

Immunization in the Americas

2011 Summary

Comprehensive Family Immunization
Family and Community Health



**Pan American
Health
Organization**



Regional Office of the
World Health Organization



preface

It has been twenty years since the last case of poliomyelitis caused by a wild poliovirus was recorded in the Americas (Peru, 1991). At the global level, significant progress has been made towards the goal of polio eradication and the circulation of wild poliovirus type 2 seems to have been interrupted. However, in four countries: Afghanistan, India, Nigeria, and Pakistan, endemic circulation has not been interrupted and in other, previously polio-free countries, circulation has been reestablished. Moreover, it is important to note that following the first documented outbreak of vaccine-derived poliovirus (VDPV) in the Dominican Republic and Haiti in 2000–2001, similar occurrences have popped-up in areas or marginalized zones of low coverage worldwide. These occurrences have highlighted the risk of VDPV outbreaks, in addition to the risk of wild polio importations to the Americas from countries that remain infected.

Since the interruption of the endemic transmission of measles in the Americas in November 2002, the occurrence of measles cases has been limited to importations and cases related to such importations in selected countries. However, the occurrence of large endemic outbreaks in Africa and Europe have already resulted in a 3-fold increase in the number of cases reported in the Americas in the first half of 2011, compared to the previous annual average of 157 cases between 2003 and 2010. No endemic rubella case has been reported since 2009.

Therefore, on this occasion, I would like to reiterate that country's immunization programs cannot let their guard down. On the contrary, efforts to reach and maintain high vaccination coverage rates in every municipality and ensure that the epidemiological surveillance system is capable of a timely detection and response to imported cases should be continued. Maintaining the achievements in immunization must be done while ensuring access to vaccines for everyone and expansion and acceleration of the introduction of new vaccines to all sectors of the population. For this reason, Vaccination Week in the Americas (VWA) – an initiative seeking to promote equity and access to vaccination, the transition from child to family immunization, Pan Americanism or solidarity between countries, and to keep immunization in the political agenda – celebrated its 9th anniversary in 2011. This year, it did so under the slogan "Vaccinate your Family, Protect your Community". Throughout the history of this lovely initiative, over 350 million individual of all ages have been vaccinated under its framework. The success of VWA has come to serve as a model for the implementation of sister initiatives in other Regions of the World Health Organization, reaching 180 countries in 2011 and inspiring a growing movement towards a World Vaccination Week in 2012.

I invite you to read the brochure *Immunization in the Americas*, a reference publication that summarizes the status of the immunization programs in the Region and illustrates the main challenges and achievements in immunization in the Americas.



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For this publication:

- Latin America is composed of Mexico, Central American Isthmus, 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.
- For this edition, we maintained the Netherlands Antilles composed of 6 islands as before its official dissolution in October 2010.

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)	crude birth rate (1,000 pop)	annual births average (thousands)	infant mortality rate or number of deaths (N) (1,000 lb)		women of childbearing age (thousands)	gross national income (US\$ per capita)		population below int'l poverty line (%) (latest available)	national health expenditure as a % of GDP		private expenditure	
				rate	(N)		year	current value		ppp value	2010		2010
The Americas	934,571	14.6	15,598.9	14.8			2009	2009	2009	...	...	...
North America	344,469	12.2	4,692.6	6.5		81,816	45,927	44,813	...	...	...	...
Bermuda	68	11.5	0.8	NA	4	2008	16	...	...	7.6 ^{o,a}	...	5.7 ^k
Canada	34,017	11.2	384.0	5.1		2007	8,256	41,980	37,280	...	8.2 ^f	3.4 ^{g,k}	
United States of America	310,384	13.8	4,307.7	6.6		2008	73,544	46,360	45,640	...	9.9 ^f	5.6 ^l	
Latin America & the Caribbean	590,102	17.0	10,906.3	...			158,572	7,194	10,621	...	...	...
Latin America	582,948	19.1	10,787.3	18.7			156,641	7,223	10,662	...	...	...
Mexico	113,423	19.3	2,201.2	14.7		2009	30,891	8,960	14,020	3.44 ^a	3.1 ^g	3.3 ^k	
Central American Isthmus	42,458	23.2	1,089.0	25.9			11,054	3,104	5,741	...	...	...
Belize	312	24.5	7.7	17.9		2009	84	3,740 ^a	5,990 ^a	...	1.0 ^h	1.3 ^l	
Costa Rica	4,659	15.7	73.5	9.4		2010	1,274	6,260	10,930	0.65	4.6 ^f	3.3 ^l	
El Salvador	6,193	20.2	125.9	21.5		2007	1,712	3,370	6,420	5.11 ^a	3.3 ^f	5.0 ^l	
Guatemala	14,389	32.2	470.5	30.0		2008	3,547	2,650	4,570	...	2.1 ^f	3.6 ^l	
Honduras	7,601	26.5	203.8	25.1		2010	1,964	1,800	3,710	23.25 ^b	4.6 ^f	4.2 ^l	
Nicaragua	5,788	23.6	137.7	...			1,555	1,000	2,540	15.81 ^c	5.5 ^f	4.2 ^l	
Panama	3,517	19.8	69.9	...			918	6,570	12,180	9.48 ^d	3.9 ^f	1.3 ^l	
Latin Caribbean	36,025	17.4	659.5	18.1			9,389	...	...	...	...	...
Cuba	11,258	9.9	111.7	4.5		2010	2,984	5,550 ^a	...	...	10.5 ^{g,h}	...
Dominican Republic	9,927	21.6	215.4	27.8		2010	2,587	4,550	8,110	4.29 ^b	1.4 ^{b,h}	4.4 ^l	
French Guiana	231	24.4	5.7	10.4		2009	59	...	...	...	...	...
Guadeloupe	461	13.9	6.4	8.7		2009	117	...	...	...	2.1 ^h	...
Haiti	9,993	26.5	266.0	...			2,588	...	...	...	...	2.8 ^b
Martinique	406	12.0	4.9	9.3		2009	102	...	...	...	...	...
Puerto Rico	3,749	13.2	49.4	8.8		2008	951	...	...	...	...	...
Andean Area	128,746	21.4	2,660.9	22.5			34,306	5,588	8,916	...	...	...
Bolivia	9,930	26.4	264.2	50.0		2003-2008	2,497	1,630	4,250	13.97 ^b	3.2 ^{o,e}	1.7 ^l	
Colombia	46,295	19.6	909.6	20.6		2008	12,604	4,990	8,600	16.01 ^d	3.5 ^g	2.5 ^l	
Ecuador	14,465	20.5	298.1	...			3,798	3,970	8,100	5.14	4.7 ^f	3.9 ^l	
Peru	29,077	20.2	592.0	20.0		2007	7,718	4,200	8,120	5.90	2.9 ^f	2.3 ^l	
Venezuela	28,980	20.5	596.9	15.8		2008	7,689	10,090	12,220	3.46 ^d	1.8 ^{b,f}	2.8 ^l	
Brazil	194,946	15.5	3,032.6	19.1		2009	53,783	8,070	10,160	3.80	3.6 ^e	3.7 ^l	
Southern Cone	67,349	17.6	1,144.1	10.8			17,218	7,598	12,927	...	...	...
Argentina	40,412	17.0	691.8	12.1		2009	10,194	7,550	14,090	0.87	5.3 ^{o,f}	3.2 ^l	
Chile	17,114	14.3	245.5	7.9		2009	4,559	9,470	13,420	0.83	5.1 ^g	3.2 ^l	
Paraguay	6,455	24.1	157.1	...			1,650	2,250	4,430	5.08 ^a	4.2 ^f	4.5 ^l	
Uruguay	3,369	14.7	49.7	7.7		2010	815	9,010	12,900	0.03	4.5 ^g	5.2 ^l	
Non-Latin Caribbean	7,154	14.9	118.9	...			1,931	7,298	10,989	...	...	...
Anguilla	15	13.0	0.2	...			4	...	...	...	4.2 ^{g,h}	2.5 ^l
Antigua & Barbuda	87	16.4	1.4	NA	18	2010	25	12,130	17,670	...	3.6 ^{g,h}	1.2 ^l	
Aruba	105	12.8	1.3	NA	5	2009	27	...	...	...	10.0 ^{b,f}	1.3 ^l
Bahamas, The	343	15.4	5.3	21.1		2009	97	...	...	...	3.4 ^h	3.3 ^l
Barbados	286	12.4	3.6	10.9		2009	76	...	...	...	5.7 ^h	2.9 ^k
Cayman Islands	50	12.3	0.6	NA	2	2010	13	...	...	...	3.0 ^b	...
Dominica	73	15.7	1.1	NA	13	2010	19	4,900	8,460	...	5.3 ^{g,h}	2.5 ^l	
Grenada	108	17.2	1.9	12.1		2010	28	5,580	7,710	...	5.3 ^{g,h}	4.7 ^l	
Guyana	754	18.0	13.6	...			196	2,660	3,270	...	...	2.0 ^l
Jamaica	2,741	18.4	50.5	24.1		2008	721	4,590	7,230	...	2.7 ^h	2.7 ^l	
Montserrat	5	11.7	0.1	NA	1	2010	2	...	...	...	9.0 ^{b,h}	...
Netherlands Antilles	229	14.1	3.2	...			59	...	...	...	14.0 ^{o,f}	1.2 ^l
Saint Kitts & Nevis	50	14.2	0.7	NA	12	2010	14	10,150	13,640	...	2.2 ^{b,h}	2.3 ^l	
Saint Lucia	161	14.8	2.4	...			45	5,190	8,860	...	2.4 ^{g,h}	2.8 ^l	
Saint Vincent & the Grenadines	104	14.9	1.6	16.8		2010	27	5,130	8,830	...	3.5 ^{b,h}	0.8 ^l	
Suriname	525	18.3	9.6	20.3		2009	138	4,760 ^a	6,730 ^a	...	...	0.4 ^l
Trinidad & Tobago	1,341	14.5	19.5	13.2		2009	392	16,700	24,970	...	2.0 ^h	1.9 ^k	
Turks & Caicos Islands	43	18.0	0.8	NA	4	2010	14	...	...	...	8.8 ^b	...
Virgin Islands (UK)	25	14.5	0.4	NA	7	2010	7	...	...	...	2.8 ^b	...
Virgin Islands (US)	110	11.5	1.3	NA	6	2008	26	...	...	...	...	...

