

Immunization in the Americas

2010 Summary

Comprehensive Family Immunization
Family and Community Health



**Pan American
Health
Organization**

*Regional Office of the
World Health Organization*



preface

In 2009, the Americas faced several challenges and achieved important milestones. In April, the World Health Organization (WHO) declared an emergency of public health concern due to the emergence of a new influenza virus strain, influenza A(H1N1), detected in Canada, Mexico, and the United States. This virus rapidly disseminated to other countries in the Americas and the rest of the world leading WHO to declare an influenza pandemic in June. This was the first pandemic since the 1968-1969 Hong Kong Flu. Even though vaccination is the best tool to prevent influenza infection, the development of a pandemic influenza vaccine takes several months. While a vaccine was being developed and produced, countries had to face the first wave of the influenza pandemic using social distancing and sanitation measures, and treating cases with antivirals. Early analysis of the vaccine production situation predicted scarce pandemic vaccine availability. Despite concerns about access to vaccines, all countries of the Americas began their preparations for vaccine use. The Pan American Health Organization (PAHO) developed a three-prong strategy: boosting of seasonal influenza vaccination use, elaboration and dissemination of technical guidelines for vaccination against the pandemic influenza virus, and acquisition and deployment of pandemic influenza vaccine. This issue of the annual *Immunization in the Americas* brochure presents some data related to the achievements in H1N1 vaccination.

Following the interruption of indigenous measles virus circulation in 2002 in the Americas, and in light of the achievements in the implementation of immunization strategies and the accelerated reduction in the number of rubella cases, during the 44th meeting of the Directing Council in 2003, PAHO Member States approved a Resolution establishing the goal of rubella and congenital rubella syndrome (CRS) elimination from the Americas by 2010. Following the Resolution, countries have made enormous efforts to implement the PAHO-recommended vaccination and surveillance strategies. Over 250 million people have been vaccinated in mass vaccination campaigns targeting adolescents and adults of both sexes—campaigns that became known as “speed-up”—and routine coverage with measles/rubella-containing vaccines continues to be above 90% since 1998. As a result, the last endemic rubella cases in the Region were reported in Argentina in February 2009. In addition to interrupting rubella transmission, the “speed-up” campaigns have greatly contributed to consolidating measles elimination.

In 2007, the 27th Pan American Sanitary Conference adopted a Resolution calling for national commissions to be formed to verify and document measles, rubella, and CRS elimination, under the guidance of an independent International Expert Committee appointed by the PAHO Director. A plan of action for the verification and documentation of measles, rubella, and CRS elimination in the Region of the Americas was developed and approved by PAHO’s Technical Advisory Group on Vaccine-preventable Diseases in 2009. The Plan of Action includes five essential components: epidemiology of measles, rubella, and CRS; quality of the surveillance; molecular epidemiology and laboratory activities; an analysis of the vaccinated cohorts using different strategies; and the sustainability of the national immunization program. This year, *Immunization in the Americas* highlights some of the rubella elimination achievements, along with the next steps in the process of verification and documentation of the interruption of endemic measles and rubella virus transmission in the Region of 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.

