

Immunization in the Americas

2019 Summary

**Comprehensive Family Immunization
Family, Health Promotion, and Life Course**



**Pan American
Health
Organization**



**World Health
Organization**

REGIONAL OFFICE FOR THE **Americas**

preface

Since the Expanded Program on Immunization (EPI) was established in the Region of the Americas in 1977, its longevity and success can be attributed to the consistent, dedicated and relentless responses to challenges faced by the program throughout the years, and to an unwavering commitment to Pan-Americanism in the Region. These have come together to create the resilient fabric upon which the immunization program has been built and continues to grow. We have been a global leader in eliminating vaccine-preventable diseases (VPDs), like smallpox (1971), rubella and congenital rubella syndrome (2015), and neonatal tetanus (2017). This year also marks the 25th year since the certification of polio elimination from the Region in 1994.

While the regional immunization program has celebrated many successes, 2019 has been a challenging year. Measles and diphtheria outbreaks have been ongoing in the Region, due to low coverage with the measles, mumps, rubella (MMR) vaccine and the third dose of the vaccine against diphtheria, tetanus and pertussis (DTP3). We are nonetheless confident that the Region will overcome these challenges given our history of successes. Our experiences over the years demonstrate that we will, as the Americas has led the way towards the accelerated and equitable introduction of the rotavirus (22 countries and territories), pneumococcal (37 countries and territories), seasonal influenza (39 countries and territories), and human papillomavirus (40 countries and territories) vaccines. Additionally, the annual regional Vaccination Week in the Americas celebrated its 17th year in 2019 and has reached 740 million people since its inception.

Countries have faced other challenges as well, including maintaining immunization as a political priority, fiscal constraints, economic and social crises, multiple barriers for immunization delivery, limited health service hours, geographical barriers, challenges regarding human resources, vaccine availability, information systems and communication, among others. Communication has been complicated by a lack of awareness of the risk and seriousness of VPDs in the community, as well as dissemination of fake news on social media regarding the safety and effectiveness of vaccines.

Strengthening the health system and achieving universal health are essential prerequisites for addressing these challenges. These actions will serve as a vehicle to increase immunization coverage, as well as other primary health services, in an equitable manner. We must work to maintain government commitment to immunization as a top priority through the establishment of vaccine laws and support for national budgets that not only include vaccines, but all operational aspects of immunization programs as well.

Additionally, reliable measures to better understand why people are not being vaccinated are needed to ensure that evidence informs the design and evaluation of more tailored and targeted interventions to increase vaccine uptake. Standardized, validated measures to assess reasons for under-vaccination will also facilitate future comparisons across and within countries/regions and trend monitoring.

Finally, communication should be strengthened and utilized as an essential tool. Governments in the Region must learn how to communicate the importance and safety of vaccines using scientific evidence to respond to misinformation. They must also adopt integrated communication strategies focused on each population group to strengthen messages about the trustworthiness, safety, and efficacy of vaccines.

These are the ways we know will address and overcome the challenges we face and maintain the successes we have had in the control and elimination of vaccine-preventable diseases in the Region of the Americas. We can respond to any challenge in a way that defines our accomplishments as a Region and provides a roadmap for future challenges.



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For this publication:

- Latin America is composed of Mexico, Central America, Latin Caribbean, Andean Area, Brazil, and Southern Cone.
- Latin America & Caribbean is composed of Latin America and Non-Latin Caribbean.
- Because of their population size, Brazil and Mexico are shown separately.



The data published in the brochure "Immunization in the Americas" may have been updated by the countries, after publication. To see the most up-to-date data, please visit: www.paho.org/immunization/Data.