(a) value 2008; (b) value 2007; (c) value 2005; (d) value 2006; (e) government expenditure in health functions, programs or activities; (f) includes health expenditure by social security and other social health insurance schemes; (g) value 2009; (h) Ministry of Health budget; (k) incl. health and/or medical care and personal care and/or domestic services; (l) health and/or medical care or medical care and expense (corresponds to COICOP 06).

reported immunization coverage

	11	12	13	14	15	16	17	18	19	20	21	22
	percentage of coverage									percentage of municipalities with coverage level \geq 95%		total number of districts/municipalities
	< 1 year of age						1 year of age			DTP3	MMR	
	BCG	polio3	DTP1	DTP3+Hib3	Hep B3	rotavirus	DTP4	MMR1	MMR2 ^k			
2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	
The Americas	95	92	93	93	92	67	83	92	70	58	59	15,105
North America	NA	92	100	94	93	44	79	90	89	...	...	64
Bermuda	NA	100	100	100 ^d	93	NA	79	93 ^d	89	...	...	NA
Canada ^a	NA	80 ^d	...	80 ^d	...	NA	...	93 ^d	...	...	...	13 ^l
United States of America ^a	NA	93 ^d	...	95 ^d	92 ^d	44 ^d	84 ^d	90 ^d	...	...	...	51 ^m
Latin America & the Caribbean	95	92	93	92	92	78	83	93	70	58	59	15,041
Latin America	95	92	93	92	92	78	83	93	70	58	59	14,873
Mexico	98	95	96	95	93	90	90	95	91	100	100	2,438
Central American Isthmus	97	96	96	95	95	69	94	95	79	54	57	1,208
Belize	98	96	100	96	96	NA	79 ^g	98	91	17	50	6
Costa Rica	77	93	83	88	89	NA	...	83	79	35	41	81
El Salvador	91	92	90	92	92	92	94	92	82	42	39	262
Guatemala	100 ^c	94 ^c	97 ^c	94 ^c	94 ^c	38	...	93 ^c	NA	55	54	332
Honduras	100 ^c	100 ^c	100 ^c	100 ^c	100 ^c	98	100	100 ^c	NA	67	71	298
Nicaragua	100 ^c	100 ^c	100 ^c	100 ^c	100 ^c	98	100 ^c	100 ^c	NA	60	62	153
Panama	100 ^c	95	100 ^c	94	94	89	70	100 ^c	73	49	83	76
Latin Caribbean	83	78	86	81	88		95	71	98	45	52	464
Cuba	99	100	96	96	96	NA	95	100 ^c	98	59	77	169
Dominican Republic	98	86	96	88	84	NA	...	87	NA	30	25	155
French Guiana	...	...	...	...	...	NA	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	NA	...	...	...	...	...	...
Haiti	64	62	75	69 ^f	NA	NA	NA	45 ^h	NA	...	...	140
Martinique	...	...	...	...	...	NA	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...	...	...	...
Andean Area	90	86	89	87	87	71	71	88	60	34	33	3,831
Bolivia	90	80	87	80	80	76	NA	79	NA	21	23	337
Colombia	84	88	81	88	88	74	79	89	73	28	25	1,123
Ecuador	100 ^c	100 ^c	100 ^c	100 ^c	100 ^c	100 ^c	70	100 ^c	91	61	66	170
Peru	95	92	97	93	93	75	69	94	57	31	40	1,834
Venezuela	92	73	89	78	78	48	61	79	31	20	21	367
Brazil	100 ^c	97	97	96	94	81	85	98	54	62	60	5,565
Southern Cone	96	92	88	92	92	57	83	95	90	49	52	1,367
Argentina	100 ^c	95	...	95	95	NA	86	100 ^c	98	35	51	511
Chile	96	92	93	92	92	NA	90	93	84	52	48	340
Paraguay	74	76	76	76	76	57	59	77	64	18	16	241
Uruguay	99	95	98	95	95	NA	...	95	...	89	91	275
Non-Latin Caribbean	96	94	94	94	93		77	91	72	66	64	168
Anguilla	100 ^c	100 ^c	100 ^c	100 ^c	100 ^c	NA	...	100 ^c	...	67	100	3
Antigua & Barbuda	NA	99	90	98	98	NA	98	98	...	88	100	8
Aruba	NA	98	100	98	96	NA	...	91	96	...	...	1
Bahamas, The	NA	97	100	99	98	NA	74	94	47	...	...	31
Barbados	NA	91	...	86	86	NA	...	85	96	...	...	8
Cayman Islands	...	...	...	...	...	...	...	...	...	...	...	6
Dominica	100 ^c	99	97	98	98	NA	...	100 ^c	100 ^c	100	100	7
Grenada	NA	94	91	97	97	NA	76	97	86	29	29	7
Guyana	98	95	100	95	95	38	...	95	82	...	...	13
Jamaica	95	94	92	94	94	NA	78	89	57	62	31	13
Montserrat	100 ^c	100 ^c	100 ^c	100 ^c	100 ^c	NA	...	100 ^c	100 ^c	100	100	4
Netherlands Antilles ^b	NA	95	...	95	90	NA	...	96	...	100	100	1
Saint Kitts & Nevis	91	91	90	96	96	NA	100 ^c	100 ^c	100 ^c	100	100	17
Saint Lucia	97	97	98	97	97	NA	80	95	74	44	33	9
Saint Vincent & the Grenadines	91	100 ^c	94	100 ^c	100 ^c	NA	95	100	89	78	56	9
Suriname	NA	96	99	96	86	NA	69	90	NA	30	40	10
Trinidad & Tobago	NA	91	89	90	90	NA	...	92	100 ^c	33	56	9
Turks & Caicos Islands	100 ^c	98	100	95	95	NA	...	88	...	86	86	7
Virgin Islands (UK)	97	85	83	87	87	NA	78	89	74	20	20	5
Virgin Islands (US)	...	...	...	...	...	...	...	...	...	...	...	...

