

# Immunization in the Americas

## 2006 Summary

Immunization Unit  
Family and Community Health Area



**Pan American  
Health  
Organization**

*Regional Office of the  
World Health Organization*



# preface

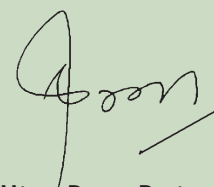
The countries of the Americas, with support from the Pan American Health Organization (PAHO), have made remarkable progress in providing children with an umbrella of protection against basic vaccine-preventable diseases. Sustained high national immunization coverage levels, the eradication of polio, the interruption of endemic measles virus transmission, and the more recent efforts towards rubella and congenital rubella syndrome elimination are hemispheric benchmarks of this progress.

Countries are now vaccinating age groups outside those usually targeted in the traditional childhood immunization program. Introducing seasonal influenza vaccine in adult populations at risk, vaccinating adolescents and adults, men and women for rubella elimination, and defining the disease burden of cervical cancer are activities that support the critical need for national immunization programs to transition from child to family immunization.

In support to countries, one of PAHO's roles is to disseminate information that can highlight progress and challenges faced in the Region. To that end, PAHO regularly publishes a number of technical documents related to immunization. These are the *Immunization Newsletter*, our series of immunization training modules, and our Field Guide series for rubella, measles, polio, neonatal tetanus, pentavalent vaccine, and yellow fever.

PAHO also publishes weekly surveillance bulletins for measles/rubella and polio. These bulletins provide real-time information regarding the progress in the eradication and elimination of these diseases. The data are country-specific so health authorities can monitor the advances of their work and compare it to neighboring countries. These tools have been highly practical and have contributed to the progress that I refer to above. Similarly, the second issue of *Immunization in the Americas* provides another opportunity to track country progress based on the final yearly reported data on coverage, surveillance, and other issues of interest. It is meant to be a user-friendly and reliable pocket reference. You can find all these documents on our web page (<http://www.paho.org/immunization>).

I hope that you find this second issue of *Immunization in the Americas* useful to your work. It should be an important tool to monitor the performance of our family immunization programs. We intend to continue to publish yearly updates.