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			
	2009	2009	2009	rate	(N) year	2009	current value	ppp value	2008	2008	2008	public expenditure	private expenditure
The Americas	930,741	14.7	15,509.9	15.6		248,763	22,797	24,450	...	...	...	...
North America	348,300	12.1	4,771.6	6.6		86,396	47,516	46,011	...	...	...	...
Bermuda	68	11.6	0.8	NA	4 2007	22	...	...	...	...	7.6 ^{b,m}	6.9 ^{c,q}
Canada	33,573	10.7	358.1	5.1	2007	8,448	43,640	38,710	...	...	7.5	1.4 ^f
United States of America	314,659	14.0	4,412.7	6.8	2007	77,926	47,930	46,790	...	...	7.7 ^c	4.6 ^f
Latin America & the Caribbean	582,440	17.2	10,738.3	19.6		162,367	6,994	10,643	...	...	...	...
Latin America	575,339	19.1	10,617.3	19.7		160,350	7,018	10,686	7.1	...	...	...
Mexico	109,610	18.4	2,021.2	15.2	2008	31,319	9,990	14,340	4.0 ^c	...	4.9 ⁿ	2.7 ^s	
Central American Isthmus	41,738	23.6	1,076.6	25.4		11,275	3,114	5,885	11.4	...	...	...
Belize	307	24.3	7.5	17.9	2009	84	3,740	5,940	13.4 ^d	...	3.0 ^{b,m}	1.3 ^{c,f}	
Costa Rica	4,579	16.5	75.7	8.8	2009	1,288	6,060	10,960	2.0 ^b	...	6.2	3.4 ^s	
El Salvador	6,163	20.2	124.6	21.5	2007	1,760	3,460	6,630	6.4 ^b	...	2.9 ^m	5.0 ^s	
Guatemala	14,027	32.5	456.3	30.0	2008	3,602	2,680	4,690	11.7 ^a	...	2.1 ^m	4.8 ^s	
Honduras	7,466	27.0	202.2	23.0	2006	2,004	1,740	3,830	18.2 ^a	...	4.1 ^m	2.9 ^s	
Nicaragua	5,743	24.4	140.3	33.0	2006	1,603	1,080	2,620	15.8 ^f	...	5.0 ^{b,m}	4.2 ^f	
Panama	3,454	20.3	70.0	12.7 ^o	2008	934	6,690	12,630	9.5 ^a	...	4.3 ^c	2.0 ^{b,s}	
Latin Caribbean	36,404	17.7	682.6	34.0		9,834	...	...	...	...	...	...
Cuba	11,204	10.3	115.9	4.8	2009	3,064	...	...	...	...	10.0 ^{c,o}	...
Dominican Republic	10,090	22.2	223.6	28.8	2009	2,740	4,330	7,800	4.4 ^b	...	1.8 ^m	5.3 ^s	
French Guiana	226	24.5	5.5	12.1	2007	61	...	...	...	...	...	...
Guadeloupe	465	14.1	6.6	6.9	2008	121	...	...	...	...	14.0 ^{b,m}	...
Haiti	10,033	27.3	274.0	57.0	2006	2,728	...	...	54.9 ^a	...	...	2.9 ^{b,s}
Martinique	405	12.3	5.0	8.8	2007	106	...	...	...	...	...	...
Puerto Rico	3,982	13.1	52.1	7.5	2008	1,014	...	...	...	...	...	...
Andean Area	126,896	21.8	2,663.1	20.0		35,015	5,170	8,914	9.7	...	...	...
Bolivia	9,863	26.6	262.1	50.0	2003-08	2,582	1,460	4,140	11.9 ^b	...	3.3 ^c	1.6 ^s	
Colombia	45,660	20.1	917.3	15.3	2007	12,888	4,620	8,430	16.0 ^a	...	3.5 ^f	1.5 ^s	
Ecuador	13,625	20.4	278.9	16.4	2008	3,642	3,690	7,780	4.7 ^b	...	2.7 ^m	3.7 ^s	
Peru	29,165	20.7	605.1	20.0	2007	8,043	3,990	7,950	7.7 ^b	...	2.0 ^{m,p}	1.9 ^f	
Venezuela	28,583	21.0	599.7	15.8	2008	7,860	9,230	12,850	3.5 ^a	...	2.8 ^{b,m}	2.3 ^s	
Brazil	193,734	15.6	3,026.4	20.0	2007	55,287	7,300	10,080	5.2 ^b	...	3.6 ^c	3.7 ^s	
Southern Cone	66,956	17.8	1,147.3	11.9		17,619	7,310	12,846	3.3	...	...	...
Argentina	40,276	17.2	691.2	12.5	2008	10,427	7,190	14,000	3.4 ^a	...	4.6 ^{c,n}	3.3 ^f	
Chile	16,970	14.9	252.1	7.9	2008	4,672	9,370	13,250	2.0 ^a	...	5.1 ⁿ	3.3 ^s	
Paraguay	6,349	24.2	154.0	16.9	2008	1,682	2,110	4,660	6.5 ^b	...	2.3 ^m	3.2 ^s	
Uruguay	3,361	14.9	50.0	9.6	2009	839	8,260	12,550	2.0 ^b	...	9.0 ^b	3.6 ^s	
Non-Latin Caribbean	7,102	15.3	121.0	19.6		2,017	8,025	10,912	...	...	...	...
Anguilla	14	13.0	0.2	...	...	6	...	...	...	...	3.0 ^b	2.7 ^f
Antigua & Barbuda	86	16.6	1.4	15.7	2009	36	13,200	19,660	...	...	1.8 ^b	0.7 ^f
Aruba	103	12.8	1.3	...	...	29	...	...	...	...	10.0 ^{b,m}	1.9 ^s
Bahamas, The	342	16.5	5.7	17.9	2008	99	21,390 ^b	...	...	...	3.2 ^b	2.7 ^{c,f}
Barbados	285	12.6	3.6	13.3 ^o	2008	70	...	...	...	...	4.4 ^f	1.6 ^{b,f}
Cayman Islands	49	12.4	0.6	NA	3 2009	18	...	...	...	...	3.0 ^b	...
Dominica	73	15.7	1.1	22.2	2009	27	4,750	8,300	...	...	3.8 ^o	2.8 ^f
Grenada	107	17.5	1.9	11.2	2009	29	5,880	8,430	...	...	2.9 ^o	4.0 ^f
Guyana	762	17.4	13.3	22.0	2005	198	1,450	3,030	7.7 ^h	...	5.3 ^b	1.7 ^q	
Jamaica	2,719	19.2	52.1	24.1	2008	756	4,800	7,370	2.0 ^k	...	2.6 ^m	3.0 ^s	
Montserrat	5	12.4	0.1	0	0 2009	2	...	...	...	...	9.0 ^b	0.8 ^f
Netherlands Antilles	227	14.2	3.2	...	...	55	...	...	...	...	14.0 ^{c,m}	0.7 ^{c,f}
Saint Kitts & Nevis	49	14.3	0.7	NA	15 2009	19	10,870	15,490	...	...	2.2 ^b	3.0 ^f
Saint Lucia	160	15.1	2.4	15.0	2005	51	5,410	9,020	20.9 ^d	...	2.4 ^o	3.4 ^s	
Saint Vincent & the Grenadines	105	15.3	1.6	14.2	2009	30	5,050	8,570	...	...	3.5 ^b	0.8 ^f
Suriname	520	18.7	9.7	19.8	2007	141	4,760	6,680	15.5 ^l	...	...	1.0 ^{c,f}
Trinidad & Tobago	1,339	14.9	19.9	13.1	2006	405	16,590	24,240	...	...	...	2.3 ^s
Turks & Caicos Islands	23	20.8	0.5	NA	2 2009	9	...	...	...	...	8.8 ^b	...
Virgin Islands (UK)	24	14.6	0.4	NA	4 2009	9	...	...	...	...	2.8 ^b	...
Virgin Islands (US)	110	11.9	1.3	NA	12 2007	27	...	...	...	...	...	...

(a) preliminary data; (b) value 2007; (c) value 2008; (d) value 1995; (e) value 2006; (f) value 2005; (g) value 2001; (h) value 1998; (i) value 2004; (j) value 1999; (m) institutional expenditure; (n) includes 'Obras Sociales' (ARG), ISAPRES and FONASA (CHL), IMSS and 'Seguro Popular' (MEX), IAMC (URY); (o) expenditure by activities or budgetary program; (p) including sanitation; (q) personal care and health; (r) medical care and expense; (s) health; (t) health care and health conservation.