(a) < 2 years of age; (b) St. Maarten only; (c) reported coverage > 100%; (d) value 2009; (e) children aged 19-35 months; (f) DTP3; Hib not given; (g) no data but in schedule; (h) coverage report for measles-rubella vaccine in children < 1 year of age; (k) target age groups vary by country; (l) reports number of provinces and territories; (m) reports number of states.

morbidity data

	23	24	25	26	27	28	29	30	31	32	33	34
	number of reported cases											
	confirmed cases				neonatal tetanus	tetanus (non-neonatal)			pertussis	diphtheria	Hib meningitis	mumps
	wild polio	measles	rubella	CRS		male	female	total				
2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010
The Americas	0	249	20	0	25	479	91	580	12,759	87	272	39,784
North America	0	162	19	0	0	2	1	13	9,563	0	43	3,062
Bermuda	0	0	0	0	0	0	0	0	0	0	0	0
Canada	0	99 ^b	12 ^c	0	0	2	1	3	759	0	20	799
United States of America ^a	0	63 ^b	7 ^b	0	...	...	...	10	8,804	0	23 ^d	2,263
Latin America & the Caribbean	0	87	1	0	25	477	90	567	3,196	87	229	36,722
Latin America	0	87	1	0	25	473	89	562	3,195	87	229	36,721
Mexico	0	0	0	0	3	34	9	43	371	0	1	5,780
Central American Isthmus	0	0	0	0	3	14	5	19	254	0	18	736
Belize	0	0	0	0	0	0	0	0	0	0	0	36
Costa Rica	0	0	0	0	0	0	0	0	71	0	1	17
El Salvador	0	0	0	0	2	0	0	0	2	0	0	369
Guatemala	0	0	0	0	0	1	1	2	0	0	12	9
Honduras	0	0	0	0	1	11	4	15	135	0	0	172
Nicaragua	0	0	0	0	0	1	0	1	24	0	0	52
Panama	0	0	0	0	0	1	0	1	22	0	5	81
Latin Caribbean	0	2	1	0	0	51	2	53	50	50	17	7,089
Cuba	0	0	0	0	0	1	0	1	0	0	14	1
Dominican Republic	0	0	0	0	0	50	0	50	37	4	3	4,897
French Guiana	0	2 ^b	1	...	...	...	...	...	...	...	...	...
Guadeloupe	0	...	...	...	...	...	...	...	...	...	...	0
Haiti	0	0	0	0	0	0	2	2	13	46	...	2,191
Martinique	0	...	...	...	...	...	...	...	...	...	...	...
Puerto Rico	0	...	...	...	...	...	...	...	...	...	...	...
Andean Area	0	0	0	0	11	95	27	122	408	5	13	16,841
Bolivia	0	0	0	0	0	0	0	0	...	5	2	1,781
Colombia	0	0	0	0	2	51	18	69	344	0	2	10,376
Ecuador	0	0	0	0	2	0	0	0	0	0	0	1,331
Peru	0	0	0	0	5	35	7	42	64	0	7	...
Venezuela	0	0	0	0	2	9	2	11	0	0	2	3,353
Brazil	0	68 ^b	0	0	6	258	44	302	477	32	146	...
Southern Cone	0	17	0	0	2	21	2	23	1,635	0	34	6,275
Argentina	0	17 ^b	0	0	0	5	0	5	804	0	24	5,083
Chile	0	0	0	0	0	8	1	9	794	0	5	891
Paraguay	0	0	0	0	2	5	1	6	1	0	3	132
Uruguay	0	0	0	0	0	3	0	3	36	0	2	169
Non-Latin Caribbean	0	0	0	0	0	4	1	5	1	0	0	1
Anguilla	0	0	0	0	0	0	0	0	0	0	0	0
Antigua & Barbuda	0	0	0	0	0	0	0	0	0	0	0	0
Aruba	0	0	0	0	0	0	0	0	1	0	0	0
Bahamas, The	0	0	0	0	0	0	0	0	0	0	...	0
Barbados	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
Dominica	0	0	0	0	0	0	1	1	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	3	0	3	0	0	0	1
Montserrat	0	0	0	0	0	0	0	0	0	0	...	0
Netherlands Antilles	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
Saint Lucia	0	0	0	0	0	0	0	0	0	0	0	0
Saint Vincent & the Grenadines	0	0	0	0	0	0	0	0	0	0	0	0
Suriname	0	0	0	0	0	1	0	1	0	0	...	0
Trinidad & Tobago	0	0	0	0	0	0	0	0	0	0	...	0
Turks & Caicos Islands	0	0	0	0	0	0	0	0	0	0	...	0
Virgin Islands (UK)	0	0	0	0	0	0	0	0	0	0	0	0
Virgin Islands (US)	0	...	...	...	...	...	...	...	...	...	...	...