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Director  
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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)	women of childbearing age (WCBA)	gross national income (US\$ per capita)		annual GDP growth (%)	population below int'l poverty line (%) (latest available)	national health expenditure as a % of GDP	
	2005	2005	2005	2005	current value 2004	ppp value 2004	2003-04	1998-2003	public expenditure 2004	private expenditure 2004
<b>The Americas</b>	891,822	18.1	16,206.2	272,219	17,361	19,506	4.9			
<b>North America</b>	330,546	13.6	4,505.7	93,673	40,157	38,932	4.1			
Bermuda	65	11.6	0.8	...	35,590 <sup>a</sup>	22,410 <sup>a</sup>	...	...	3.7 <sup>k</sup>	6.1 <sup>m</sup>
Canada	32,268	10.2	329.2	9,181	28,310	30,760	2.9	...	7.3	3.0
United States of America	298,213	13.9	4,175.7	84,493	41,440	39,820	4.2	...	7.2	5.9 <sup>a</sup>
<b>Latin America &amp; the Caribbean</b>	561,276	20.7	11,700.5	178,546	3,660	7,811	5.4			
<b>Latin America</b>	554,503	20.8	11,579.3	176,503	3,666	7,847	5.5			
<b>Mexico</b>	107,029	20.1	2,159.4	35,457	6,790	9,640	4.4	4.5	2.4	3.1 <sup>m</sup>
<b>Central American Isthmus</b>	40,001	27.8	1,121.1	12,452	2,238	4,739	3.6	18.3		
Belize	270	25.7	7.0	86	3,940	6,550	4.2	...	4.2 <sup>d</sup>	1.3 <sup>d,m</sup>
Costa Rica	4,327	18.3	79.5	1,381	4,470	9,220	4.2	2.2	5.0 <sup>a</sup>	3.4 <sup>a,n</sup>
El Salvador	6,881	23.9	165.6	2,195	2,320	4,890	1.5	19.0	2.4 <sup>a</sup>	3.8 <sup>a,m</sup>
Guatemala	12,599	34.3	438.1	3,816	2,190	4,260	2.7	13.5	1.8 <sup>a</sup>	4.7 <sup>a,m</sup>
Honduras	7,205	28.5	206.9	2,227	1,040	2,760	4.6	20.7	3.5	2.5 <sup>m</sup>
Nicaragua	5,487	27.8	153.9	1,746	830	3,480	5.1	45.1	3.3 <sup>c</sup>	4.7 <sup>c,n</sup>
Panama	3,232	21.6	70.1	1,002	4,210	6,730	6.2	6.5	4.5 <sup>c</sup>	2.3 <sup>a,n</sup>
<b>Latin Caribbean</b>	33,678	19.8	670.0	10,459	3,046	6,528	1.7			
Cuba	11,269	11.8	133.3	3,417	...	...	1.1	...	6.3 <sup>a,l</sup>	...
Dominican Republic	8,895	23.6	210.7	2,874	2,100	6,860	2.0	2.5	1.4 <sup>d</sup>	3.3 <sup>d,m</sup>
French Guiana	187	23.3	4.4	56	...	...	...	...	...	...
Guadeloupe	448	14.8	6.6	136	...	...	...	...	...	...
Haiti	8,528	29.6	254.4	2,703	400	1,730 <sup>e</sup>	0.4	53.9	2.7 <sup>l</sup>	3.0
Martinique	396	13.1	5.2	119	...	...	...	...	...	...
Puerto Rico	3,955	14.0	55.4	1,153	10,950 <sup>c</sup>	16,210 <sup>c</sup>	5.6 <sup>c</sup>	...	3.5	...
<b>Andean Area</b>	122,727	22.2	2,747.3	38,806	2,477	5,680	7.5	10.7		
Bolivia	9,182	28.5	263.5	2,794	960	2,600	3.6	23.2	4.2 <sup>a</sup>	2.9 <sup>a,m</sup>