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 ^l			
2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009
The Americas	96	90	92	90	83		84	94	73	56	59	
North America	NA	93	98	95	17		85	92	70			
Bermuda	NA	96	98	96	85	NA	...	95	70	...	...	1 ^m
Canada ^d	NA	80	...	80	17	NA	...	93	...	...	...	13 ⁿ
United States of America ^d	NA	94 ^{e,f}	99 ^e	96 ^a	94	...	85 ^e	92 ^e	...	...	...	51 ^o
Latin America & the Caribbean	96	88	92	88	86	77	83	94	73	56	59	15,081
Latin America	96	88	92	88	86	77	83	94	73	56	59	14,898
Mexico	98	72	84	72	69	89	82	96	92	66	83	2,438
Central American Isthmus	94	92	96	93	93	80	81	93	87	57	55	1,210
Belize	99	98	99	97	97	NA	76	97	92	83	83	6
Costa Rica	81	80	91	86	87	NA	...	81	84	40	36	81
El Salvador ^b	87	91	90	91	91	61	92	90	83	71	59	262
Guatemala	93	92	95	92	92	NA	...	92	NA	50	49	333
Honduras	100	98	100	98	98	82	100	100	NA	66	67	298
Nicaragua	100 ^d	99	100 ^d	98	98	94	83	100 ^d	NA	55	59	153
Panama	100	84	95	84	84	77	...	85	99	30	38	77
Latin Caribbean	83	79	82	78	49		82	78	95	43	40	464
Cuba	99	100	100 ^d	96	96	NA	96	100 ^d	95	69	83	169
Dominican Republic	96	85	85	82	85	NA	75	90	NA	26	27	155
French Guiana	...	...	...	...	...	NA	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	NA	...	...	...	...	...	...
Haiti	66	65	73	68 ^g	NA	NA	NA	60 ^k	NA	32	1	140
Martinique	...	...	...	...	...	NA	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...	...	...	...
Andean Area	93	89	92	91	91	62	67	92	66	32	35	3,861
Bolivia	88	84	87	85	85	65	NA	86	NA	26	31	327
Colombia	90	92	91	92	92	69	74	95	71	35	39	1,123
Ecuador	100 ^d	100 ^d	100 ^d	100 ^d	100 ^d	97	...	100 ^d	99	49	55	210
Peru	97	92	99	93	93	41	93	91	42	32	33	1,834
Venezuela	91	78	83	84	84	54	31	87	...	23	25	367
Brazil	100 ^d	98	97	97	96	82	98	99	55	70	70	5,565
Southern Cone	95	92	92	91	88		79	94	90	48	53	1,360
Argentina	100	95	95	94	90	NA	84	100	96	41	53	511
Chile ^b	95	92	93	92	92	NA	91	93	89	52	50	340
Paraguay ^b	73	74	74	72	72	NA	54	71	63	10	12	234
Uruguay	99	95	98	95	95	NA	...	95	...	88	93	275
Non-Latin Caribbean	95	92	93	92	92		78	92	79	53	61	183
Anguilla	100 ^d	100 ^d	100 ^d	100 ^d	100 ^d	NA	...	100 ^d	...	67	67	3
Antigua & Barbuda	NA	98	100	99	98	NA	...	99	94	...	...	27
Aruba	NA	98	100	98	95	NA	...	95	97	100	100	1
Bahamas, The	NA	97	100	96	95	NA	77	98	76	...	...	31
Barbados	NA	93	93	93	93	NA	...	94	97	...	...	8
Cayman Islands	80 ^e	89 ^a	...	89 ^a	81 ^e	NA	...	86 ^e	...	...	...	6
Dominica	99	99	98	100	100	NA	...	100 ^d	95	100	100	7
Grenada	NA	100	92	99	99	NA	89	100 ^d	78	29	29	7
Guyana	98	97	97	98	98	NA	...	97	84	46	62	13
Jamaica	94	90	91	90	90	NA	80	88	79	23	8	13
Montserrat	96	100	100	100	100 ^d	NA	...	100	100 ^d	100	100	4
Netherlands Antilles ^c	NA	100 ^d	...	100 ^d	100 ^d	NA	...	100 ^d	...	...	...	...
Saint Kitts & Nevis	100 ^d	100 ^d	100 ^d	100 ^d	100 ^d	NA	99	100 ^d	100 ^d	100	100	17
Saint Lucia	97	95	99	95	95	NA	83	100 ^d	63	22	33	9
Saint Vincent & the Grenadines	80	100 ^d	100 ^d	100 ^d	100 ^d	NA	99	100 ^d	94	89	89	9
Suriname	NA	85	91	87	87	NA	70	88	NA	...	...	10
Trinidad & Tobago	NA	90	95	90	90	NA	...	94	80	33	67	9
Turks & Caicos Islands	100	100 ^d	98	100 ^d	100 ^d	NA	...	100	...	...	...	5
Virgin Islands (UK)	96	92	86	91	91	NA	...	93	100	...	...	4
Virgin Islands (US)	...	...	...	...	...	...	...	...	...	...	...	...