(a) Morbidity and Mortality Weekly Report (MMWR), 22 July 2011/Vol 60/No.28; (b) imported cases or cases related to importation; (c) provisional data; (d) invasive disease (age <5 years).

program management and financing

	35 measles/rubella elimination commission	36 years covered by multi-year plan for immunization	37 number of NITAG meetings	38 number of districts with at least 1 supervisory visit	39 plan for immunization injection safety	40 national system to monitor ESAVIs	41 spending on routine immunization financed using gov't funds (%)	42 spending on vaccine purchases financed using gov't funds (%)	43 budget line for vaccine purchases
	2010		2010	2010	2010	2010	2010	2010	2010
The Americas									
North America									
Bermuda	yes ^a	no	no	...	yes	yes	...	...	yes
Canada	yes	...	3	...	...	yes	...	...	...
United States of America	yes	...	3	...	...	yes	...	...	...
Latin America & the Caribbean									
Latin America									
Mexico	yes	2007-2012	3	...	yes	yes	100	100	yes
Central American Isthmus									
Belize	yes ^a	2007-2011	no	1	yes	yes	100	100	yes
Costa Rica	yes	no	10	81	yes	yes	100	100	yes
El Salvador	yes	2009-2013	6	262	yes	yes	...	...	yes
Guatemala	yes	2011-2015	0	...	yes	yes	...	100	yes
Honduras	yes	2010-2015	2	298	yes	yes	66	63	yes
Nicaragua	yes	2011-2015	0	153	yes	yes	52	41	yes
Panama	yes	no	15	76	yes	yes	99	100	yes
Latin Caribbean									
Cuba	yes	2011-2015	2	169	yes	yes	98	99	yes
Dominican Republic	yes	2006-2010	no	155	yes	no	100	100	yes
French Guiana	yes	...	...	...	...	...	...	...	...
Guadeloupe	yes	...	...	...	...	...	...	...	...
Haiti	yes	2011-2015	no	...	no	no	...	...	no
Martinique	yes	...	...	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...
Andean Area									
Bolivia	yes	2011-2015	no	110	yes	yes	...	...	yes
Colombia	yes	2011-2014	2	562	yes	yes	100	100	yes
Ecuador	yes	2012-2015	3	...	yes	yes	100	100	yes
Peru	yes	2011-2015	24	1745	yes	yes	100	100	yes
Venezuela	yes	no	no	...	no	yes	100	100	yes
Brazil	yes	2008-2011	3	...	no	yes	100	100	yes
Southern Cone									
Argentina	yes	2010-2015	4	...	yes	yes	100	100	yes
Chile	yes	no	3	...	no	no	100	100	yes
Paraguay	yes	no	4	241	yes	yes	94	100	yes
Uruguay	yes	2010-2015	5	275	yes	yes	100	100	yes
Non-Latin Caribbean									
Anguilla	yes ^a	no	no	3	yes	yes	100	100	...
Antigua & Barbuda	yes ^a	no	no	...	...	yes	...	...	...
Aruba	yes ^a	no	no	...	...	...	...	...	...
Bahamas, The	yes ^a	2010-2012	no	13	yes	yes	100	100	yes
Barbados	yes ^a	no	1	...	...	...	100	100	yes
Cayman Islands	yes ^a	no	no	...	...	yes	...	100	...
Dominica	yes ^a	no	4	7	yes	no	100	100	no
Grenada	yes ^a	2008-2012	no	7	...	yes	98	100	yes
Guyana	yes ^a	2008-2015	no	...	yes	yes	67	100	yes
Jamaica	yes ^a	no	no	...	yes	yes	100	100	yes
Montserrat	yes ^a	no	no	...	yes	yes	100	100	...
Netherlands Antilles	yes ^a	no	2	1	no	no	99	100	yes
Saint Kitts & Nevis	yes ^a	no	no	17	...	yes	...	100	yes ^b
Saint Lucia	yes ^a	2011-2012	no	9	yes	yes	100	100	yes
Saint Vincent & the Grenadines	yes ^a	no	no	9	no	yes	100	100	yes
Suriname	yes ^a	no	...	10	...	yes	84	100	yes
Trinidad & Tobago	yes ^a	2010-2011	no	...	yes	yes	100	100	yes ^b
Turks & Caicos Islands	yes ^a	no	no	4	no	yes	...	...	no
Virgin Islands (UK)	yes ^a	no	no	5	...	yes	100	100	yes
Virgin Islands (US)	yes ^a	...	...	...	...	...	...	...	...

surveillance indicators

Acute Flaccid Paralysis (AFP), 2010

Country	Number of AFP cases	AFP rate per 100,000 <15 years old	% of cases investigated <48 hours	% with 1 sample taken within 14 days of onset	Total number of sites	Sites reporting weekly %
Argentina	144	1.42	60	74	24	94
Bolivia	38	1.05	92	95	1,743	77
Brazil	513	1.12	97	79	3,221	94
Canada	38	0.67	...	...	...	...
CAREC	26	1.29	77	42	482	100
Chile	101	2.61	78	73	324	97
Colombia	149	1.15	91	85	3,311	78
Costa Rica	22	1.95	18	64	...	...
Cuba	26	1.32	96	100	23	100
Dominican Republic	31	0.94	65	71	249	72
Ecuador	32	0.74	94	84	1,040	95
El Salvador	60	2.57	100	78	28	...
Guatemala	41	0.7	85	85	...	44
Haiti	12	0.33	92	42	123	99
Honduras	77	2.49	87	83	248	93
Mexico	549	1.74	96	80	13,979	92
Nicaragua	31	1.54	100	55	164	100
Panama	8	0.78	75	100	250	88
Paraguay	18	0.9	78	78	433	90
Peru	84	1.01	82	71	3,685	85
Uruguay	2	0.26	50	0	8	5
USA	NR	...	...	...	...	...
Venezuela	62	0.73	84	85	7,343	86
TOTAL/AVERAGE	2,064	1.26	90	79	36,678	89