Colombia	45,600	21.1	966.8	14,663	2,020	6,940	4.1	7.0	3.4 <sup>l</sup>	2.6 <sup>m</sup>
Ecuador	13,228	22.1	294.3	4,118	2,210	3,770	6.9	15.8	2.2 <sup>l</sup>	2.4 <sup>m</sup>
Peru	27,968	22.4	630.0	8,807	2,360	5,400	4.8	12.5	2.3 <sup>a</sup>	1.5 <sup>a,n</sup>
Venezuela	26,749	22.0	592.7	8,424	4,030	5,830	17.9	8.3	3.5 <sup>a</sup>	2.8 <sup>a,m</sup>
<b>Brazil</b>	186,405	19.8	3,706.4	59,934	3,000	7,940	4.9	7.5	3.4 <sup>a,k</sup>	3.6 <sup>a,o</sup>
<b>Southern Cone</b>	64,663	18.1	1,175.1	19,395	3,775	11,117	7.9	6.4		
Argentina	38,747	17.7	690.4	11,418	3,580	12,530	9.0	7.0	4.7 <sup>d</sup>	3.8 <sup>d,n,p</sup>
Chile	16,295	15.3	250.6	5,107	5,220	10,610	6.1	2.0	4.4 <sup>a</sup>	3.9 <sup>a,m</sup>
Paraguay	6,158	28.5	177.5	1,897	1,140	4,820	4.0	16.4	2.2 <sup>a</sup>	4.4 <sup>a,m</sup>
Uruguay	3,463	16.3	56.6	973	3,900	9,030	11.9	2.0	6.4 <sup>k</sup>	2.6 <sup>a,p</sup>
<b>Non-Latin Caribbean</b>	6,773	17.9	121.2	2,043	5,122	7,140	2.5			
Anguilla	13	14.3	0.2	...	...	...	...	...	4.7 <sup>ch</sup>	2.2 <sup>m</sup>
Antigua & Barbuda	69	17.3	1.2	...	9,480	11,100	4.1	...	8.7 <sup>b</sup>	0.7 <sup>b,m</sup>
Aruba	72	11.3	0.8	...	...	...	...	...	12.7 <sup>d,l</sup>	1.5 <sup>d,m</sup>
Bahamas, The	323	18.9	6.1	105	15,100	16,350	0.7	...	3.1 <sup>a</sup>	2.9 <sup>a,m</sup>
Barbados	270	11.8	3.2	85	10,530	15,060 <sup>e</sup>	1.3 <sup>e</sup>	...	4.3 <sup>a</sup>	3.8 <sup>a,m</sup>
Cayman Islands	44	12.9	0.6	...	...	...	...	...	3.3	...
Dominica	69	15.7	1.1	...	3,670	5,290	2.0	...	4.4 <sup>b</sup>	2.1 <sup>b,m</sup>
Grenada	90	22.3	2.0	...	3,750	7,050	-2.8	...	4.5	3.2 <sup>m</sup>
Guyana	751	20.2	15.1	252	1,020	4,240	1.6	3.0	1.1 <sup>d</sup>	...
Jamaica	2,651	19.6	51.9	846	3,300	3,950	0.9	2.0	2.5 <sup>a</sup>	4.5 <sup>a,m</sup>
Montserrat	9	17.6	0.2	...	...	...	...	...	6.1	1.1 <sup>m</sup>
Netherlands Antilles	183	13.7	2.5	56	...	...	...	...	11.7 <sup>d</sup>	1.2 <sup>d</sup>
Saint Kitts & Nevis	39	18.1	0.7	...	6,980	10,910	2.1	...	2.5 <sup>b</sup>	1.8 <sup>b,m</sup>
Saint Lucia	161	18.8	3.0	53	4,180	5,590	3.5	...	3.3 <sup>b</sup>	2.5 <sup>b,m</sup>
Saint Vincent & the Grenadines	119	20.1	2.4	39	3,400	6,030	6.0	...	3.9 <sup>b</sup>	0.7 <sup>b,m</sup>
Suriname	449	20.4	9.2	141	2,230	...	4.6	...	3.8	...
Trinidad & Tobago	1,305	14.3	18.7	433	8,730	11,430	6.2	...	3.0 <sup>d</sup>	2.0 <sup>d,m</sup>
Turks & Caicos Islands	21	22.2	0.5	...	...	...	...	...	3.4 <sup>d</sup>	...
Virgin Islands (UK)	23	14.9	0.3	...	...	...	...	...	1.8 <sup>c</sup>	...
Virgin Islands (US)	112	13.8	1.5	32	...	...	...	...	3.0	...