(a) < 2 years of age; (b) coverage data being revised by country; (c) St. Maarten only; (d) reported coverage > 100%; (e) value 2008; (f) children aged 19-35 months; (g) DTP3; Hib not given; (h) no data but in schedule; (k) coverage report for measles vaccine in children < 1 year of age; (l) target age groups vary by country; (m) value 2005; (n) reports number of provinces and territories; (o) 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				
	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009
The Americas	0	89	18	20	20	424	101	562	17,248	48	176	31,386
North America	0	85	10	3	0	0	2	20	11,577	2	64	2,207
Bermuda	0	0	0	0	0	0	0	0	0	0	0	2
Canada	0	14 ^b	7	1	0	0	2	2	1,667	2	29 ^d	214
United States of America ^a	0	71 ^b	3	2	0	...	...	18	9,910	0	35 ^e	1,991
Latin America & the Caribbean	0	4	8	17	20	424	99	542	5,671	46	112	29,179
Latin America	0	4	8	17	20	417	96	532	5,670	46	110	29,176
Mexico	0	0	0	0	0	31	8	39	559	0	0	...
Central American Isthmus	0	0	0	0	3	24	11	35	905	0	6	596
Belize	0	0	0	0	0	0	0	0	0	0	0	0
Costa Rica	0	0	0	0	0	1	0	1	664	0	0	25
El Salvador	0	0	0	0	0	9	1	10	2	0	1	126
Guatemala	0	0	0	0	1	3	0	3	...	0	2	1
Honduras	0	0	0	0	1	11	9	20	127	0	1	187
Nicaragua	0	0	0	0	0	0	0	0	11	0	...	103
Panama	0	0	0	0	1	0	1	1	101	0	2	154
Latin Caribbean	0	0	0	0	1	54	10	64	22	42	10	4
Cuba	0	0	0	0	0	2	1	3	0	0	5 ^d	4
Dominican Republic	0	0	0	0	1	51	7	58	18	5	5 ^d	...
French Guiana	0	0	0	0	...	...	...	...	...	...	...	...
Guadeloupe	0	0	0	0	...	...	...	...	...	...	...	...
Haiti	0	0	0	0	...	1	2	3	4	37	...	...
Martinique	0	0	0	0	...	...	...	...	...	...	...	...
Puerto Rico	0	...	...	...	...	...	...	...	...	...	...	...
Andean Area	0	0	4	0	12	59	19	82	702	0	7	21,499
Bolivia	0	0	0	0	1	8	0	8	...	0	1	3,696
Colombia	0	0	4 ^c	0	4	28	8	36	407	0	4	9,457
Ecuador	0	0	0	0	5	...	...	4	41	0	0	837
Peru	0	0	0	0	1	14	4	18	254	0	1	...
Venezuela	0	0	0	0	1	9	7	16	...	0	1	7,509
Brazil	0	0	0	14	3	234	41	275	1,037	4	62 ^d	...
Southern Cone	0	4	4	3	1	15	7	37	2,445	0	25	7,077
Argentina	0	3 ^b	4	3	0	...	...	15	1,743	0	19	5,913
Chile	0	1 ^b	0	0	0	5	5	10	692	0	2	825
Paraguay	0	0	0	0	1	10	1	11	1	0	3	83
Uruguay	0	0	0	0	0	0	1	1	9	0	1	256
Non-Latin Caribbean	0	0	0	0	0	7	3	10	1	0	2	3
Anguilla	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	0	0	0	0
Bahamas, The	0	0	0	0	0	0	0	0	0	0	0	3
Barbados	0	0	0	0	0	2	0	2	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	4	2	6	0	0	0	0
Montserrat	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands Antilles	0	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	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	1	0	2 ^c	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	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), August 27, 2010/Vol 59/No.33; (b) imported cases or cases related to importation; (c) clinically confirmed cases; (d) include all *Haemophilus influenzae*; (e) invasive disease (age <5 years).

program management and financing

	35 school-based immunization	36 multi-year plan for immunization	37 number of NCIP 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
	2009	2009	2009	2009	2009	2009	2009	2009	2009
The Americas									
North America									
Bermuda	yes	no	4	...	yes	yes	...	...	...
Canada	yes	yes	2	...	...	yes	...	...	...
United States of America	no	...	3	...	...	yes	...	...	...
Latin America & the Caribbean									
Latin America									
Mexico	yes	yes	3	...	yes	yes	100	100	yes
Central American Isthmus									
Belize	yes	no	no NCIP	3	yes	yes	90	100	yes ^a
Costa Rica	yes	no	11	81	yes	yes	100	100	yes
El Salvador	yes	yes	8	200	no	yes	99	100	yes
Guatemala	no	no	0	332	yes	yes	99	100	yes ^b
Honduras	yes	yes	3	298	yes	yes	75	71	yes
Nicaragua	yes	yes	2	...	yes	yes	65	56	yes
Panama	yes	no	21	39	yes	yes	100	100	yes
Latin Caribbean									
Cuba	yes	...	3	169	yes	yes	100	99	yes
Dominican Republic	yes	yes	no NCIP	...	...	...	90	90	yes
French Guiana	...	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...	...
Haiti	no	...	no NCIP	...	no	no	0	0	no
Martinique	...	...	...	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...
Andean Area									
Bolivia	no	yes	4	327	yes	yes	98	100	yes
Colombia	no	yes	5	600	yes	yes	100	100	yes
Ecuador	yes	no	4	...	yes	yes	100	100	yes
Peru	yes	yes	80	1,834	yes	yes	100	100	yes
Venezuela	yes	no	0	...	no	yes	100	100	yes
Brazil	no	yes	3	...	yes	yes	100	100	yes
Southern Cone									
Argentina	yes	...	4	...	...	...	...	...	...
Chile	yes	no	...	...	no	no	100 ^a	100 ^a	yes ^a
Paraguay	yes	no	2	98	yes	yes	98	100	yes
Uruguay	no	yes	10	275	yes	yes	100	100	yes
Non-Latin Caribbean									
Anguilla	yes	no	no NCIP	3	yes	yes	100	100	yes
Antigua & Barbuda	yes	no	no NCIP	...	yes	yes	100	100	...
Aruba	yes	no	no NCIP	...	...	...	100	100	...
Bahamas, The	yes	yes	no NCIP	12	yes	yes	100	100	yes ^a
Barbados	yes	no	2	...	...	...	100	100	yes
Cayman Islands	yes	no	no NCIP	...	no	yes	100	100	yes
Dominica	yes	no	3	7	yes	yes	100	100	yes
Grenada	yes	yes	no NCIP	7	...	yes	97	100	yes ^a
Guyana	yes	yes	no NCIP	13	yes	yes	88	100	yes
Jamaica	no	no	no NCIP	...	yes	yes	100	100	yes
Montserrat	yes	no	no NCIP	4	yes	yes	84	100	...
Netherlands Antilles	yes	no	no NCIP	...	no	no	100	100	yes
Saint Kitts & Nevis	yes	yes	no NCIP	17	yes	yes	100	100	yes
Saint Lucia	yes	yes	no NCIP	9	yes	yes	91	100	yes
Saint Vincent & the Grenadines	yes	yes	no NCIP	9	yes	yes	100	100	yes
Suriname	yes	yes	1	...	yes	yes	91	100	yes
Trinidad & Tobago	yes	yes	no NCIP	...	yes	yes	100	100	yes
Turks & Caicos Islands	no	no	no NCIP	5	no	yes	100	100	yes
Virgin Islands (UK)	yes	no	no NCIP	7	yes	yes	100	100	yes
Virgin Islands (US)	...	...	...	...	...	...	...	...	...