Measles/Rubella, 2010

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	Total number of sites	Sites reporting weekly %
Argentina	1174	50	100	100	100	...	100
Bolivia	120	100	99	82	78	2,197	77
Brazil	10362	70	98	...	...	14,570	78
Canada	...	...	...	...	...	...	...
CAREC	440	97	95	32	89	699	98
Chile	205	16	59	65	95	554	99
Colombia	2788	78	93	93	92	4,940	77
Costa Rica	62	8	100	98	48	57	...
Cuba	775	100	100	100	100	444	100
Dominican Republic	150	62	92	71	50	249	71
Ecuador	802	73	98	97	94	1,381	93
El Salvador	216	81	100	100	84	29	...
French Guiana	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...
Guatemala	329	52	96	97	75	...	...
Haiti	24	25	92	38	0	76	100
Honduras	134	87	99	99	74	470	92
Martinique	...	...	...	...	...	...	...
Mexico	4065	98	...	...	...	14,517	87
Nicaragua	107	88	98	91	79	170	100
Panama	72	78	99	99	90	278	91
Paraguay	436	57	96	85	95	504	90
Peru	910	81	96	70	64	6,414	99
Puerto Rico	...	...	...	...	...	...	...
Uruguay	15	33	73	92	42	14	54
USA	...	...	...	...	...	...	...
Venezuela	918	49	97	70	48	7,757	86
TOTAL/AVERAGE	24,104	75	97	86	85	55,095	81

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: United Nations Population Division. World Population Prospects: The 2010 Revision. New York; 2011. US Bureau of the Census. International Database: Update for countries/territories with populations under 300,000 inhabitants. Last accessed on 24 August 2011 at www.census.gov/ipc/www/idbacc.html.

Infant mortality rate (1,000 lb) or number of deaths (N): As reported or estimated by countries. For some countries due to the small number of events, the rate does not meet standards for reliability and precision and number of deaths are presented. An increase in infant mortality rate may reflect an improvement in data coverage and quality.

Socioeconomic indicators: The World Bank. 2011 World Development Indicators. Washington DC; 2011. For national health expenditure data, Technical Reports from HSS/RF-WHO/PAHO; 2011. For more information, please go to: www.paho.org/Spanish/DPM/SHD/HP/nhexp-metodos.htm

Immunization coverage, immunization program management, and financing information: Annual country reports to Comprehensive Family Immunization (IM)/PAHO via PAHO-WHO/UNICEF Joint Reporting Form (JRF); 2011.

Morbidity: Annual country reports to IM/PAHO via JRF, vaccine-preventable disease specific surveillance reports for measles/rubella and polio; 2010–2011.

Surveillance indicators: Vaccine-preventable disease specific surveillance reports for measles/rubella and acute flaccid paralysis/polio to IM/PAHO; 2010–2011.

Symbols and Abbreviations

(pop) population; (lb) live births; (NA) not applicable; (...) not available; (ppp) purchase power parity; (int'l) international; (GDP) gross domestic product; (BCG) bacille Calmette-Guérin (anti-tuberculosis 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 combination vaccine); (DTP3-Hib3) third dose of diphtheria-tetanus-pertussis-Haemophilus influenzae type b (Hib) vaccine (as DTP-Hib or other combination vaccine); (Hep B3) third dose of hepatitis B vaccine (as monovalent hepatitis B or combination vaccine); (DTP4) first booster dose after the primary series consisting of three doses of diphtheria-tetanus-pertussis vaccine (as DTP or combination vaccine); (MMR1) first dose of measles, mumps, rubella vaccine; (MMR2) second dose of measles, mumps, rubella vaccine (when offered in the routine program); (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. (Hi) *Haemophilus influenzae*; (Spn) *Streptococcus pneumoniae*; (CSF) cerebrospinal fluid; (Nm) *Neisseria meningitidis*; (BOL) Bolivia; (BRA) Brazil; (CHI) Chile; (COL) Colombia; (ECU) Ecuador; (SLV) El Salvador; (GTM) Guatemala; (GUY) Guyana; (HND) Honduras; (NIC) Nicaragua; (PAN) Panama; (PRY) Paraguay; (PER) Peru; (SUR) Suriname; (VEN) Venezuela.

Technical Notes

Immunization coverage: Proportion of children aged <1 year vaccinated with one dose of BCG 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 Hib, the third dose of hepatitis B vaccine, and the last dose of rotavirus vaccine (2nd or 3rd dose depending on the vaccine used), respectively. 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. Subregional aggregated data express average values weighted by population aged <1 year, when a figure is available.

Municipalities reaching coverage ≥95% for DTP3 and MMR: Proportion of municipalities reporting coverage levels equal to or greater than 95% for DTP3 and MMR1 vaccines, respectively, expressed as a percentage. Municipalities are defined as the third administrative level (country level being first), unless otherwise stated.

Morbidity: Number of confirmed cases of wild polio, measles, rubella, CRS, NNT, non-NNT, pertussis, diphtheria, Hib meningitis, and mumps. 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:

- Measles/rubella elimination commission: country has formed a commission to document and verify the elimination of endemic measles and rubella, as per the 2007 Directing Council Resolution CSP27.R2 "Elimination of Rubella and Congenital Rubella Syndrome in the Americas".
- 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 2010. NITAGs provide recommendations on immunization practices, including advice on vaccines to be included into the national immunization schedule.
- Number of districts with at least one supervisory visit: immunization supervision including all or most aspects of the program, the supervisions of the local level are

Selected Information Products of the Comprehensive Family Immunization Project



- "Thirty years of the Immunization Newsletter: The history of the EPI in the Americas" compiles over 2,500 articles on immunization published since 1979. This book will take you from the early implementation of the Expanded Program on Immunization (EPI) in the Americas to the current efforts to sustainably introduce new vaccines. You will read about the regional polio, measles and rubella elimination initiatives, from their conception to their achievement, and of the many experiences and lessons learned that have made the Immunization Program of the Americas one of the most successful life-saving initiatives in the world. Available online at: www.paho.org/inb.



- **Immunization Newsletter:** A bi-monthly 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.



- **Rubella Watch:** Supplement to the Immunization Newsletter providing the most up-to-date information on all aspects of the rubella and CRS elimination initiative being implemented in the Americas.

- **Measles/Rubella and Polio Bulletins:** Weekly epidemiological surveillance bulletins.

Please visit the Comprehensive Family Immunization page at www.paho.org/immunization

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generally done by region/department/state or national level

- Plan for immunization injection safety: the existence of a plan to ensure the safety of injections, including training, supervision, the proper use of safety boxes. This plan may be part of the annual immunization plan of action.
- National system to monitor ESAVIs: System in place for the reporting and follow-up of ESAVIs.
- Spending on routine immunization financed using government funds: Percentage of all of 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.