(a) value 1997; (b) value 2000; (c) value 2001; (d) value 2002; (e) value 2003; (f) value 2004; (g) value 2005;

(h) general government expenditures in compensations to employees plus intermediate consumption at market prices;

(k) expenditure by public health sector institutions; (l) expenditures by activities or budgetary program; (m) health or medical care expense;

(n) health conservation and medical care expenses; (o) health and personal care; (p) excludes compulsory contributions to health insurance systems.

# immunization coverage

	11	12	13	14	15	16	17	18	19	20	21	22
	percentage of coverage									percentage of municipalities		total number of districts/ municipalities
	< 1 year of age						1 year of age		Influenza (for older adults)	with coverage level $\geq$ 95%		
	BCG	polio3	DPT1	DPT3	Hib3	Hep B3	MMR	MMR2 <sup>a</sup>		DPT3	MMR	
2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
<b>The Americas</b>	96	92	95	93	91	90	93					
<b>North America</b>	NA	90	99	95	93	91	91					
Bermuda	NA	85	98 <sup>b</sup>	85	85	82	96	84	65	0.0	0.0	1
Canada	NA	89 <sup>b,c,l</sup>	...	94 <sup>b,c,l</sup>	...	...	94 <sup>b,c,l</sup>	...	...	...	...	13 <sup>d</sup>
United States of America	NA	90 <sup>b,c</sup>	99 <sup>b,c</sup>	95 <sup>b,c</sup>	93 <sup>b,c</sup>	91 <sup>b,c</sup>	91 <sup>b,c</sup>	...	65	66.7	7.8	51 <sup>e</sup>
<b>Latin America &amp; the Caribbean</b>	96	92	94	92	90	89	93			61.3	61.2	15,076
<b>Latin America</b>	96	93	94	93	90	89	93			61.2	61.2	14,893
<b>Mexico</b>	99	98	99 <sup>m</sup>	98	98	98	96	97	85	95.9	91.3	2,444
<b>Central American Isthmus</b>	93	90	94	90	69	69	94			41.4	47.9	1,216
Belize	96	96	97	96	96	96	95	87	NA	83.3	66.7	6
Costa Rica	88	91	89	91	89	90	89	...	98	31.0	31.0	81
El Salvador	84	89	89	89	89	89	99	87	96	37.4	35.9	262
Guatemala	96	92	99 <sup>f</sup>	92	39	39	93	NA	NA	48.0	58.9	331
Honduras	91	91	88	91	91	91	92	NA	99 <sup>f</sup>	43.0	54.7	298
Nicaragua	99 <sup>f</sup>	87	92	86	86	86	96	NA	NA	21.6	34.0	162
Panama	99 <sup>f</sup>	86	95	85	85	85	99	89	99 <sup>f</sup>	71.1	61.8	76
<b>Latin Caribbean</b>	84	80	73	82	90	92	82			40.1	50.3	460
Cuba	99	99 <sup>f</sup>	...	99 <sup>f</sup>	94	99 <sup>f</sup>	98	...	99 <sup>f</sup>	63.3	78.7	169
Dominican Republic	99 <sup>f</sup>	86	92	87	87	87	99 <sup>f</sup>	NA	NA	27.9	45.2	158
French Guiana	...	...	...	...	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...	...	...	...	...
Haiti	62	65	57	68	NA	NA	59 <sup>g</sup>	NA	NA	24.8	20.3 <sup>g</sup>	133