demographic and socioeconomic data

	1	2	3	4			5	6		7	8	9		10
	total population (thousands)	population <1 year old (thousands)	population 1 year old (thousands)	infant mortality rate (1,000 lb) or number of deaths (N)			women of childbearing age (thousands)	gross national income (US\$ per capita)		Gini index	national health expenditure as a % of GDP			
				rate	(N)	year		current value	ppp value		public	private		
	2018	2018	2018	rate	(N)	year	2018	2018	2018	2017	2016	2016	2016	
The Americas	1,006,302	14,678.1	14,717.3	12.2	139,852		508,251	27,677	32,789	45.1	7.2	3.3		
North America	364,242	4,252.5	4,293.1	5.7	24,036		168,166	61,027	61,751	40.7	13.3	3.1		
Bermuda	71	0.8	0.8	1.9	1	2018	29	106,140 ^H	66,810 ^H	...	...	...	...
Canada	37,075	387.4	393.7	4.5	1,700	2017	17,036	44,860	47,280	34.0 ^H	7.7	2.8		
United States of America	327,096	3,864.3	3,898.6	5.8	22,335	2017	151,102	62,850	63,390	41.5 ^L	14.0	3.1		
Latin America and the Caribbean	642,060	10,425.7	10,424.2	14.8	115,816		340,085	8,722	16,035	47.7	3.7	3.4		
Latin America	634,598	10,312.9	10,310.7	14.8	114,130		336,221	8,706	16,022	47.7	3.7	3.4		
Mexico	126,191	2,200.7	2,211.8	12.1 ^A	26,995	2017	67,158	9,180	19,440	43.4 ^L	2.9	2.6		
Central America	49,281	1,029.4	1,019.9	17.0	12,063		26,262	5,183	9,316	47.2	3.8	3.2		
Belize	383	7.9	7.9	12.6	98	2018	210	4,720	8,200	...	4.1	1.8		
Costa Rica	4,999	69.3	70.3	8.4 ^B	573	2018	2,643	11,510	16,670	48.3	5.6	1.9		
El Salvador	6,421	116.3	116.0	9.2 ^D	1,029	2018	3,385	3,820	7,850	38.0	4.5	2.3		
Guatemala	17,248	420.6	412.7	20.0	7,626	2017	9,121	4,410	8,310	48.3 ^J	2.2	3.6		
Honduras	9,588	205.9	202.5	22.8 ^D	...	2016	5,246	2,330	4,780	50.5	3.9	4.3		
Nicaragua	6,466	131.6	132.7	12.2 ^B	1,674	2018	3,503	2,030	5,390	46.2 ^J	5.4	3.0		
Panama	4,177	77.7	77.9	14.0	1,063	2017	2,153	14,370	23,510	49.9	4.8	2.4		
Latin Caribbean	37,187	603.2	608.4	34.0	5,240		18,549	6,458	11,366	43.3	4.9	2.3		
Cuba	11,338	113.4	117.8	4.0	461	2018	5,335	7,230 ^G	...	...	10.9	1.3	
Dominican Republic	10,627	202.7	202.1	22.8	4,420	2018	5,566	7,370	16,960	45.7 ^L	2.8	3.3		
French Guiana	283	7.3	6.9	7.9	56 ^G	2013-15	143	...	...	...	...	...
Guadeloupe	400	4.8	4.5	8.9	43 ^G	2013-15	162	...	...	...	...	...
Haiti	11,123	256.1	254.8	59.0 ^C	...	2016-17	5,839	800	1,870	41.1 ^M	0.8	2.5		
Martinique	376	3.8	3.6	7.3	88	2014-16	148	...	...	...	...	...
Puerto Rico	3,040	15.1	18.6	7.1 ^B	172	2017	1,356	21,100	26,560	...	...	...
Andean Area	138,975	2,371.2	2,372.4	15.8	19,537		73,289	7,461	14,107	46.5	3.1	2.4		
Bolivia	11,353	238.6	238.1	24.0 ^A	...	2011-16	5,852	3,370	7,670	44.0	4.5	2.1		
Colombia	49,661	762.4	748.6	16.8 ^E	7,220	2016	26,722	6,190	14,490	49.7	3.7	2.1		
Ecuador	17,084	335.9	333.1	9.7 ^D	3,252	2017	9,004	6,120	11,410	44.7	4.3	4.1		
Peru	31,989	581.8	568.2	15.0 ^C	...	2017	16,941	6,530	13,810	43.3	3.3	1.8		
Venezuela	28,887	452.5	484.5	15.2	9,065	2014	14,770	13,080 ^J	17,900 ^J	...	0.8	2.4		
Brazil	209,469	2,946.4	2,926.3	13.4 ^E	40,425	2,017	113,646	9,140	15,820	53.3	3.9	5.2		
Southern Cone	73,496	1,162.1	1,171.8	9.2	9,870		37,317	12,477	20,418	42.9	5.4	2.5		
Argentina	44,361	749.8	749.6	9.3	6,579	2017	22,294	12,370	19,820	40.6	5.6	1.9		
Chile	18,729	224.3	234.8	7.1	1,557	2017	9,641	14,670	24,250	46.6	5.0	3.5		
Paraguay	6,956	140.1	139.7	12.6 ^D	1,461	2017	3,716	5,680	13,180	48.8	4.1	3.9		
Uruguay	3,449	47.9	47.7	6.8	273	2018	1,666	15,650	21,900	39.5	6.5	2.6		
Non-Latin Caribbean	7,462	112.7	113.5	17.5	1,686		3,864	10,079	17,095	...	3.4	2.4		
Anguilla	17	0.2	0.3	20.7	3	2017	9	...	...	...	...	...
Antigua and Barbuda	96	1.5	1.5	18.0	20	2017	50	15,810	25,160	...	2.6	1.7		
Aruba	106	1.2	1.2	2.5	3	2017	48	23,630 ^K	36,960 ^K	...	...	...
Bahamas	386	5.4	5.3	16.0	70	2016	208	30,210 ^K	30,920 ^K	...	3.2	3.2		
Barbados	287	3.1	3.0	14.2	37	2016	134	15,240 ^K	17,640 ^K	...	3.2	3.7		
BES*	...	...	...	...	...	...	...	...	...	...	...	...
British Virgin Islands	36	0.4	0.4	16.5	4	2017	19	...	...	...	...	...
Cayman Islands	60	0.7	0.7	9.4	6	2017	28	...	50,510 ^K	...	...	...
Curaçao	163	1.8	1.8	10.3	16	2017	69	19,070 ^K	27,820 ^K	...	...	...
Dominica	74	1.1	1.1	13.8 ^B	10	2018	37	7,210	10,680	...	3.4	1.6		
Grenada	111	1.8	1.8	12.5	19	2018	57	9,780	14,270	...	2.2	3.0		
Guyana	779	15.1	15.0	18.9 ^D	290	2018	404	4,760	8,570	...	2.5	1.5		
Jamaica	2,935	46.6	46.9	20.9 ^D	756	2016	1,556	4,990	8,930	...	3.7	2.3		
Montserrat	5	0.1	0.1	0.0	0	2017	3	...	...	...	...	...
Saint Kitts & Nevis	53	0.7	0.7	27.0	16	2018	27	18,640	30,120	...	2.4	3.2		
Saint Lucia	182	2.2	2.2	31.7	59	2017	100	9,460	12,970	51.2 ^L	2.2	2.9		
Saint Vincent and the Grenadines	110	1.5	1.6	16.6	29	2016	56	7,940	13,210	...	2.7	0.8		
Sint Maarten (Dutch part)	43	0.5	0.5	14.6	6	2018	19	...	33,320 ^L	...	...	...
Suriname	576	10.5	10.5	14.0 ^D	137	2017	298	4,990	13,420	...	4.2	1.8		
Trinidad and Tobago	1,390	17.5	18.1	11.4 ^{B,D,F}	190	2017	707	16,240	32,060	...	3.4	3.1		
Turks and Caicos Islands	54	0.8	0.8	11.0	5	2018	33	26,740	24,540	...	...	...

*Bonaire, St. Eustatius, and Saba.

(A) study; (B) preliminary; (C) survey; (D) data have one or more of the following limitations: coverage of maternal deaths and live births, differences in the maternal death definition, different denominators used, the analysis of only confirmed maternal deaths, and coverage of infant and neonatal deaths; (E) estimate; (F) public sector only; (G) value 2015; (H) valor2013; (J) value 2014; (K) value 2017; (L) value 2016; (M) value 2012.