(a) value 2008; (b) budget line is for medications and vaccines.

surveillance indicators

Acute Flaccid Paralysis (AFP), 2009

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	138	1.36	84	81	24	94
Bolivia	46	1.27	91	72	1,743	79
Brazil	548	1.11	97	77	3,221	92
Canada	58	1.03	...	...	...	...
CAREC	10	0.50	90	38	482	99
Chile	98	2.54	76	72	324	99
Colombia	168	1.28	92	85	3,311	71
Costa Rica ^a	18	1.58	45	72	...	...
Cuba	26	1.29	100	92	23	100
Dominican Republic	25	0.76	64	72	249	87
Ecuador	32	0.74	97	97	1,040	88
El Salvador	67	2.86	100	76	28	85
Guatemala	35	0.60	82	88	...	...
Haiti	1	0.02	100	0	123	97
Honduras	69	2.04	92	87	248	95
Mexico	405	1.28	97	82	13,979	92
Nicaragua	18	0.89	74	68	164	100
Panama	10	1.00	90	90	250	88
Paraguay	22	1.10	64	73	433	87
Peru	91	1.09	91	65	3,685	95
Uruguay	4	0.52	50	0	8	73
USA	...	...	...	...	...	...
Venezuela	41	0.49	83	80	7,343	90
TOTAL/AVERAGE	1,930	1.15	92	78	36,678	89

Measles/Rubella, 2009

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	% of cases discarded by lab	Total number of sites	Sites reporting weekly %
Argentina	400	75	100	90	97	100	...	90
Bolivia	166	99	100	74	76	100	2,197	79
Brazil	9,623	68	80	...	...	98	14,570	77
Canada	...	...	...	...	...	...	...	...
CAREC	393	68	97	33	94	96	699	99
Chile	156	8	90	63	78	88	554	99
Colombia	1,383	71	93	86	88	97	4,715	73
Costa Rica ^a	41	39	61	74	42	97	57	16
Cuba	594	100	100	100	100	100	444	100
Dominican Republic	144	56	97	56	37	99	249	87
Ecuador	615	65	99	91	88	99	1,381	87
El Salvador	240	71	100	91	81	100	29	81
French Guiana	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...
Guatemala	272	24	98	86	74	93	...	...
Haiti	2	0	100	50	50	...	76	100
Honduras	133	93	98	80	92	98	262	93
Martinique	...	...	...	...	...	...	...	...
Mexico	4,391	98	99	84	82	100	14,517	94
Nicaragua	103	85	98	95	72	99	170	100
Panama	84	88	96	88	92	99	276	88
Paraguay	331	65	99	87	100	100	504	88
Peru	825	95	99	65	79	95	5,101	94
Puerto Rico	...	...	...	...	...	...	...	...
Uruguay	2	50	50	100	0	50	14	54
USA	...	...	...	...	...	...	...	...
Venezuela	835	58	94	70	76	97	7,757	90
TOTAL/AVERAGE	20,733	76	89	81	84	98	53,572	86

(a) Source: Integrated Surveillance Information System (ISIS).

Source: Polio Eradication Surveillance System (PESS), Measles Elimination Surveillance System (MESS), and country reports, FCH/IM, PAHO.

technical notes and data sources

Main Data Sources

Demographic data: United Nations Population Division. World Population Prospects: The 2008 Revision. New York; 2009. US Bureau of the Census. International Database: Update for countries/territories with populations under 300,000 inhabitants. Last accessed on 25 June 2010 at: www.census.gov/ipc/www/idbacc.html.

Infant mortality rate (1,000 lb) or number of deaths (N): 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. 2010 World Development Indicators. Washington DC; 2010. For national health expenditure data, Technical Reports from HSS/RF-WHO/PAHO Regional Unit; 2010.

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); 2010.

Morbidity: Annual country reports to IM/PAHO via JRF, vaccine-preventable disease specific surveillance reports for measles/rubella and polio; 2009–2010.

Surveillance indicators: Vaccine-preventable disease specific surveillance reports for measles/rubella and acute flaccid paralysis/polio to IM/PAHO; 2009–2010.

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; **(NCIP)** national committee on immunization practices; **(ESAVI)** event supposedly attributable to

vaccination or immunization; **(gov't)** government; **(Hi)** *Haemophilus influenzae*; **(Spn)** *Streptococcus pneumoniae*; **(CSF)** cerebrospinal fluid; **(Nm)** *Neisseria meningitidis*.

Technical Notes

For detailed information on demographic data and socioeconomic indicators, please visit: www.paho.org/DataStatistics. To see the methodology used to calculate national health expenditure, please visit: www.paho.org/PolicyandResearch.

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.

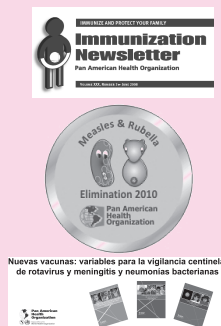
Morbidity: Number of confirmed cases of wild polio, measles, rubella, CRS, NNT, non-NNT, pertussis, diphtheria, Hib meningitis, and mumps. Subregional aggregated data is the sum of the totals. These are not rates; hence, inter-country comparisons may not be appropriate.

Immunization program management and financing:

- School-based immunization: Vaccination activities conducted in schools.
- Multi-year plan for immunization: Existence of an immunization strategic plan for more than one year.
- NCIP meetings: NCIPs 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

- **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.
- **Immunization Field Guides:** Practical field guides presenting the most recent techniques, coupled with useful illustrations, to help health workers in their efforts to control, eliminate, or eradicate poliomyelitis, measles, rubella, yellow fever, neonatal tetanus, diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, and rotavirus; implement surveillance of bacterial pneumonia and meningitis; and introduce and implement new vaccines.
- **Pandemic Influenza:** (1) Technical Guidelines for Vaccination against the Pandemic Influenza Virus, 2009; (2) Surveillance of Events Supposedly Attributable to Vaccination or Immunization (ESAVI) Linked to the Pandemic (H1N1) 2009 Vaccine and Crisis Prevention – Field Guide.
- **Nuevas vacunas: variables para la vigilancia centinela de rotavirus y meningitis y neumonías bacterianas:** A brochure whose objective is to standardize the collection and analysis of epidemiological surveillance data collected in sentinel hospitals (available in Spanish only).
- **Compendium of Measles Articles, Compendium of Rubella and Congenital Rubella Syndrome (CRS) Articles, and Images that Inspire: The Mobilization of the Americas to Eliminate Measles and Rubella:** aim to document the Regional experience and share with PAHO Member States and other regions of the world the lessons learned and best practices developed through the elimination initiatives.