Martinique	...	...	...	...	...	...	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...	...	...	...
<b>Andean Area</b>	91	85	91	88	85	86	85			36.3	34.2	3,805
Bolivia	88	84	93	85	85	85	89	NA	NA	24.7	29.0	324
Colombia	87	87	86	87	87	87	89	...	10	36.6	34.9	1,119
Ecuador	99 <sup>f</sup>	93	99	94	94	94	93	NA	NA	37.1	41.9	167
Peru	93	85	87	89	74	77	80	NA	NA	...	...	1,829
Venezuela	95	80	98	87	87	88	76	NA	NA	45.1	33.1	366
<b>Brazil</b>	99 <sup>f</sup>	98	96	96	96	92	99 <sup>m</sup>	...	84	62.0	57.0	5,564
<b>Southern Cone</b>	97	91	90	91	91	88	95			56.9	60.0	1,404
Argentina	99 <sup>f</sup>	92	90	92	92	87	99 <sup>f</sup>	99 <sup>f</sup>	...	49.8	60.2	548
Chile	95	92	92	91	91	NA	90	96	95	49.3	44.3	345
Paraguay	88	87	87	87	87	87	90	28	13	40.9	49.1	232
Uruguay	99 <sup>f</sup>	96	99	96	96	96	95	...	...	93.5	87.8	279
<b>Non-Latin Caribbean</b>	95	88	91	90	91	91	88			64.5	57.4	183
Anguilla	97	91	92	94	94	91	92	...	...	...	...	5 <sup>b</sup>
Antigua & Barbuda	NA	98	91 <sup>b</sup>	99 <sup>f</sup>	99	99	99 <sup>f</sup>	46	NA	...	...	26 <sup>b</sup>
Aruba	...	...	...	...	...	...	...	...	NA	...	...	...
Bahamas, The	NA	93	99	93	93	93	85	88	...	73.2	...	62
Barbados	NA	91	...	92	92	92	93	98	NA	...	...	...
Cayman Islands	92 <sup>b</sup>	92 <sup>b</sup>	96 <sup>b</sup>	92 <sup>b</sup>	92 <sup>b</sup>	77 <sup>b</sup>	87 <sup>b</sup>	...	...	...	...	...
Dominica	98	98	...	98	NA	NA	98	...	NA	...	...	...
Grenada	NA	99 <sup>f</sup>	93	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	81	NA	100	100	7
Guyana	96	93	93	93	93	93	92	72	NA	38.5	46.2	13
Jamaica	95	84	91	88	89	87	84	...	NA	0.0	0.0	13
Montserrat	99 <sup>f</sup>	98	...	98	...	...	94	...	NA	...	...	...
Netherlands Antilles	NA	67 <sup>b,k</sup>	...	67 <sup>b,k</sup>	67 <sup>b,k</sup>	...	68 <sup>b,k</sup>	...	...	...	...	...
Saint Kitts & Nevis	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	...	NA	100	100	17
Saint Lucia	99 <sup>f</sup>	95	99 <sup>f</sup>	95	95	95	94	...	NA	...	...	8 <sup>b</sup>
Saint Vincent & the Grenadines	95	99	97	99	99	99	97	93	NA	100	100	9
Suriname	NA	84	99 <sup>f</sup>	83	NA	NA	91	86	NA	...	...	10
Trinidad & Tobago	NA	95	93	95	97	97	93	...	NA	55.6	44.4	9
Turks & Caicos Islands	99 <sup>f</sup>	97	99 <sup>f</sup>	95	96	96	80	...	NA	...	...	4
Virgin Islands (UK)	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	99 <sup>f</sup>	<33	...	...	...
Virgin Islands (US)	...	...	...	...	...	...	...	...	NA	...	...	...