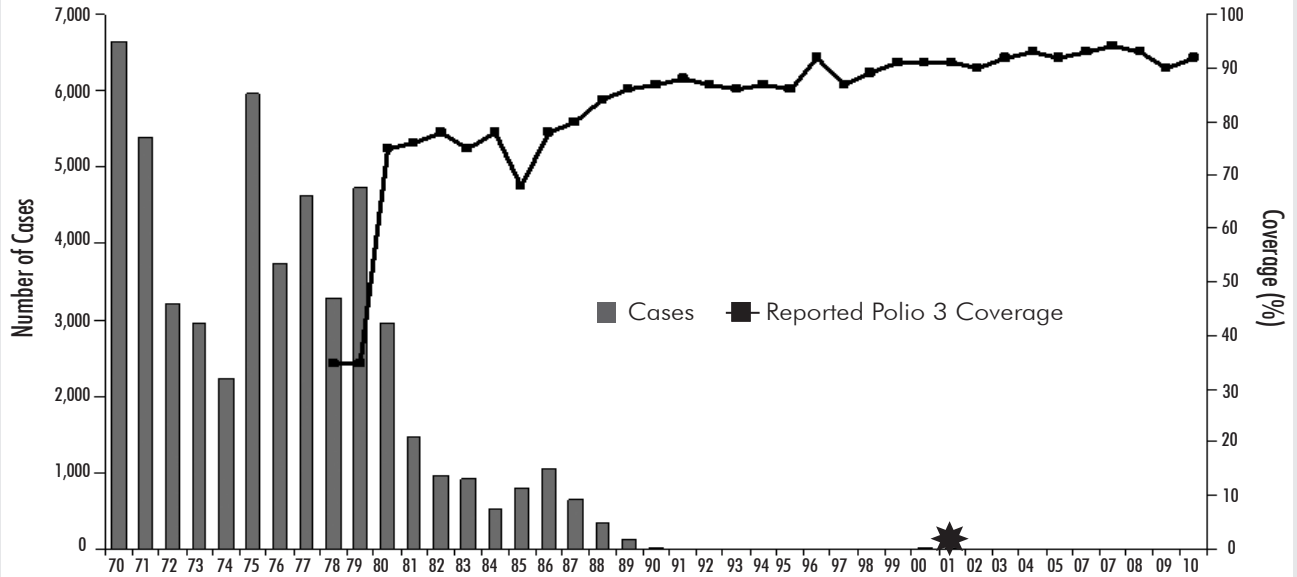
This brochure is published in collaboration with Health Information and Analysis, Pan American Health Organization.

Seasonal Influenza Vaccine Use in the Americas, 2010

	Children	Older Adults	Other Risk Groups				
			Health Workers	Chronic Diseases	Pregnant Women	Poultry Workers	Other
Anguilla		✓ ^A	✓				
Antigua and Barbuda	6m-35m	≥60y					
Argentina	6m-23m ^A	≥65y	✓	✓ ^{B1}	✓	✓	✓ ^{B2}
Aruba							
Bahamas	6m-36m	≥65y	✓	✓	✓		
Barbados	6m-23m	✓	✓				✓ ^D
Belize	6m-23m	≥65y	✓	✓			
Bermuda	6m-18y	≥60y	✓	✓	✓		✓ ^F
Bolivia	✓	✓	✓	✓			
Brazil	✓	≥60y	✓	✓ ^{G1}	✓		✓ ^{G2}
Canada	6m-23m	≥65y	✓	✓	✓	✓	✓ ^J
Cayman Islands	6m-4y	≥65y	✓	✓	✓		✓ ^K
Chile	6-23m	≥60y	✓	✓	✓	✓	✓ ^M
Colombia	6-23m	≥60y	✓	✓			
Costa Rica	6m-8y ^A	≥65y	✓	✓			
Cuba	6m-24y ^N	≥65y	✓	✓	✓	✓	
Curaçao							
Dominica	6m-3y	>65y					
Dominican Republic	6m-3y	≥65y	✓	✓		✓	✓ ^O
Ecuador	6m-23m	≥65y	✓	✓			
El Salvador	6m-23m	≥60y	✓	✓			
Grenada	6m-18y ^A	>18y ^A	✓	✓		✓ ^P	
Guatemala		≥60y	✓	✓			
Guyana							
Haiti							
Honduras	>6m-5y	≥60y	✓	✓		✓	
Jamaica	6m-18y ^A	>18y ^A	✓	✓			✓ ^Q
Mexico	6m-18y	>18y	✓	✓	✓		
Montserrat	<9y	✓	✓				✓ ^R
Netherlands Antilles (Bonaire and Saba)	✓ ^A	≥65y		✓			
Nicaragua	6m-23m ^A	≥65y ^A	✓	✓	✓		
Panama	6m-5y	≥60y	✓	✓	✓	✓	
Paraguay	6m-5y	≥60y	✓	✓	✓	✓	
Peru	6m-23m	≥65y	✓	✓	✓		
St. Kitts							
St. Lucia		≥65y	✓	✓			
St. Maarten							
St. Vincent	6m-2y						
Suriname	6m-23m	✓	✓	✓	✓		✓
Trinidad and Tobago	6m-18m	>18y	✓	✓	✓	✓	✓ ^S
Turks and Caicos	6m-3y		✓	✓			
United States of America	6-23m	≥50y	✓	✓	✓		✓ ^U
Uruguay	6-29m	≥65y	✓	✓		✓	
Venezuela	6-23m	≥60y	✓	✓	✓		
Virgin Islands (UK)	>3y	≥65y	✓	✓ ^H			✓ ^I

(A) with chronic disease; (B1) persons from 2-64 years with chronic pulmonary disease, cardiovascular disease, chronic renal failure, severe developmental disorders, immune disorders, HIV/AIDS, and oncology and transplant patients. (B2) essential services, security forces, educators, those living with oncology patients, those in contact with children < 6 months; (C) the elderly in institutions; (D) military and front line staff; (E) others includes children on aspirin therapy, essential workers, travelers, close contacts or caregivers of individuals with chronic disease, and individuals living in crowded conditions; (G1) chronic diseases refers to persons with chronic pulmonary disease, cardiovascular disease, HIV/AIDS, and immune disorders; (G2) other populations refer to indigenous population including population > 6m and incarcerated populations; (H) renal dysfunction; (I) residents of nursing homes; (J) residents of nursing homes, those in contact with populations at high risk for influenza complications and those who provide essential community services; anyone else aged 2-64 years should be encouraged to get vaccinated; (K) police and fire, children < 6m who are at high risk for complications and individuals caring for babies < 6 months; (N) with asthma/diabetes; (O) public safety workers; (P) police immigration and customs officers and attendants at homes for the elderly; (Q) parliamentarians; (R) high risk workers; (S) national security; (U) people in contact with those at high risk and all persons who want to reduce the risk of becoming ill with influenza or of transmitting it to others.