reported immunization coverage

	11	12	13	14	15	16	17	18	19	20	21	22	
	percentage of coverage												
	<1 year of age									1 year of age			
	BCG	HepB Birth <24 hours	IPV1	polio3	DTP1-vc ^(D)	DTP3-vc ^(D)	DTP1-3 dropout rate	rotavirus	PCV3	DTP4	MMR1	MMR2 ^(G)	
2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	
The Americas	93	74	90	87	92	89	4	79	87	78	91	83	
North America	NA	66	96	93	97	94	-4	74	91	82	92	93	
Bermuda	NA	...	91	95	91	95	-4	75	94	76	87	70	
Canada ^A	NA	...	95	91	94	91	...	79	81	76	90	87	
United States of America ^B	NA	66	96	93	97	94	...	73	92	83	92	94	
Latin America and the Caribbean	93	79	88	84	90	85	4	82	84	76	89	78	
Latin America	93	79	88	84	90	85	4	82	85	76	89	78	
Mexico	96	...	90	88	90	88	2	77	88	82	97	99	
Central America	91	66	94	89	94	89	5	90	89	85	90	87	
Belize	99	55	97	96	97	96	1	...	...	80	97	91 ^C
Costa Rica	92	90	95	94	95	94	1	...	96	95	94	100	
El Salvador	81	77	81	83	82	81	1	82	75	81	81	85	
Guatemala	88	48	94	85	94	86	9	87	85	77	87	76	
Honduras	93	82	93	91	93	91	2	92	91	92	91	94	
Nicaragua	100 ^C	NA	100 ^C	100 ^C	100 ^C	100 ^C	0	100 ^C	100 ^C	99	100 ^C	95	
Panama	100	85	100 ^C	88	100 ^C	88	14	95	92	88	100 ^C	100	
Latin Caribbean	90	87	90	81	96	89	10	77	38	62	87	49	
Cuba	100	100	100	99	100	99	0	NA	NA	99	100	100	
Dominican Republic	100 ^C	80	100 ^C	89	100 ^C	94	12	82	70	85	95	31 ^E	
French Guiana	...	...	...	...	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...	...	...	...	...
Haiti	76	...	78	66	91	79	13	73	12	24	74 ^F	38 ^F	
Martinique	...	...	...	...	...	...	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...	...	...	...
Andean Area	88	70	79	79	89	81	8	87	87	65	85	65	
Bolivia	90	...	89	83	89	83	7	87	83	...	89	38	
Colombia	89	77	93	92	92	92	0	90	94	85	95	88	
Ecuador	90	70	86 ^H	85	86	85	1	85	85	76	83	74	
Peru	81	73	89	83	90	84	6	85	82	69	85	66	
Venezuela	92	55	32	53	84	60	28	...	...	31	74	39
Brazil	98	87	88	85	87	87	-1	80	...	77	92	76	
Southern Cone	92	82	91	85	91	87	5	80	88	81	92	95 ^C	
Argentina	93	82	90	84	91	86	6	80	88	80	94	100	
Chile	96	...	98	95	99	95	5	...	93	89	93	93	
Paraguay	79	...	80	75	79	76	4	79	79	67	81	71	
Uruguay	98	NA	96	91	96	91	4	NA	93	93	97	91	
Non-Latin Caribbean	95	83	96	97	97	96	1	85	69	81	91	78	
Anguilla	89	...	89	91	89	91	5	...	91	70	81	73	
Antigua and Barbuda	NA	NA	100	94	100	95	5	NA	...	92	96	95	
Aruba	NA	...	99	96	99	96	3	...	94	93	97	83	
Bahamas	NA	...	94	90	94	90	4	70	90	67	89	69	
Barbados	NA	...	95	94	96	95	1	...	89	73	85	74	
BES*	...	...	...	...	...	...	...	...	...	...	...	...
British Virgin Islands	NA	98	86	92	94	92	2	...	...	90	94	83
Cayman Islands	82	...	97	93	97	93	6	80	91	89	90	70	
Curaçao	NA	...	96	91	96	92	5	...	86	82	89	66	
Dominica	95	46	99	94	99	94	7	...	...	83	84	81
Grenada	NA	95	96	96	96	95	1	...	...	75 ^E	84	74
Guyana	100	...	97	94	99	95	3	91	91	...	98	84	
Jamaica	93 ^C	...	95 ^C	98	95 ^C	97	-2	...	44	81	89	82	
Montserrat	100	96	100	96	100	96	15	...	85	94	96	79	
Saint Kitts & Nevis	97 ^C	96	99 ^C	98	99 ^C	98	-1	...	...	97	96	96 ^C
Saint Lucia	100	95	100	95 ^C	100 ^C	95	8	...	...	74	86 ^C	68
Saint Vincent and the Grenadines	100	97	84	100	100	97	7	...	...	89	100	100
Sint Maarten (Dutch part)	NA	...	91	89	91	89	2	...	91	86	90	...	
Suriname	NA	79	93	95	95	95	0	...	...	60	98	39
Trinidad and Tobago	NA	...	100	100	100	100	0	...	100	94	90	92	
Turks and Caicos Islands	100	...	91	93	91	93	-2	...	...	85	92	83

*Bonaire, St. Eustatius, and Saba.

(A) <2years of age; (B) children aged 19-35; (C) reported coverage >100%; (D) diphtheria-tetanus-pertussis containing vaccine; (E) no data but in schedule; (F) coverage report for measles-rubella vaccine in children <1 year of age; (G) target age groups vary by country; (H) fractional dose.

NOTE: HepB/Birth column, Brazil, and Panama data was updated and appears different from the printed version (4 December 2019)

morbidity data

	23	24	25	26	27	number of reported cases			31	32	33	34
	confirmed cases				neonatal tetanus	yellow fever	total tetanus	pertussis	diphtheria	mumps	Hib meningitis	meningitis pneumo-cocco
	VDPV ^(A)	measles	rubella	CRS								
	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018
The Americas	2	16,823	4	0	10	1,326	451	21,364	894	67,890	97	1,650
North America	0	400	2	0	0	0	21	15,120	4	3,038	49	1
Bermuda	0	0	0	0	0	0	0	2	0	0	0	1
Canada	0	28	0	0	0	0	1	1,679	4	787	23	...
United States of America ^B	0	372 ^C	2 ^C	...	...	0	20	13,439	0	2,251	26 ^E	...
Latin America and the Caribbean	2	16,423	2	0	10	1,326	430	6,244	890	64,852	48	1,649
Latin America	2	16,422	2	0	10	1,326	429	6,243	890	64,837	48	1,648
Mexico	0	5	2	0	0	0	23	783	0	...	0	7
Central America	0	1	0	0	1	0	24	263	0	15,574	1	26
Belize	0	0	0	0	0	0	2	2	0	11	0	...
Costa Rica	0	0	0	0	0	0	0	36	0	127	0	...
El Salvador	0	0	0	0	0	0	4	11	0	232	1	21
Guatemala	0	1	0	0	0	0	0	67	0	440	...	4
Honduras	0	0	0	0	1	0	13	74	0	14,761	0	1
Nicaragua	0	0	0	0	0	0	3	53	0	3	0	0
Panama	0	0	0	0	0	0	2	20	0	...	...	...
Latin Caribbean	0	0	0	0	3	0	44	156	106	1,572	10	95
Cuba	0	0	0	0	0	0	0	0	0	0	10	84
Dominican Republic	0	0	0	0	0	0	44	147	1	1,572	...	1
French Guiana	...	...	...	...	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...	...	...	...	...
Haiti	0	0	0	0	3	...	...	9	105	...	0	10
Martinique	...	...	...	...	...	...	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...	...	...	...
Andean Area	1	6,048	0	0	6	12	126	1,094	783	21,840	10	208
Bolivia	0	0	0	0	0	1	0	21	0	36	1	6
Colombia	1	208	0	0	5	1	33	416	8	19,105	9	199
Ecuador	0	19	0	0	0	0	59	30	0	2,699	0	0
Peru	0	42	0	0	1	10	23	483	0	0	0	3
Venezuela	0	5,779 ^D	0	0	0	0	11	144	775	...	...	...
Brazil	0	10,330	0	0	0	1,307	198	2,125	1	...	...	1,031
Southern Cone	1	38	0	0	0	7	14	1,822	0	25,851	27	281
Argentina	1	14	0	0	0	7	6	900	0	7,715	23	56
Chile	0	24	0	0	0	0	3	682	0	14,865	0	165
Paraguay	0	0	0	0	0	0	5	53	0	1,626	2	38
Uruguay	0	0	0	0	0	0	0	187	0	1,645	2	22
Non-Latin Caribbean	0	1	0	0	0	0	1	1	0	15	0	1
Anguilla	0	0	0	0	0	0	...	0	0	...	0	...
Antigua and Barbuda	0	1	0	0	0	0	0	0	0	0	0	0
Aruba	0	0	0	0	0	0	0	1	0	5	0	0
Bahamas	0	0	0	0	0	0	0	0	0	0	0	...
Barbados	0	0	0	0	0	0	0	0	0	0	...	0
BES*	...	...	...	...	...	...	...	...	...	...	...	...
British Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0
Cayman Islands	0	0	0	0	0	0	0	0	0	0	0	0
Curaçao	0	0	0	0	0	0	...	...	0	...	...	...
Dominica	0	0	0	0	0	0	0	0	0	0	0	0
Grenada	0	0	0	0	0	0	0	0	0	0	0	...
Guyana	0	0	0	0	0	0	0	0	0	0	0	0
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0
Montserrat	0	0	0	0	0	0	0	0	0	0	0	...
Saint Kitts & Nevis	0	0	0	0	0	0	0	0	0	0	0	0
Saint Lucia	0	0	0	0	0	0	1	0	0	0	0	0
Saint Vincent and the Grenadines	0	0	0	0	0	0	0	0	0	0	0	0
Sint Maarten (Dutch part)	0	0	0	0	0	0	0	0	0	1	0	1
Suriname	0	0	0	0	0	0	...	...	0	9	...	...
Trinidad and Tobago	0	0	0	0	0	0	0	0	0	0	0	0
Turks and Caicos Islands	0	0	0	0	0	0	0	0	0	0	0	0

*Bonaire, St. Eustatius, and Saba.