(a) target groups vary by country; (b) value 2004);  
(c) <2 years of age; (d) number of provinces and territories; (e) refers to number of states;  
(f) reported coverage  $\geq$  100% is recorded as 99%; (g) coverage data for measles vaccine in children <1 year of age;  
(h) based on coverage in a large clinic; (k) St. Maarten only; (l) preliminary value; (m) Mexico: Pentavalent 1 = 99.6%, Brazil: MMR=99.6%.

# 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				
	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
<b>The Americas</b>	0	85	5,296	20	114	579	139	972	34,654	272	316	34,337
<b>North America</b>	0	72	331	2	0	20	14	34	27,847	0	114	397
Bermuda	0	0	0	...	...	...	...	...	...	...	...	...
Canada	0	6 <sup>a</sup>	320	1	0	4	0	4	2,231	0	112 <sup>b</sup>	83
United States of America	0	66 <sup>a</sup>	11	1	0	16	14	30	25,616	0	2 <sup>c</sup>	314
<b>Latin America &amp; the Caribbean</b>	0	13	4,965	18	114	559	125	938	6,807	272	202	33,940
<b>Latin America</b>	0	13	4,965	18	114	550	121	925	6,799	272	198	33,937
<b>Mexico</b>	0	6 <sup>a</sup>	38	1	1	60	11	71	349	0	4	8,651
<b>Central American Isthmus</b>	0	1	51	1	2	33	8	41	174	0	20	3,201
Belize	0	0	0	0	0	0	0	0	0	0	0	30
Costa Rica	0	1	0	0	0	0	0	0	7	0	0	46
El Salvador	0	0	0	0	1	5	2	7	5	0	2	488
Guatemala	0	0	4	1	0	5	1	6	0	0	16	1,807
Honduras	0	0	0	0	0	16	3	19	134	0	0	408
Nicaragua	0	0	47	...	1	7	1	8	0	0	0	219
Panama	0	0	0	0	0	0	1	1	28	0	2	203
<b>Latin Caribbean</b>	0	0	6	0	75	44	10	173	559	243	7	940
Cuba	0	0	0	0	0	0	0	0	0	0	2	346
Dominican Republic	0	0	6	...	4	44	10	54	63	39	5	...
French Guiana	0	0	...	...	...	...	...	...	...	...	...	...
Guadeloupe	0	...	...	...	...	...	...	...	...	...	...	...
Haiti	0	0	0	0	71	...	...	119	496	204	...	594
Martinique	0	...	...	...	...	...	...	...	...	...	...	...
Puerto Rico	0	0	0	...	...	...	...	...	...	...	...	...
<b>Andean Area</b>	0	0	4,588	12	24	53	6	180	1,103	2	27	6,498
Bolivia	0	0	8	0	5	13	2	15	1	0	7	0
Colombia	0	0	85	5	9	...	...	72	139	1	19	2,366
Ecuador	0	0	0	0	6	...	...	16	...	0	1	1,037
Peru	0	0	3,672	7 <sup>d</sup>	2	40	4	44	127	0	0	...
Venezuela	0	0	823	...	2	...	...	33	836	1	...	3,095
<b>Brazil</b>	0	6 <sup>a</sup>	233	4	10	340	80	420	1,328	27	108	...
<b>Southern Cone</b>	0	0	49	0	2	20	6	40	3,286	0	32	14,647
Argentina	0	0	0	0	0	...	...	14	2,060	0	20	10,727
Chile	0	0	47	0	0	8	0	8	1,213	0	7	1,579
Paraguay	0	0	2	0	2	11	6	17	13	0	3	148
Uruguay	0	0	0	0	0	1	0	1	0	0	2	2,193
<b>Non-Latin Caribbean</b>	0	0	0	0	0	9	4	13	8	0	4	3
Anguilla	0	0	0	...	...	...	...	...	...	...	...	...
Antigua & Barbuda	0	0	0	0	0	0	0	0	0	0	0	0
Aruba	0	...	...	...	...	...	...	...	...	...	...	...
Bahamas, The	0	0	0	0	0	0	0	0	0	0	0	0
Barbados	0	0	0	...	...	...	...	...	...	...	...	...
Cayman Islands	0	0	0	...	...	...	...	...	...	...	...	...
Dominica	0	0	0	...	...	...	...	...	...	...	...	...
Grenada	0	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	8	4	12	8	0	0	3
Montserrat	0	0	0	...	...	...	...	...	...	...	...	...
Netherlands Antilles	0	...	...	...	...	...	...	...	...	...	...	...
Saint Kitts & Nevis	0	0	0	0	0	0	0	0	0	0	0	0
Saint Lucia	0	0	0	...	...	...	...	...	...	...	...	...
Saint Vincent & the Grenadines	0	0	0	...	0	0	0	0	0	0	0	0
Suriname	0	0	0	0	0	1	0	1	0	0	4	0
Trinidad & Tobago	0	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	...	...	...	...	...	...	...	...	...
Virgin Islands (US)	0	0	0	...	...	...	...	...	...	...	...	...

(a) imported or related to importation: Brazil 6 cases, Canada 4 cases, Mexico 6 cases, USA 25 cases, the rest are of unknown origin;

(b) includes all invasive *Haemophilus influenzae* type b disease, including but not limited to meningitis;

(c) aged <5 years; (d) plus 10 congenital rubella infection (CRI) cases.