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

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-diem 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 www.paho.org/english/ad/fch/im/FieldGuide_Index.htm.

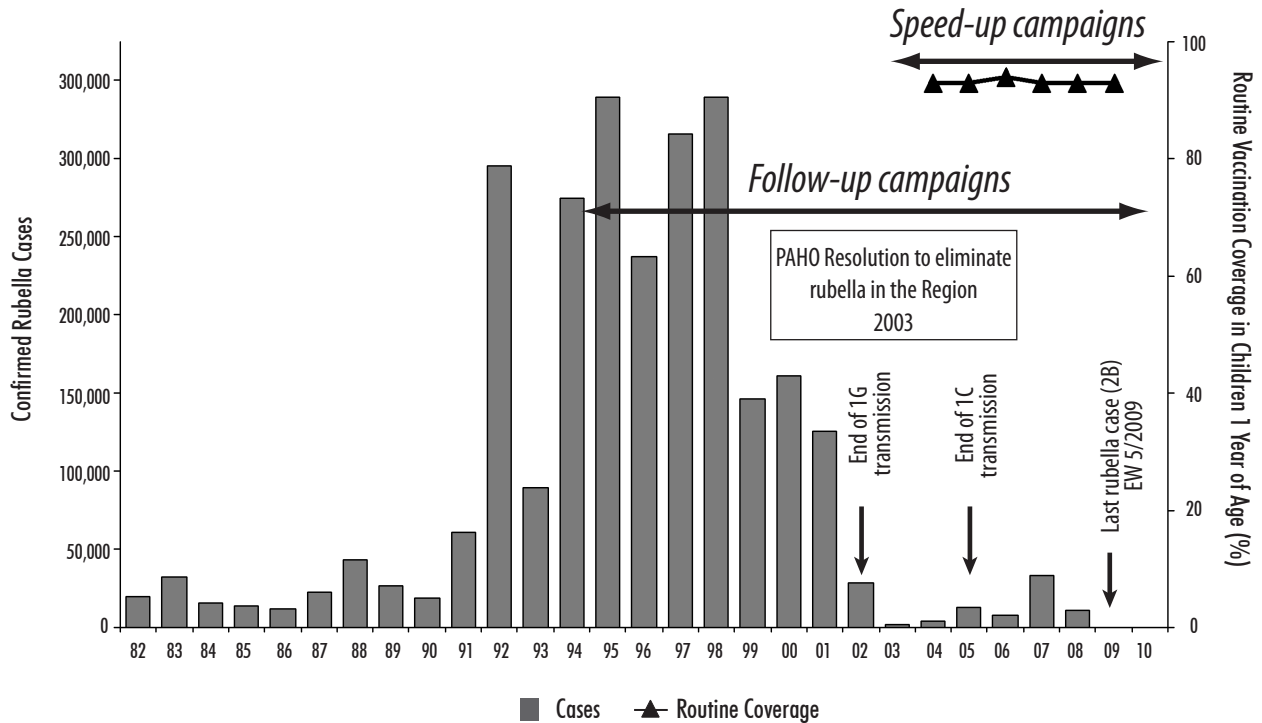
This brochure is published in collaboration with Health Information and Analysis, Pan American Health Organization.

Pandemic Influenza Vaccination Coverage in Countries of the Americas, 2010*

	Doses Administered	Target Population Coverage (%)	Total Population Coverage (%)†	Prioritized Risk Groups (%)			
				Health Personnel and Essential Services	Pregnant Women	Chronic Diseases	Others
Anguilla	...	...	...	...	...	...	...
Argentina	7,679,327	118.6	19.3	104.7	101.4	132.5	116.2
Bahamas	5,006	18.3	1.5	18.0	18.6	15.8	...
Barbados	4,360	21.8	1.7	64.2	3.3	11.5	...
Belize	416	1.1	0.1	...	...	...	...
Bermuda	1,053	22.7	1.6	...	...	...	...
Bolivia	886,379	70.3	9.1	60.9	20.1	108.7	60.3
Brazil	88,845,303	96.9	46.3	119.9	76.7	161.1	73.9
Canada	...	...	...	...	...	...	...
Cayman Islands	2,318	4.1	4.8	1.8	5.6	0.0	5.0
Chile	3,056,017	77.5	18.2	106.7	54.2	79.6	76.5
Colombia	1,479,531	72.2	3.3	53.4	58.5	101.3	59.5
Costa Rica	180,000	90.3	4.0	...	...	...	...
Cuba	1,123,526	100.1	10.0	101.8	100.7	98.8	100.7
Ecuador	973,480	103.0	7.2	...	...	...	...
El Salvador	1,690,101	115.3	27.6	186.0	44.7	...	114.6
Grenada	396	2.7	0.4	5.1	0.4	1.1	...
Guatemala	221,295	18.6	1.6	59.6	30.9	10.7	5.7
Guyana	121,900	76.7	16.0	...	...	...	...
Honduras	572,098	35.9	7.8	70.6	47.8	112.0	9.5
Mexico	26,903,232	96.7	24.8	94.9	71.7	101.9	82.2
Montserrat	1,245	77.5	24.9	...	...	...	...
Nicaragua	251,759	29.6	4.4	91.3	88.1	37.5	15.7
Panama	254,286	84.7	7.5	50.1	32.1	374.8	85.3
Paraguay	1,051,198	87.6	16.9	85.3	35.7	75.0	99.2
Peru	1,509,051	47.0	5.2	42.5	9.1	24.5	249.7
Suriname	24,674	29.0	4.8	23.4	4.5	10.4	...
Trinidad and Tobago	23,985	34.3	1.8	57.0	0.7	...	...
Turks and Caicos Islands	2,837	37.9	12.9	25.9	6.3	12.7	57.4
United States	61,000,000	27.9	19.6	22.3	38.1	11.6	13.9
Uruguay	515,158	51.5	15.4	...	...	...	...
TOTAL	198,379,931						

Note: Reported coverage > 100% may result from inexact denominator estimates; * Data as of epidemiological week 33 (week ending 21 August 2010); † Population data source: PAHO. *Immunization in the Americas: 2009 Summary*. FCH/IM. Source: Country reports to FCH/IM, PAHO.