(A) no countries reported wildpolio virus in the Americas; (B) Morbidity and Mortality Weekly Report (MMWR), National Notifiable Diseases Surveillance Systems (NNDSS), provisional data as of epidemiological week 33 (August 2019); (C) Measles/Rubella Weekly Surveillance Bulletin, 2018;

(D) re-establishment of endemic transmission; (E) invasive disease, age <5 years.

program management and financing

	35	36	37	38	39	40	41	42	43	44
	years covered by multi-year plan for immunization	number of NITAG meetings	total number of districts/ municipalities	% of municipalities w/ coverage level ≥95% DTP3 2018	% of children in municipalities w/ coverage level ≥95% DTP3 2018	plan for immunization injection safety	number of "serious" ESAVIs reported	spending on routine immunization financed using gov't funds (%)	spending on vaccine purchases financed using gov't funds (%)	budget line for vaccine purchases
		2018	2018	2018	2018	2018	2018	2018	2018	2018
The Americas		140	14,956	45	28					
North America		8	65							
Bermuda	no	2	1	100	100	yes	1	100	100	yes
Canada	...	3	13 ^A	8	...	no	225	...	...	...
United States of America	...	3	51 ^B	...	...	yes	3,004	...	...	yes
Latin America and the Caribbean		132	14,891	45	28					
Latin America		92	14,735	45	28					
Mexico	2013-2018	3	2,463	40	30	no	199	100	100	yes
Central America		41	1,216	40	37					
Belize	no	2	6	67	63	yes	0	77	100	yes
Costa Rica	2015-2020	11	81	47	38	yes	...	100	100	yes
El Salvador	2014-2019	3	262	24	18	yes	28	99	100	yes
Guatemala	2018-2020	12	338	38	24	yes	0	100	100	yes
Honduras	2016-2020	3	298	37	39	yes	33	86	96	yes
Nicaragua	2016-2020	2	153	83	85	yes	9	76	67	yes
Panama	2020	8	78	27	37	yes	0	92	100	yes
Latin Caribbean		13	465	54	42					
Cuba	2019-2020	12	168	88	93	yes	5	99	99	yes
Dominican Republic	2019-2022	NA	157	45	42	yes	no	99	100	...
French Guiana	...	...	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...	...	...
Haiti	2016-2020	1	140	24	21	yes	0	14	25	yes
Martinique	...	...	...	...	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...	...
Andean Area		12	3,891	42	25					
Bolivia	2016-2020	4	339	14	30	yes	0	91	100	yes
Colombia	2016-2020	SI	1,122	52	41	NA	376	100	100	yes
Ecuador	no	0	221	24	9	no	4	100	100	yes
Peru	2015-2019	8	1,874	48	25	yes	68	100	100	yes
Venezuela	no	NA	335	20	9	yes	...	...	...	...
Brazil	2016-2019	2	5,570	50	24	yes	2830	100	100	yes
Southern Cone		21	1,130	38	21					
Argentina	2017-2018	3	512	38	15	yes	72	100	100	yes
Chile	2010-2020	9	346	54	43	no	126	100	100	yes
Paraguay	no	4	252	13	10	yes	22	100	100	yes
Uruguay	2015-2020	5	20	55	34	yes	72	100	100	yes
Non-Latin Caribbean		40	156	56	66					
Anguilla	no	2	3	33	34	yes	0	98	100	no
Antigua and Barbuda	no	2	8	75	71	no	2	100	100	yes
Aruba	no	2	6	83	74	yes	0	...	...	no
Bahamas	no	2	16	63	13	yes	0	100	100	no
Barbados	no	2	10	40	29	no	1	99	100	yes
BES*	...	...	...	...	...	...	...	...	...	...
British Virgin Islands	2019-2023	2	4	0	0	yes	0	54	100	no
Cayman Islands	no	2	6	33	3	yes	0	100	100	yes
Curaçao	2019-2020	2	1	0	0	no	2	100	100	yes
Dominica	no	2	7	43	27	yes	2	100	100	no
Grenada	2016-2025	2	7	43	31	yes	0	96	100	yes
Guyana	2017-2021	2	13	46	54	yes	...	82	96	yes
Jamaica	no	2	13	85	78	yes	...	100	100	yes
Montserrat	no	2	4	0	0	no	0	...	...	yes
Saint Kitts & Nevis	no	2	17	82	92	yes	0	...	...	no
Saint Lucia	no	2	8	38	44	yes	0	97	100	no
Saint Vincent and the Grenadines	no	2	9	56	52	no	...	99	100	no
Sint Maarten (Dutch part)	no	2	1	0	0	no	...	100	100	...
Suriname	...	2	10	30	53	yes	2	98	100	yes
Trinidad and Tobago	no	2	9	100	100	no	...	100	100	yes
Turks and Caicos Islands	no	2	4	75	14	no	0	100	100	no

*Bonaire, St. Eustatius, and Saba.

(A) reports number of provinces and territories; (B) reports number of states.

surveillance indicators

Acute Flaccid Paralysis (AFP), 2018*

Country	Number of AFP cases	AFP rate (x 100,000 <15 years old)	% of cases investigated within <48 hours	% of cases with 1 adequate sample	Number of compatible cases
Argentina	200	1.82	35	80	0
Bolivia	45	1.29	96	80	0
Brazil	501	1.06	98	65	1
Canada	49	0.82	...	...	0
CARPHA	8	0.45	75	38	0
Chile	64	1.78	73	61	0
Colombia	168	1.45	51	85	0
Costa Rica	15	1.41	67	80	0
Cuba	27	1.48	81	96	0
Dominican Republic	15	0.48	33	93	0
Ecuador	57	1.21	100	75	0
El Salvador	42	2.58	31	93	0
Guatemala	59	0.98	36	76	0
Haiti	9	0.25	89	22	0
Honduras	50	1.55	60	92	0
Mexico	708	2.10	99	90	0
Nicaragua	19	1.05	100	100	0
Panama	16	1.49	81	81	0
Paraguay	36	1.72	83	94	0
Peru	77	0.88	78	71	0
Uruguay	6	0.82	100	50	0
Venezuela	85	0.97	99	68	1
TOTAL/AVERAGE	2,253	1.00	83	79	2

Source: Integrated Surveillance Information System, Polio Eradication Surveillance System, and country reports to FPL-IM/PAHO.

*Data as of epidemiological week 33 (August 2019).