# program management and financing

	35	36	37	38	39	40	41	42	43
	multi-year strategic plan for national immunization program	number of ICC meetings	number of NCIP meetings	updated inventory of all refrigeration equipment	AD syringe used	national system to monitor ESAVIs	spending on routine immunization financed using gov't funds (%)	spending on vaccine purchases financed using gov't funds (%)	budget line for vaccine purchases
	2005	2005	2005	2005	2005	2005	2005	2005	2005
<b>The Americas</b>									
<b>North America</b>									
Bermuda	no	2	1	yes	no <sup>a</sup>	yes	...	...	...
Canada	yes	NA	3	no	all <sup>a</sup>	yes	100	100	...
United States of America	no <sup>a</sup>	NA	3	...	all <sup>a</sup>	yes	NA	NA	NA
<b>Latin America &amp; the Caribbean</b>									
<b>Latin America</b>									
Mexico	yes	NA	11	yes	all	yes	100	100	yes
<b>Central American Isthmus</b>									
Belize	yes	NA	no NCIP	yes	no	yes	100	100	yes
Costa Rica	no	NA	9	yes	no <sup>a</sup>	yes	100	100	yes
El Salvador	yes	2	15	yes	no	yes	99	100	yes
Guatemala	yes	1	2	partially	all	yes	96 <sup>a</sup>	100 <sup>a</sup>	yes <sup>a</sup>
Honduras	yes	2	5	yes	some	yes	93	100	yes
Nicaragua	yes	6	6	yes	no	yes	99	100	yes
Panama	yes	0	4 <sup>a</sup>	yes	some <sup>a</sup>	yes	100	100	yes
<b>Latin Caribbean</b>									
Cuba	yes <sup>a</sup>	2	2	yes	no	yes	99	99	...
Dominican Republic	yes	4	no NCIP	yes	some	yes	75	65	yes
French Guiana	...	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...	...
Haiti	yes	2	no NCIP	no	all	no	10	10	no
Martinique	...	...	...	...	...	...	...	...	...
Puerto Rico	...	...	...	...	...	...	...	...	...
<b>Andean Area</b>									
Bolivia	yes	5	3	partially	all	no	88	40	yes
Colombia	yes	1	3	yes	no	yes	100	100	...
Ecuador	no	2	2	yes	some	yes	99	100	yes
Peru	yes	1	3	partially	no	yes	100 <sup>a</sup>	100 <sup>a</sup>	yes <sup>a</sup>
Venezuela	yes	NA	no NCIP	partially	no	yes	100	100	yes
Brazil	yes	3	3	yes	all	yes	100	100	yes
<b>Southern Cone</b>									
Argentina	no	0	2	yes	no	yes	100	100	yes
Chile	no	NA	5	yes	no	yes	100	100	yes
Paraguay	yes	3	3	yes	some	yes	98	100	yes
Uruguay	yes	NA	3	yes	no	no	100	100	yes
<b>Non-Latin Caribbean</b>									
Anguilla	no <sup>a</sup>	...	...	...	...	...	...	...	...
Antigua & Barbuda	...	...	...	...	no	...	...	...	...
Aruba	...	...	...	...	...	...	...	...	...
Bahamas, The	yes	0	no NCIP	partially	some	yes	100	100	yes
Barbados	yes <sup>a</sup>	1 <sup>a</sup>	1 <sup>a</sup>	...	no <sup>a</sup>	yes <sup>a</sup>	96 <sup>a</sup>	100 <sup>a</sup>	yes <sup>a</sup>
Cayman Islands	no <sup>a</sup>	...	...	...	no <sup>a</sup>	yes <sup>a</sup>	99 <sup>a</sup>	100 <sup>a</sup>	...
Dominica	yes	...	...	yes	...	yes	...	...	...
Grenada	no	0	2 <sup>a</sup>	yes	no	yes	100	100	yes
Guyana	yes	2	no NCIP	yes	all	yes	95	95	yes
Jamaica	no	1	no NCIP	no	no	yes	99	100	yes <sup>b</sup>
Montserrat	...	...	...	...	...	...	...	...	...
Netherlands Antilles	...	...	...	...	...	...	...	...	...
Saint Kitts & Nevis	no <sup>a</sup>	...	no NCIP	yes	all	no <sup>a</sup>	100	100	yes <sup>b</sup>
Saint Lucia	no <sup>a</sup>	...	no NCIP <sup>a</sup>	...	some <sup>a</sup>	yes <sup>a</sup>	...	...	...
Saint Vincent & the Grenadines	yes	0	no NCIP	yes	all	yes	100	100	yes
Suriname	no	NA	...	partially	some	no <sup>a</sup>	...	...	...
Trinidad & Tobago	yes	0	1	yes	no	yes	98	100	yes
Turks & Caicos Islands	no	0	no NCIP	partially	some <sup>a</sup>	yes <sup>a</sup>	...	...	...
Virgin Islands (UK)	...	...	...	...	...	...	...	...	...
Virgin Islands (US)	...	...	...	...	...	...	...	...	...