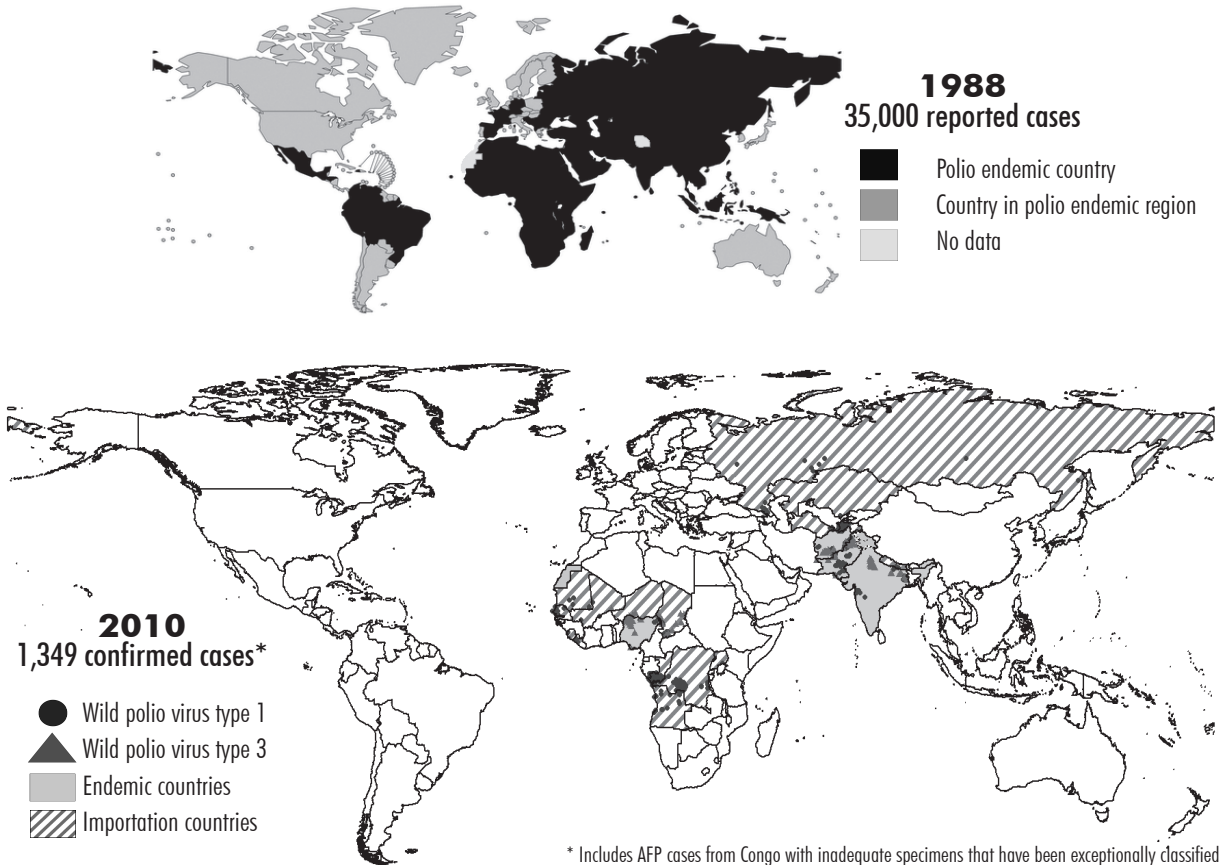
Poliomyelitis Eradication in the Americas, 1970-2010



* Type 1 vaccine-derived virus in La Hispaniola in 2000 and 2001: 21 cases.

Source: Country reports to FCH-IM/PAHO.

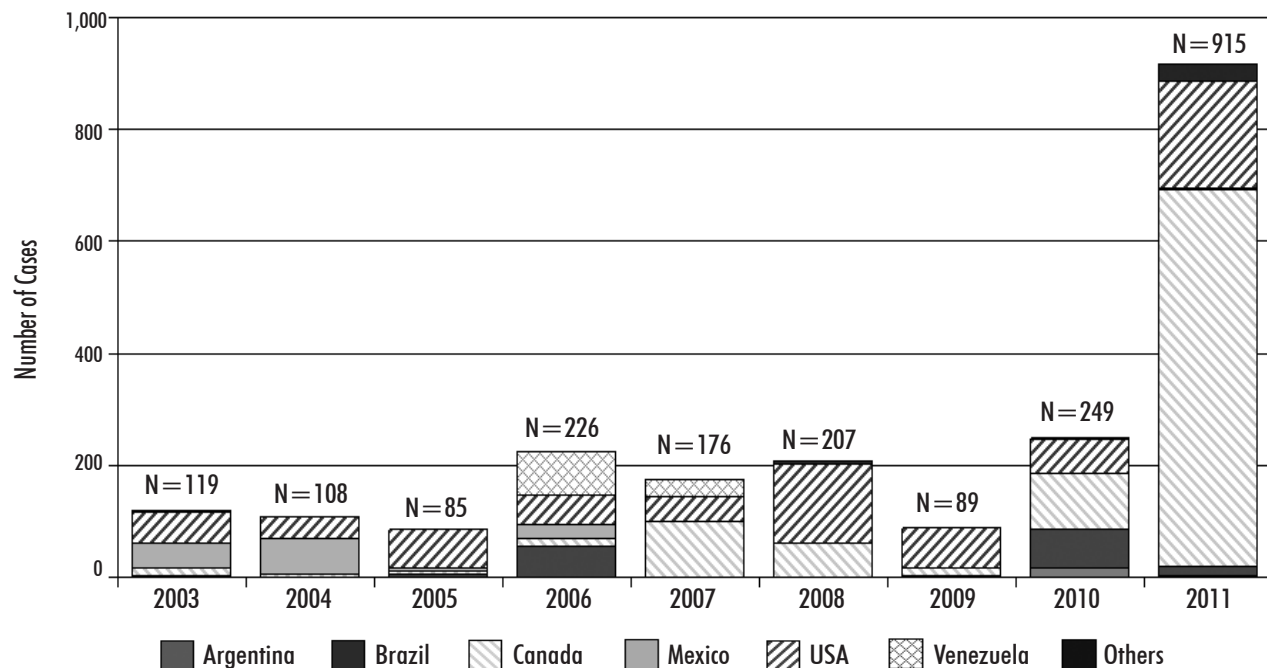
Global Progress Toward Polio Eradication, 1988-2010



* Includes AFP cases from Congo with inadequate specimens that have been exceptionally classified as confirmed polio based on their association with the WPV1 outbreak.

Source: World Health Organization/HQ Polio Eradication, 2011.

Distribution of Confirmed Measles Cases Following the Interruption of Endemic Transmission, the Americas, 2003-2011*



Source: Country reports to FCH-IM/PAHO.

* Data as of epidemiological week 33/2011.