Measles/Rubella/CRS Surveillance Indicators, 2018*

Country	Number of suspect cases	% of cases with adequate investigation	% of cases with adequate samples	% of samples received in lab ≤5 days	% of lab samples results ≤4 days	Rate of suspected MR cases/100,000 population	Rate of suspected CRS cases/10,000 live births
Argentina	985	6	77	73	68	2.2	0.3
Bolivia	248	100	93	71	81	2.2	0.0
Brazil	30104	92	85	70	48	14.3	0.2
CARPHA	353	87	98	15	76	4.8	8.8
Chile	591	46	78	89	92	3.2	5.8
Colombia	6669	80	98	90	94	13.5	5.0
Costa Rica	66	42	67	92	77	1.3	2.8
Cuba	2596	100	100	100	100	22.6	0.0
Dominican Republic	184	14	98	73	49	1.7	0.0
Ecuador	1030	99	94	73	70	6.1	0.0
El Salvador	522	66	98	98	94	8.1	0.0
Guatemala	519	55	98	69	88	3.0	0.1
Haiti	213	89	93	60	28	1.9	0.4
Honduras	207	73	98	84	99	2.2	1.1
Mexico	4018	97	99	92	86	3.1	0.7
Nicaragua	286	96	99	95	94	4.6	4.0
Panama	69	87	91	64	90	1.7	0.4
Paraguay	901	78	95	88	94	12.8	0.0
Peru	1178	88	92	82	56	3.6	0.0
Uruguay	14	100	64	64	43	0.4	0.0
Venezuela	4121	99	46	35	33	12.7	0.0
TOTAL/AVERAGE	54,875	89	86	74	61	8.5	0.5

Source: Integrated Surveillance Information System, Measles Elimination Surveillance System, and country reports to FPL-IM/PAHO.

*Data as of epidemiological week 33 (August 2019).

technical notes and data sources

Main Data Sources

For detailed information on demographic data and socioeconomic indicators, please visit: www.paho.org/datastatistics.

Demographic data (Columns 1-3,5): World Population Prospects: The 2019 Revision. New York. Accessed June 27, 2019 (<http://esa.un.org/wpp/>). For countries not included in the UN World Population Prospects: U.S. Bureau of the Census. International Data Base. Accessed July 3, 2019 (<https://www.census.gov/data-tools/demo/idb/informationGateway.php>). Women of childbearing age includes women aged 15 to 49 years.

Infant mortality rate (1,000 lb) or number of deaths (N) (Column 4): PAHO/WHO. Data provided by Ministries of Health or National Health Agencies of countries. Washington D.C., 2019. As of August 2019.

Socioeconomic indicators (Columns 6-10): The World Bank (2019). World Development Indicators 2019. Washington, D.C. June 2019 Update. Accessed June 24, 2019. (<http://databank.worldbank.org/data/home.aspx>). Estimates of the national health expenditure: PAHO/WHO. Data compiled by the Department of Health Systems and Services from the Global Health Expenditure Database. Washington D.C., 2019. As of August 2019. (<http://www.who.int/health-accounts/ghed/en/>).

Immunization coverage, immunization program management, and financing information (Columns 11-22, 35-44): Annual country reports to Comprehensive Family Immunization Unit (IM)/PAHO via PAHO-WHO/UNICEF Joint Reporting Form (JRF); 2019.

Morbidity (Columns 23-34): Annual country reports to IM/PAHO via JRF, vaccine-preventable disease specific surveillance reports for measles/rubella and polio to IM/PAHO; 2018-2019.

Surveillance indicators: Vaccine-preventable-disease-specific surveillance reports for measles/rubella and acute flaccid paralysis/polio to IM/PAHO; 2018-2019.

Symbols and Abbreviations

(pop) population; (lb) live births; (NA) not applicable; (...) no data; (ppp) purchase power parity; (int'l) international; (GDP) gross domestic product; (BCG) bacille Calmette-Guérin (anti-tuberculosis vaccine); (HepB) hepatitis B; (IPV1) first dose of inactivated polio vaccine; (Polio3) third dose of polio vaccine (oral polio vaccine or inactivated polio vaccine); (DTP1) first dose of diphtheria-tetanus-pertussis vaccine (as DTP or DTP containing vaccine); (DTP3) third dose of diphtheria-tetanus-pertussis vaccine (as DTP containing vaccine); (Rotavirus) last dose of rotavirus vaccine; (PCV3) third dose of pneumococcal conjugate vaccine; (DTP4) first booster dose after the primary series consisting of three doses of diphtheria-tetanus-pertussis vaccine (as DTP or DTP containing vaccine); (MMR1) first dose of measles, mumps, rubella vaccine; (MMR2) second dose of measles, mumps, rubella vaccine (when offered in the routine program; (VDPV)

vaccine-derived poliovirus; (CRS) congenital rubella syndrome; (Hib) *Haemophilus influenzae* type b; (NITAG) national immunization technical advisory group; (ESAVI) event supposedly attributable to vaccination or immunization; (gov't) government; (CARPHA) Caribbean Public Health Agencies; (HPV) human papillomavirus; (VINUVA) *Vigilancia Centinela de Nuevas Vacunas*; (Hi) *Haemophilus influenzae*; (Spn) *Streptococcus pneumoniae*; (Nm) *Neisseria meningitidis*; (m) months; (y) years. Country codes: (ARG) Argentina; (BOL) Bolivia; (COL) Colombia; (ECU) Ecuador; (HND) Honduras; (NIC) Nicaragua; (PER) Peru; (PRY) Paraguay; (SLV) El Salvador.

Technical Notes

Immunization coverage: Proportion of children aged <1 year vaccinated with one dose of BCG vaccine, hepatitis B vaccine given at birth, first dose of inactivated polio vaccine, the third dose of polio vaccine (oral polio vaccine or inactivated polio vaccine), the first dose of DTP, the third dose of DTP, and the last dose of rotavirus vaccine (2nd or 3rd dose depending on the vaccine used), respectively. Proportion of children vaccinated with the 3rd dose of PCV in children < or ≥1 year according to vaccine schedule of the country. Proportion of children aged 1 year vaccinated with the first booster of DTP vaccine, and one dose of MMR vaccine, respectively. Proportion of children vaccinated with a second dose of MMR vaccine, as targeted in countries offering a second MMR dose in the routine program. Coverage rates are expressed as a percentage of the corresponding mid-year population, as reported by the country. Reported coverage rates ≥100% are presented as 100% with a footnote. Regional and subregional aggregated data express average values weighted by population aged <1 year and 1 year, when country data is available.

Dropout rate DTP1-DTP3: Number of DTP1 doses administered minus the number of DTP3 doses administered (among children aged <1 year) divided by the number of DTP1 doses, expressed as a percentage.

Morbidity: Number of confirmed cases of VDPV, measles, rubella, CRS, neonatal tetanus, yellow fever, non-neonatal tetanus, pertussis, diphtheria, Hib meningitis, mumps, and meningitis pneumococci. Subregional aggregated data is the sum of the totals. These are not rates; hence, inter-country comparisons may not be appropriate.

Immunization program management and financing:

- Multi-year plan for immunization: Existence of an immunization strategic plan for more than one year.
- Number of NITAG meetings: Number of times the NITAG met in 2018. NITAGs provide recommendations on immunization practices, including advice on vaccines to be included into the national immunization schedule.
- Number of municipalities and number of children <1 year of age living in these municipalities reaching coverage ≥95% for DTP3: Proportion of municipalities and proportion of children <1 year of age living in these municipalities reporting coverage levels equal to or greater than 95% for

Selected Information Products from the Comprehensive Family Immunization Unit



- **Immunization Newsletter:** A quarterly publication that includes information on all aspects of program implementation, from scientific articles on vaccine-preventable diseases and vaccines to practical matters related to the day-to-day running of an immunization program. Copies of the newsletter are available online at www.paho.org/immunization/newsletter.