Rubella Elimination in the Americas, 1982-2010*

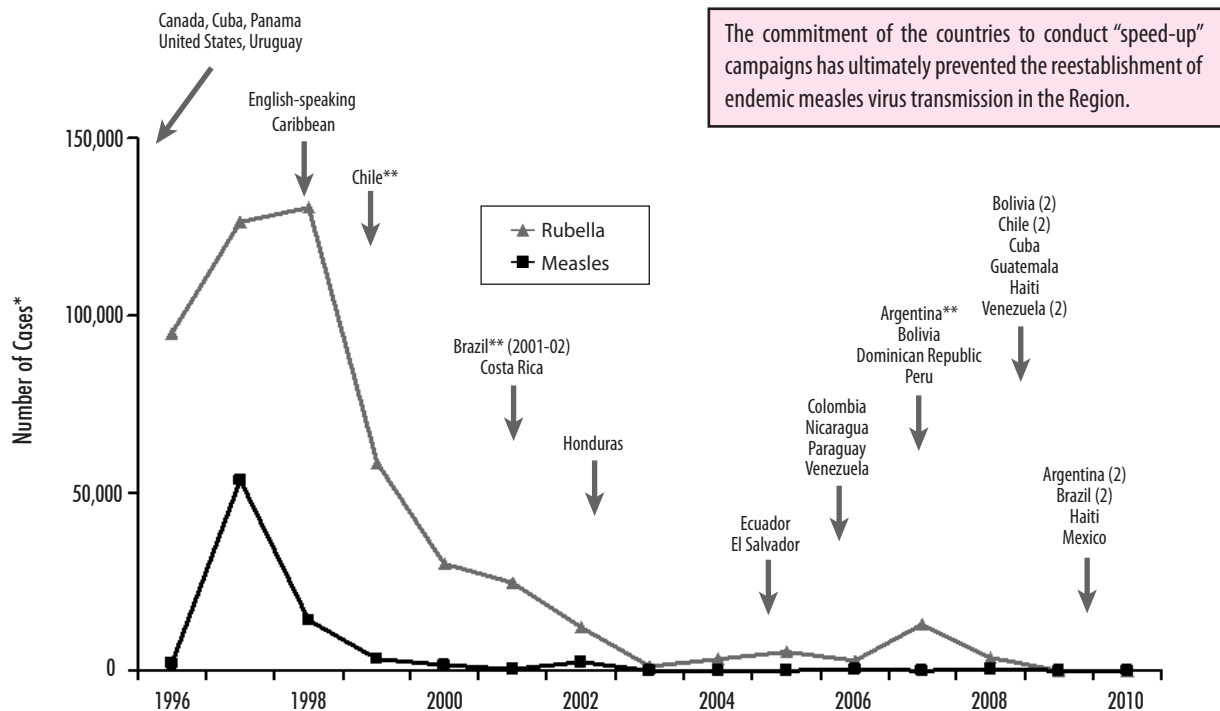


43 of the 44 countries of the Americas introduced MMR vaccine in their routine services. Haiti uses MR vaccine.

Source: Country reports to FCH/IM, PAHO.

* Data as of epidemiological week 26 (week ending 3 July 2010).

Rubella Elimination: A Catalyst for Maintaining Measles Elimination



* Includes rubella and measles cases reported to PAHO as of epidemiological week 26/2010 (week ending 3 July 2010).

** Countries that implemented "speed-up" campaigns (1st phase) in women only.

Source: Country reports to FCH/IM, PAHO.



PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION

27th PAN AMERICAN SANITARY CONFERENCE
59th SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 1-5 October 2007

CSP27.R2 (Eng.)
ORIGINAL: ENGLISH
5 October 2007

RESOLUTION
CSP27.R2

**ELIMINATION OF RUBELLA AND CONGENITAL
RUBELLA SYNDROME IN THE AMERICAS**

THE 27th PAN AMERICAN SANITARY CONFERENCE,

Having considered the progress report presented by the Director on the elimination of rubella and congenital rubella syndrome (CRS) in the Americas (Document CSP27/7);

Noting with satisfaction that tremendous progress has been achieved in obtaining the interruption of endemic rubella virus transmission, thus reducing the number of rubella cases in the Region by 98%, and that incidence is at its lowest to date in the Americas; and

Recognizing that considerable efforts will be needed to support and reach the elimination goal by 2010, requiring further commitment on the part of governments and the partner organizations that are collaborating on the elimination initiative, and the strengthening of ties between public and private sectors,

RESOLVES:

1. To congratulate all Member States and their health workers on the progress achieved to date in the elimination of rubella and congenital rubella syndrome (CRS) in the Americas, which demonstrates their level of commitment to the health of the population of the Western Hemisphere.