VACCINATION WEEK IN THE AMERICAS Flexible Country Participation

	GOALS	2010	2011*
Protecting the achievements	Measles elimination	Dominican Republic	Costa Rica, Ecuador, St. Kitts & Nevis
	Polio eradication	Cuba, Dominican Republic, Nicaragua	Costa Rica, Cuba, Dominican Republic, Nicaragua
	Complete immunization schedules	Anguilla, Aruba, Bahamas, Belize, Bolivia, Colombia, Costa Rica, Dominica, El Salvador, Grenada, Guyana, Honduras, Haiti, Mexico, Montserrat, Nicaragua, Panama, St. Lucia, Suriname, Trinidad & Tobago, Uruguay, Venezuela, Virgin Islands (UK)	Anguilla, Antigua & Barbuda, Argentina, Bahamas, Belize, Brazil, Colombia, Dominican Republic, El Salvador, Grenada, Guyana, Honduras, Haiti, Montserrat, Nicaragua, Panama, Paraguay, St. Lucia, St. Maarten, St. Vincent & the Grenadines, Suriname, Trinidad & Tobago, Uruguay, Venezuela
Immunization: The Unfinished Agenda	Reduce the risk of yellow fever	Bolivia, Trinidad & Tobago	Trinidad & Tobago
	Prevent seasonal influenza	Brazil, Costa Rica, El Salvador, Grenada, Panama, Trinidad & Tobago, Venezuela	Argentina, Brazil, Chile, El Salvador, Panama, Paraguay, Uruguay, Venezuela
	Tetanus control/ neonatal tetanus elimination	Bolivia, Costa Rica, El Salvador, Honduras, Mexico, Nicaragua, Venezuela	El Salvador, Honduras, Nicaragua, Panama, Venezuela
	Protect occupational at-risk groups	Anguilla, Costa Rica, Grenada, Jamaica, Montserrat, St. Lucia, Trinidad & Tobago, Venezuela, Virgin Islands (UK)	Anguilla, Bahamas, Belize, Dominica, Grenada, Montserrat, Panama, Paraguay, St. Lucia, Trinidad & Tobago, Uruguay, Virgin Islands (UK)
Meet Future Challenges	New vaccine introduction (including pandemic influenza (H1N1))	Argentina, Bahamas, Barbados, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Honduras, Montserrat, Panama, Peru, Paraguay, St. Lucia, Trinidad & Tobago, Turks & Caicos, Uruguay	Paraguay

Source: Country reports to FCH-IM/PAHO.

* Data received up to 5 July 2011

Epidemiological Surveillance Indicators for Diseases Preventable by New Vaccines in Reporting Countries, Latin America and the Caribbean, 2010

Rotavirus Surveillance, January-December 2010

Data and Indicators	BOL	BRA	CHI	COL ^a	ECU	SLV	GTM	GUY	HND	NIC ^b	PAN	PRY ^c	PER	VCT ^d	SUR	VEN
Number of hospitalizations <5 years	12,408	16,277	17,203	15,274	24,248	28,068	23,982	19,083	53,939	9,246	10,745	7,275	10,175	4,350	23,779	10,505
Number <5 years admitted to hospital for diarrhea	1,885	2,800	1,334	1,658	2,794	4,113	5,162	1,578	5,126	2,118	1,306	665	1,230	549	2,423	789
Number <5 years who meet the case definition	1,685	2,082	791	700	2,289	2,396	1,782	162	3,674	1,493	751	341	1,170	373	685	262
Number <5 years with epidemiological form and stool specimen	1,509	852	791	697	2,276	2,191	1,618	33	1,994	1,493	132	279	1,170	140	149	242
Positive cases of rotavirus	439	191	215	106	449	524	777	7	696	358	132	139	504	13	70	76
Deaths	...	2	...	0	2	...	...	...	0	1	0	0	0	...	...	0
% of positive cases of rotavirus	29%	22%	27%	15%	20%	24%	48%	21%	35%	24%	100%	50%	43%	9%	47%	31%

(a) Colombia: Hospital Pediátrico de Barranquilla closed its doors in June 2010; (b) Nicaragua: Stopped its surveillance in all sentinel sites in June 2010. Surveillance will convene in 2011; (c) Paraguay: Hospital Medicina Tropical began surveillance in August 2010; (d) Suriname: Hospital Slands started surveillance in July 2010.

Bacterial Pneumonia Surveillance, January-December 2010

Data and Indicators	Bolivia	Ecuador	El Salvador	Guatemala	Honduras	Panama	Paraguay	Peru	Venezuela
Number of hospitalizations <5 years	10,487	23,518	13,443	7,381	6,741	17,947	9,672	15,603	10,742
Number of suspected cases of pneumonia	1,615	3,181	1,319	1,093	740	2,726	1,552	2,174	1,125
Number of suspected cases with x-ray and epidemiological form	1,545	3,181	1,264	565	445	2,377	1,446	1,696	1,091
Number of probable cases of bacterial pneumonia	471	3,176	470	475	426	2,229	1,191	640	1,032
Probable cases with blood specimen	287	2,147	181	434	192	1,731	853	633	734
Probable cases with pleural fluid specimen	22	91	4	...	0	11	50	12	16
Confirmed cases of Hib	0	14	4	5	0	1	3	4	3
Confirmed cases of Hi (no b)	0	2	...	...	2	1	0	0	0
Confirmed cases of Spn	12	30	6	...	1	13	28	13	9
Confirmed cases caused by other bacteria	10	177	17	37	37	22	12	4	107
Deaths	12	36	3	16	35	26	13	9	24

Bacterial Meningitis Surveillance, January-December 2010

Data and Indicators	Bolivia	Brazil ^a	Ecuador	El Salvador	Guatemala ^b	Honduras	Panama	Paraguay ^c	Peru	Venezuela
Number of hospitalizations <5 years	10,487	1,383,455	23,518	12,559	7,795	6,741	17,548	8,994	15,607	10,742
Number of suspected cases of meningitis	109	10,514	385	54	87	34	124	95	186	189
Number of suspected cases with cerebrospinal fluid test and epidemiological form	84	9,523	379	54	82	30	113	90	125	182
Number of probable meningitis cases	40	2,403	111	53	37	25	54	75	24	87
Confirmed cases of Hib	2	79	3	1	2	...	1	...	3	2
Confirmed cases of Hi (no b)	1	0	...	...	...	1	1	...	1	0
Confirmed cases of Nm	0	1,035	...	...	...	...	4	1	...	1
Confirmed cases of Spn	8	327	5	1	...	1	11	6	3	4
Confirmed cases caused by other bacteria	3	962	56	...	4	4	11	18	0	20
Deaths	11	432	8	...	1	1	9	2	2	6

(a) No. of hospitalizations include sentinel hospitals and all other hospitals in the country; (b) Hospital de Enfermedad Común IGSS zona 9 reported only from January to May 2010; (c) Centro Materno-infantil San Lorenzo- Universidad Nacional de Asunción did not report data for November and December 2010.