- **Tools for Monitoring the Coverage of Integrated Public Health Interventions:** Immunization programs in the Americas have extensive experience with methodologies and tools to monitor vaccination coverage. Countries have adopted and improved these instruments, adapting them to a range of target populations and epidemiological contexts. Moreover, the cumulative experience gained in the area of vaccine-preventable diseases (VPDs) may be applied to other programs, like deworming, which uses very effective interventions to reduce the burden of disease caused by soil-transmitted helminths. PAHO's Comprehensive Family Immunization Unit (IM) and Regional Program on Neglected Infectious Diseases (NIDs) developed this toolkit to systematize and integrate methods to monitor coverage of health interventions among preschool- and school-age populations, as well as offer strategies and opportunities for joint collaboration.
- **Measles/Rubella (MR) and Polio Bulletins:** Weekly epidemiological surveillance bulletins. Available online at www.paho.org/immunization/MeaslesRubellaBulletin and www.paho.org/immunization/PolioBulletin.

DTP3, respectively, expressed as a percentage. Municipalities are defined as the third administrative level (country level being first), unless otherwise stated.

- Plan for immunization injection safety: the existence of a plan to ensure the safety of injections, including training, supervision, and the proper use of safety boxes. This plan may be part of the annual immunization plan of action.

- Number of ESAVIs reported as “serious”: An ESAVI will be considered serious if it results in death, is life-threatening, requires in-patient hospitalization or prolongation of existing hospitalization, results in persistent or significant disability/incapacity, or is a congenital anomaly/birth defect. Other situations, such as other important medical events that may jeopardize the patient or may require intervention to prevent one of the outcomes above, should also be considered serious after applying medical and scientific judgment.

- Spending on routine immunization financed using government funds: Percentage of all recurrent immunization-specific spending that was financed using government funds (for all recurrent inputs, including vaccines, injection supplies, salaries and per-diems of health staff

working full-time on immunization, transport, vehicles and cold chain maintenance, training, social mobilization, monitoring, and surveillance). This excludes any external financing from donors, but may include loans.

- Spending on vaccine purchases financed using government funds: Percentage of all vaccine spending that was financed using government funds. This excludes any external financing from donors, but may include loans.

- Budget line for vaccine purchase: Specific line in the national budget for the purchase of vaccines.

Surveillance indicators: For measles/rubella definitions refer to PAHO. Measles Elimination: Field Guide. (Scientific and Technical Publication No. 605). Washington, DC: PAHO, 2005. For acute flaccid paralysis definitions refer to PAHO. Poliomyelitis Eradication: Field Guide. (Scientific and Technical Publication No. 607). Washington DC: PAHO, 2005. Available at http://www.paho.org/english/ad/fch/im/FieldGuide_Index.htm.

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Seasonal Influenza Vaccine Use in the Americas, 2018

Country	Healthy Children		Elderly Adults		Other Risk Groups		
	Schedule	Coverage ^(A) (%)	Schedule	Coverage (%)	Health Workers (%)	Pregnant Women (%)	Chronic Diseases ^(G)
Anguilla	NA	NA	≥65y	... ^C	yes	NA	yes
Antigua and Barbuda	>6m	...	>60y	...	yes	NA	yes
Argentina	6m-24m	70	>65y	100 ^F	98	72	yes
Aruba	NA	NA	>60y	...	yes	yes	yes
Bahamas	>6m	...	≥65y	...	yes	yes	yes
Barbados	NA	NA	>65y	... ^C	yes ^C	NA	no
Belize	6m-23m	71	≥65y	41	78	48	yes
Bermuda	6m-18y	12	>65y	9	15	16	NA
BES*	...	...	...	...	...	...	...
Bolivia	6m-23m	84	>60y	72	100 ^E	87	yes
Brazil	6m-<5y	88	≥60y	97	95	81	yes
British Virgin Islands	NA	NA	>60y	... ^C	6	NA ^C	yes
Canada	≥6m	...	>65y	70	yes	yes	yes
Cayman Islands	≥6m	...	≥60y	...	yes	yes	yes
Chile	6m-5y	71	≥65y	65	100 ^E	90	yes
Colombia	6m-23m	66	≥50y	...	NA	69	yes
Costa Rica	6m-<5y	77	≥60y	... ^C	72	73	yes
Cuba	6m-2y	85	≥75y	97	97	88	yes
Curaçao	NA	NA	NA	NA	NA	NA	NA
Dominica	6m-35m	...	≥65y	29	19	yes	yes
Dominican Republic	6m-23m	19 ^B	yes	...	yes	87	yes
Ecuador	6m-4y	94	>65y	100 ^F	65	67	yes
El Salvador	6m-4y	64	NA	NA	84	78	yes
Grenada	6m-17y	... ^C	>65y	...	yes ^C	yes ^C	yes
Guatemala	6m-35m	... ^C	NA ^F	NA ^F	90	yes ^C	yes
Guyana	NA	NA	NA	NA	NA	NA	NA
Haiti	NA	NA	NA	NA	NA	NA	NA
Honduras	NA ^D	NA ^D	>60y	79	100 ^E	82	yes
Jamaica	6m-17y	... ^C	≥65y	... ^C	23	yes ^C	yes
Mexico	6m-59m	88	>60y	94	100 ^E	81	yes
Montserrat	NA	NA	>60y	... ^C	yes ^C	NA	yes
Nicaragua	NA	NA	NA	NA	100 ^E	91	yes
Panama	6m-18y	57	>60y	100 ^F	95	64	yes
Paraguay	6m-36m	24	≥60y	34	54	28	yes
Peru	6m-<2y	55	>60y	...	yes ^C	38	yes
St. Kitts and Nevis	NA	NA	>60y	... ^C	yes	2	yes
St. Lucia	NA	NA	≥60y	... ^C	yes ^C	73	yes
St. Vincent and the Grenadines	NA	NA	NA	NA	NA	NA	NA
Sint Maarten (Dutch part)	NA	NA	NA	NA	NA	NA	NA
Suriname	NA	NA	>60y	... ^C	yes ^C	yes	yes
Trinidad and Tobago	6m-5y	... ^C	≥65y	... ^C	17	yes ^C	yes
Turks and Caicos Islands	6m-35m	... ^C	≥55y	... ^C	...	...	yes
United States of America**	≥6m-17y	58	>65y	65	yes	yes	yes
Uruguay	6m-5y	24	>65y	32	57	25	yes
Venezuela	6m-23m	0	≥60y	0	0	0	yes

*Bonaire, St. Eustatius and Saba; **USA data during 2017-2018 influenza season; m-month(s); y-year(s).

(A) pediatric coverage formula: ((2nd dose+single dose)/denominator)*100; (B) from months of November-December; (C) no denominators defined; (D) with chronic disease; (E) reported coverage >100%; (F) institutionalized population; (G) countries including adults with chronic diseases in their policy.

