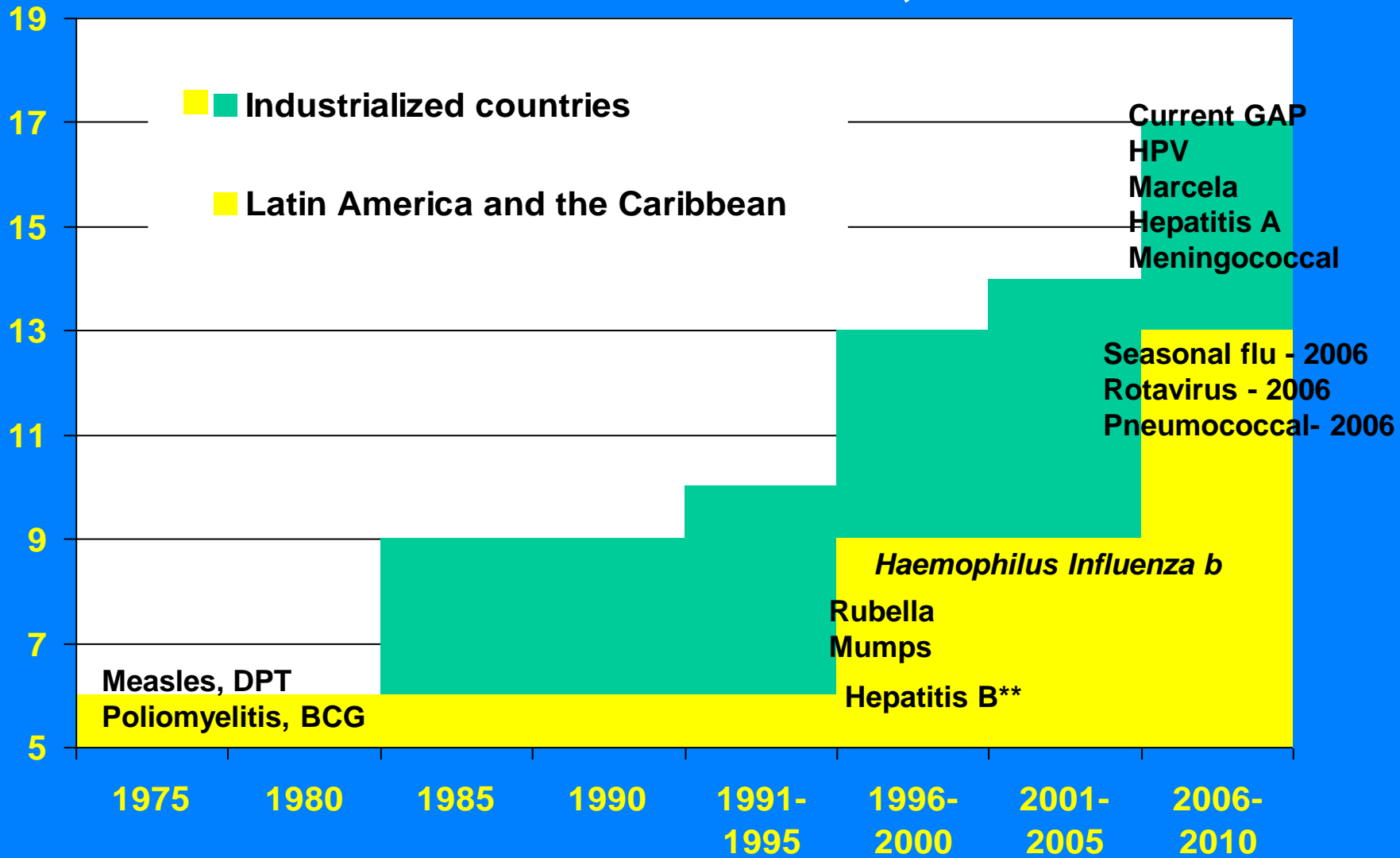
**MEASLES AND
RUBELLA
ELIMINATION:
WHY
NOW?**

**JON KIM ANDRUS, M.D.
LOUIS Z. COOPER, M.D.**

Disease burden
Economic burden
Economic opportunity
Security risk
Operational feasibility
Technical feasibility
Global Vaccine Action Plan
Partnerships
Legacy

Andrus JK, Cooper LZ. Measles and rubella elimination: Why now?
Cultures 2015;2:42-49

Number of childhood vaccines routinely used in industrialized countries and in Latin America and the Caribbean, 1975-2010



Considerations for new vaccine policy making at country-level



Source: Andrus, JK., Toscano, CM., Lewis, M., Oliveira, L. , et al. 2007, “A model for enhancing evidence-based capacity to make informed policy decisions on the introduction of new vaccines in the Americas: PAHO’s ProVac Initiative”, *Public Health Reports*, 122(6): 811-816.

Evidence base for NUVI in LAC

- Special supplement on methods to generate evidence for decision making
- Highlights work conducted by ProVac Centers of Excellence
- Instrumental to share the lessons learned from the ProVac Initiative
- English and Spanish!



Volumen 31, Suplemento 3, 2 de julio de 2013 ISSN 0264-410X

Base de Evidencias para la Introducción de Nuevas Vacunas en América Latina y el Caribe

Editores invitados: Jon K. Andrus y Damian G. Walker

Vaccine

ProVac

The Official Journal of the Edward Jenner Society
The Official Journal of the International Society for Vaccines
The Official Journal of the Japanese Society for Vaccinology

Issues going forward

Back to basics

- **Microplans, supervision, monitoring and evaluation**
- **Political commitment and country ownership**
- **Equity and access to immunization services, including reaching communities of poverty, rural poor, and introduction of new vaccines**
- **Urban poor and isolated rural populations**
- **Confronting emerging threats, maintaining global health security**
- **Migratory and border populations**

Measles



PAHO's ProVac Initiative

- ProVac's Goal: strengthen national capacity to make informed, evidence-based decisions regarding vaccine introduction.
- Current focus on 4 vaccines:
 - Rotavirus
 - Pneumococcal conjugate
 - HPV
 - Influenza
 - (in the future: polio, hep A, pneumo, meningo, dengue & others)