Resolution CSP27.R2

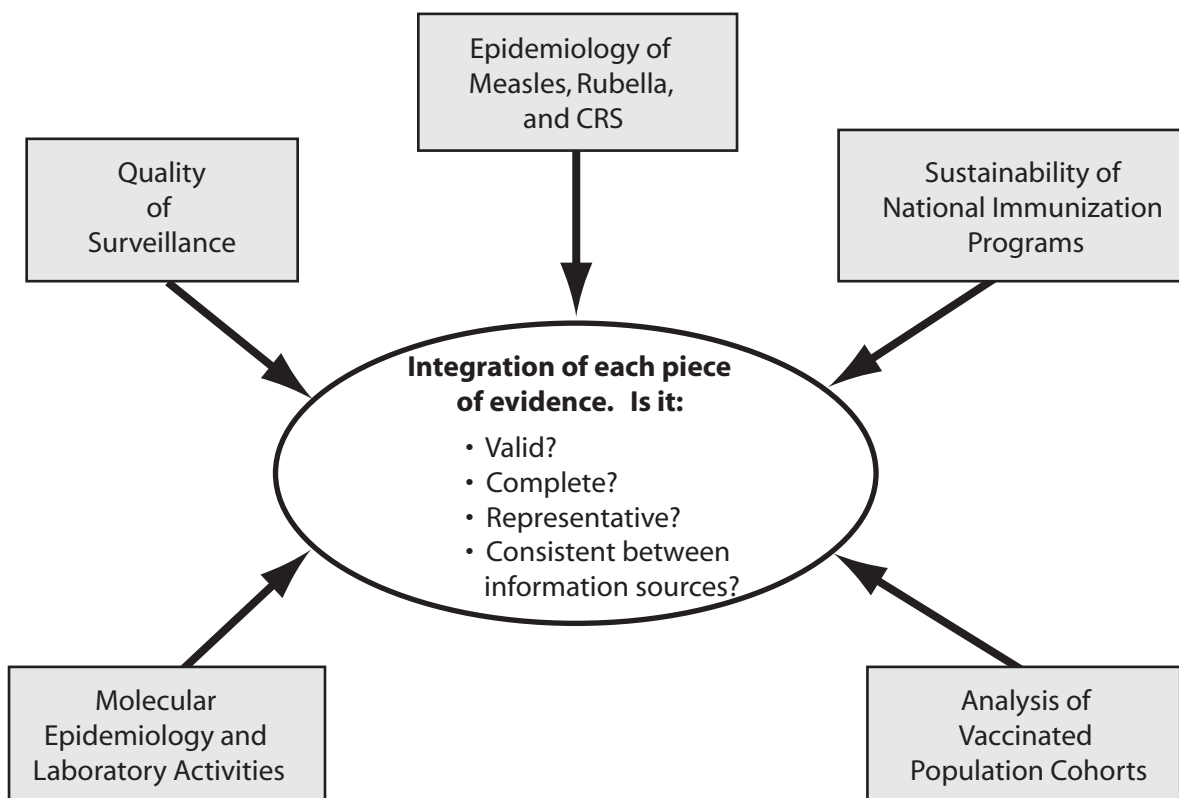
To urge all Member States to:

Establish national commissions to compile and analyze data to document and verify measles, rubella and CRS elimination, for review by an expert committee.

To request the Director to:

Form an Expert committee responsible for documenting and verifying the interruption of transmission of endemic measles virus and rubella virus.

Essential Components of the Plan of Action for the Documentation and Verification of Measles, Rubella, and CRS Elimination in the Americas



Epidemiological Surveillance Indicators for Diseases Preventable by New Vaccines in Reporting Countries, The Americas, 2009

Rotavirus Surveillance, January-December 2009

Data and Indicators	Bolivia	Chile	Colombia	Ecuador	El Salvador	Guatemala	Guyana	Honduras	Nicaragua	Panama	Paraguay	St. Vincent & the Grenadines	Suriname	Venezuela
Number of hospitalizations <5 years	10,827	21,525	22,291	37,824	33,374	20,883	1,582	41,896	14,804	10,701	5,197	674	2,109	12,380
Number <5 years admitted to hospital for diarrhea	1,840	2,090	1,781	7,647	4,037	4,225	139	3,829	3,537	1,266	262	91	573	1,979
Number <5 years who meet the case definition	1,584	1,005	514	2,073	1,499	2,021	13	3,664	2,327	755	210	...	...	556
Number <5 years with epidemiological form and stool sample	1,395	1,005	503	2,058	1,328	1,877	25	1,900	2,327	216	174	15	111	232
Positive cases of rotavirus	498	265	113	400	344	745	13	851	462	47	49	0	27	55
Deaths	0	...	0	0	...	...	...	18	2	0	...	...	...	0
% of positive cases of rotavirus	36%	26%	23%	19%	26%	40%	52%	45%	20%	22%	28%	0%	24%	24%

Bacterial Pneumonia Surveillance, January-December 2009

Data and Indicators	Bolivia*	Ecuador	El Salvador	Guatemala	Honduras	Panama	Paraguay	Venezuela
Number of hospitalizations <5 years	6,003	36,915	10,521	9,586	5,492	17,906	9,481	8,610
Number of suspected cases of pneumonia	1,712	3,588	547	2,112	650	2,850	1,599	1,488
Number of suspected cases with x-ray and epidemiological form	1,645	3,586	264	1,254	464	2,119	1,560	1,446
Number of probable cases of bacterial pneumonia	1,154	3,578	264	1,271	415	1,800	1,240	1,357
Probable cases with blood sample	987	2,635	195	1,150	224	1,124	1,179	1,021
Probable cases with pleural fluid sample	14	132	0	2	0	13	58	45
Confirmed cases of Hib	...	5	0	0	1	2	3	3
Confirmed cases of Hi	0	0	0	2	0	0	0	0
Confirmed cases of Spn	11	26	0	10	0	10	29	10
Confirmed cases caused by other bacteria	41	525	9	3	43	5	23	144
Deaths	8	116	72	13	27	21	11	37

Bacterial Meningitis Surveillance, January-December 2009

Data and Indicators	Bolivia**	Brazil	Ecuador	El Salvador	Guatemala	Honduras	Panama	Paraguay	Venezuela
Number of hospitalizations <5 years	6,003	...	36,916	10,521	9,586	5,492	17,906	10,271	8,610
Number of suspected cases of meningitis	67	2,377	414	41	123	47	110	85	479
Number of suspected cases with CSF test and epidemiological form	48	...	406	40	119	39	108	86	468
Number of probable meningitis cases	32	...	144	...	104	26	50	53	248
Confirmed cases of Hib	...	2,349	3	1	0	1	2	3	1
Confirmed cases of Hi	1	60	0	1	0	0	0	0	3
Confirmed cases of Nm	0	955	0	0	0	0	3	2	1
Confirmed cases of Spn	5	302	7	5	10	2	11	6	10
Confirmed cases caused by other bacteria	3	1,007	27	6	1	1	5	2	14
Deaths	3	...	9	18	4	5	8	6	8

Source: Country reports to FCH/IM, PAHO.

* months reported from January to August; ** months reported from January to September.