Source: Country reports through the PAHO-WHO/UNICEF Joint Reporting Form (JRF), 2019; USA data source: <https://www.cdc.gov/flu/fluview/coverage-1718estimates-children.htm>.

Dashboard of Selected Regional Immunization Action Plan (RIAP) Objectives in the Americas

General (GO) and Strategic Objectives (SO)	Baseline (2013)	Target (2020)	2018
GO 1.2.1 Number of countries and territories in which endemic transmission of measles or rubella virus has been reestablished	0	0	1*
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	19	35	16
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	12	35	27
SO 4.2.1 Number of countries and territories that have dropout rates below 5% between the first and the third dose of DTP vaccine	11	35	28
SO 4.2.2 Number of countries and territories with coverage above 95% for third dose of DTP vaccine sustained for three or more consecutive years	13	35	6
SO 4.2.5 Number of countries and territories that have a national system for a computerized nominal immunization registry	3	10	24

Source: Country reports through the PAHO-WHO/UNICEF Joint Reporting Form (JRF), 2019; IM/PAHO.
* Venezuela: 30 June 2018; Brazil: 19 February 2019.

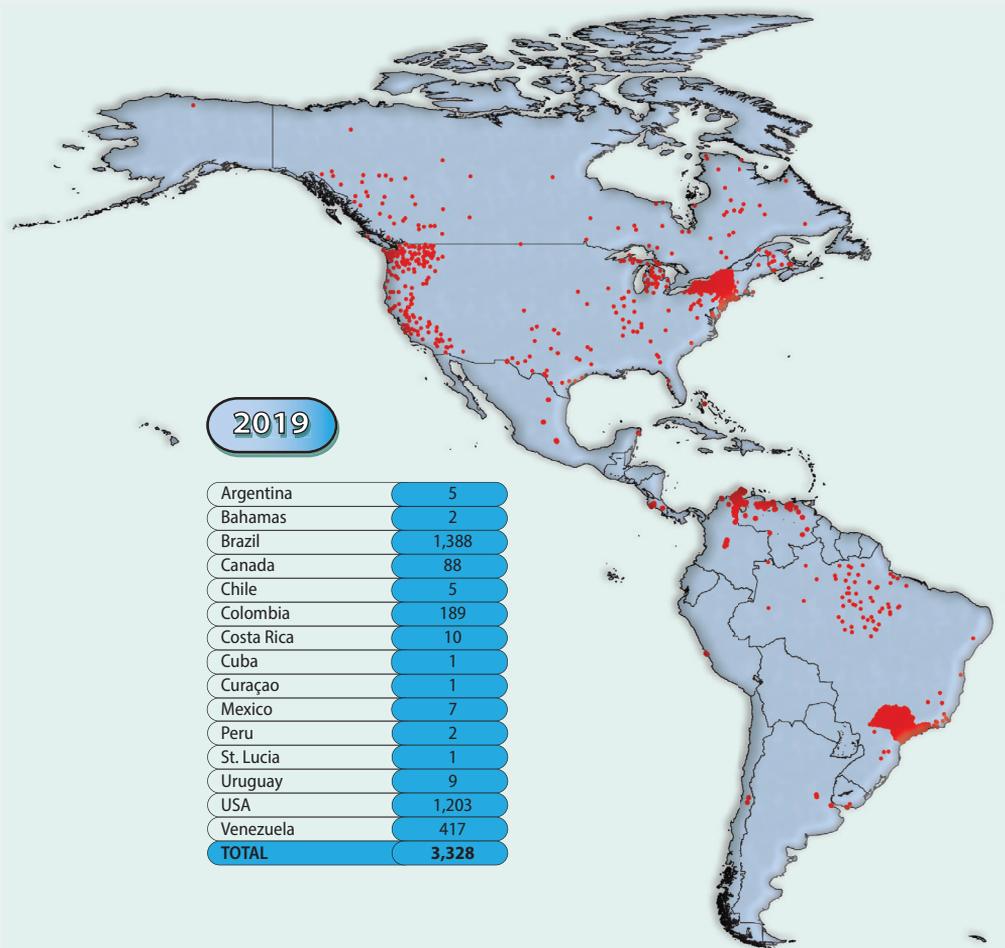
Number of 2nd HPV Vaccine Doses Administered Latin America and the Caribbean, 2018

Country	Type of Population	Number of Second HPV Vaccine Dose by Age						
		9 years	10 years	11 years	12 years	13 years	14 years	15+ years
Anguilla	female	0	2	1	1	0	0	0
Antigua and Barbuda	female and male	4	0	0	0	0	5	300
Argentina	female and male	0	0	359,101	0	0	0	0
Aruba	female	0	0	404	0	0	0	0
Bahamas	female	27	263	190	100	65	193	453
Barbados	female and male	0	0	776	0	0	0	0
Belize	female	297	1,149	549	229	89	29	0
Bermuda	female	0	0	0	0	0	0	0
BES*	...	...	...	...	...	...	...	...
Bolivia	female	0	69,028	0	0	0	0	0
Brazil	female and male	308,185	655,644	1,009,068	1,272,145	1,524,720	1,604,296	4,446,207
British Virgin Islands	...	...	...	...	...	...	...	...
Canada	...	...	...	...	...	...	...	...
Cayman Islands	female and male	0	1	81	52	12	12	51
Chile	female	794	91,105	0	0	0	0	0
Colombia	female	32,635	28,936	19,042	13,936	9,643	6,528	21,193
Costa Rica	...	...	...	...	...	...	...	...
Cuba	...	...	...	...	...	...	...	...
Curaçao	...	...	...	...	...	...	...	...
Dominica	...	...	...	...	...	...	...	...
Dominican Republic	female	5,871	0	0	0	0	0	0
Ecuador	female	140,294	0	0	0	0	0	0
El Salvador	...	...	...	...	...	...	...	...
Grenada	...	...	...	...	...	...	...	...
Guatemala	female	0	28,939	86,524	3,935	3,142	1,777	0
Guyana	female	623	928	715	481	467	0	0
Haiti	...	...	...	...	...	...	...	...
Honduras	female	0	0	53,703	5,515	0	0	0
Jamaica	female	0	3	40	838	801	145	7
Mexico	female	0	1,097,095	0	0	0	0	0
Montserrat	female	0	0	0	1	1	1	0
Nicaragua	...	...	...	...	...	...	...	...
Panama	female and male	0	46,288	0	0	0	0	0
Paraguay	female	0	36,162	35,563	347	157	87	19
Peru	female	9,491	74,324	80,846	15,551	6,779	2,986	3,188
St. Kitts and Nevis	...	...	...	...	...	...	...	...
St. Lucia	...	...	...	...	...	...	...	...
St. Vincent and the Grenadines	female	0	0	32	0	0	0	0
Sint Maarten (Dutch part)	...	...	...	...	...	...	...	...
Suriname	female	0	0	0	0	0	0	0
Trinidad and Tobago	female	2	0	2,683	0	0	0	3,235
Turks and Caicos Islands	...	...	...	...	...	...	...	...
United States of America	...	...	...	...	...	...	...	...
Uruguay	female	1	5	2,180	7,879	5,796	845	789
Venezuela	...	...	...	...	...	...	...	...

*Bonaire, St. Eustatius and Saba.

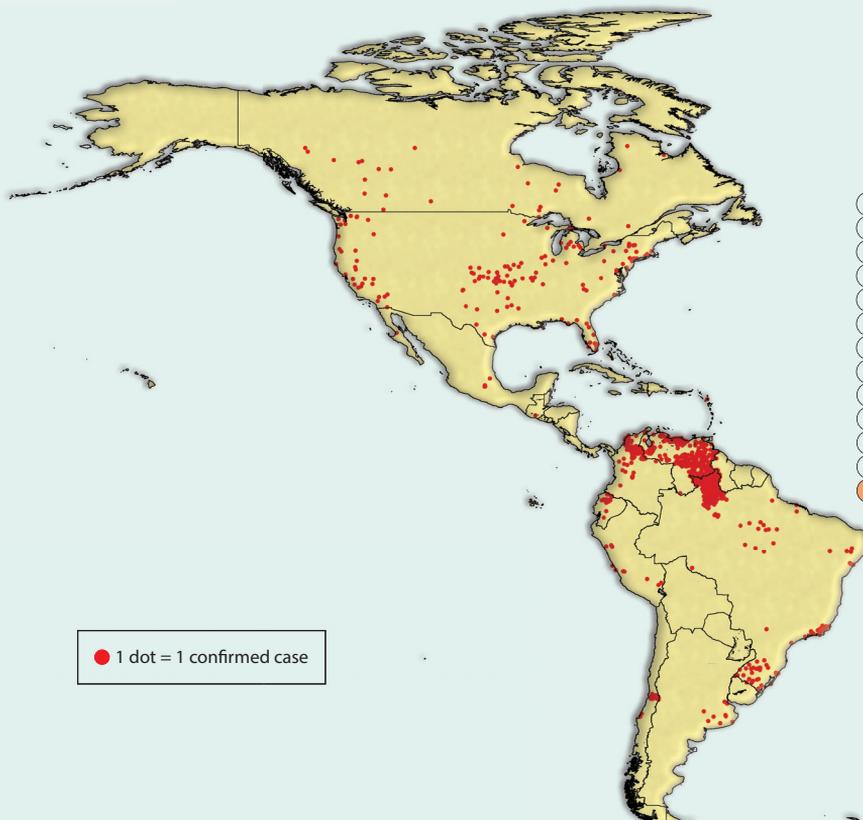
Source: Country reports through the PAHO-WHO/UNICEF Joint Reporting Form (JRF), 2019.

Distribution of Confirmed Measles Cases by Countries The Americas, 2018 and 2019*



2019

Argentina	5
Bahamas	2
Brazil	1,388
Canada	88
Chile	5
Colombia	189
Costa Rica	10
Cuba	1
Curaçao	1
Mexico	7
Peru	2
St. Lucia	1
Uruguay	9
USA	1,203
Venezuela	417
TOTAL	3,328



2018

Argentina	14
Antigua and Barbuda	1
Brazil	10,330
Canada	28
Chile	24
Colombia	208
Ecuador	19
Guatemala	1
Mexico	5
Peru	42
USA	372
Venezuela	5,779
TOTAL	16,823

● 1 dot = 1 confirmed case

Source: Integrated Surveillance Information System, Measles Elimination Surveillance System, country reports to IM/PAHO, and Measles Epidemiological Alert, PAHO.

* Data as of epidemiological week 33 (August 2019).

Epidemiological Surveillance Indicators for Diseases Preventable by New Vaccines in Selected Countries, Latin America and the Caribbean, 2018

Since 2007, PAHO's Comprehensive Family Immunization Unit (IM) within the Family, Health Promotion and Life Course Department (FPL) has been promoting the implementation of sentinel hospital surveillance for rotavirus diarrhea, and bacterial pneumonia and meningitis among children under 5 years old in Latin America and the Caribbean. As of 2014, this network was incorporated into the World Health Organization's global network.

Pneumonia

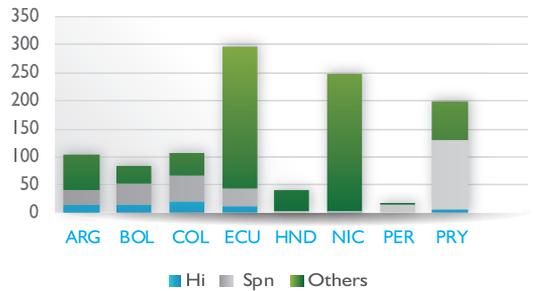
Classification of suspected bacterial pneumonia cases among children <5 years, selected countries, 2016-2018 (n=20,042)



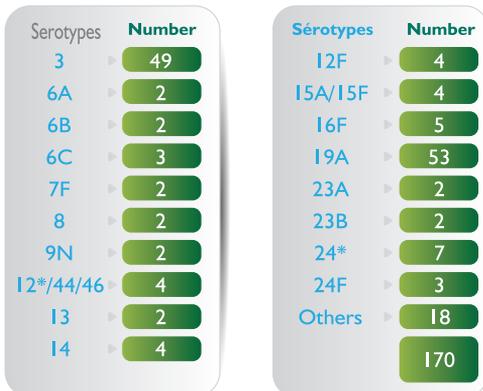
Deaths among probable and confirmed cases: 218 (=2%)

*Probable case of bacterial pneumonia: All suspected cases where the thorax radiography shows a radiological pattern compatible with bacterial pneumonia.

Number of principal etiological agents identified in bacterial pneumonia among children <5 years, selected countries 2016-2018.



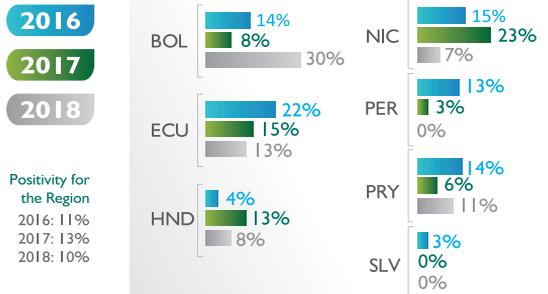
Number of pneumococcal serotypes more frequently identified (n=170)



* Correspond to groups, additional tests are required for complete serotyping.

Rotavirus

Positive rotavirus cases among children <5 years, sentinel surveillance for diarrhea in selected countries, 2016-2018, (n=12,454)

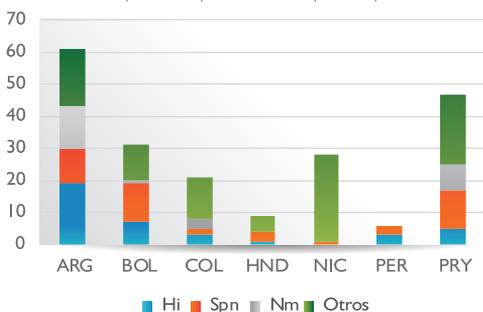


Positivity for the Region
2016: 11%
2017: 13%
2018: 10%

Deaths among the confirmed (n=1,395): 4 (0.28%)

Meningitis

Number of bacteria identified among meningitis cases in children <5 years, selected Latin American countries (VINUVA), 2016-2018 (n=203)



34 (17%) deaths among cases confirmed by laboratory

Percentage of etiological agents identified in bacterial meningitis cases among children <5 years, selected Latin American countries (VINUVA), 2016-2018 (n=203)