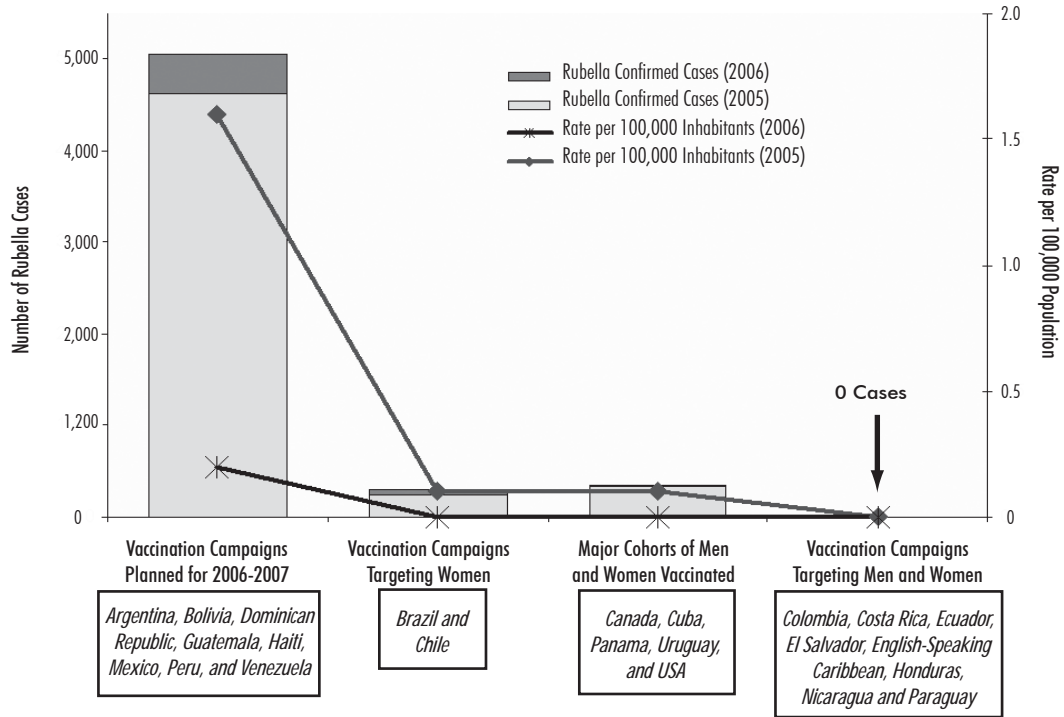
(a) value 2004; (b) budget line is for medications and vaccines.

# year of introduction of selected vaccines

	44	45	46	47	48	49	50	51	52
	MMR	MMR2	Haemophilus influenzae type b	Hepatitis B	Tetavalent (DPT-Hib or DPT-Hep B)	Pentavalent (DPT-Hib-Hep B)	Influenza	Yellow Fever	Rotavirus
<b>The Americas</b>									
<b>North America</b>									
Bermuda	1979	...	1989	1998	...	NA	1970s	NA	NA
Canada	1983	1997	1986 <sup>c</sup>	1998	NA	NA	...	NA	NA
United States of America	1969	1989	1991	1991	NA	NA	1970s	NA	2006
<b>Latin America &amp; the Caribbean</b>									
<b>Latin America</b>									
<b>Mexico</b>	1998	1998 <sup>b</sup>	1998	1998	NA	1998	2004	NA	2006 <sup>l</sup>
<b>Central American Isthmus</b>									
Belize	1996	2005	2001	1999	2001	2002	NA	NA	NA
Costa Rica	1987	1992	1998	2000	NA	2000	2004	NA	NA
El Salvador	1997	1999	2002	1999	NA	2002	2004	NA	2006 <sup>g</sup>
Guatemala	2001	NA	2005	2005	NA	2005	NA	NA	NA
Honduras	1997	NA	1999	2000	NA	2000	2003	NA	NA
Nicaragua	1998	NA	1999	1999	NA	1999	2006	NA	2006 <sup>g</sup>
Panama	1992	1992	2000	1999	NA	2000	2005	1974 <sup>h</sup>	2006
<b>Latin Caribbean</b>									
Cuba	1986	2004	1999	1990	2005	NA	1998	NA	NA
Dominican Republic	2004	NA	2001 <sup>d</sup>	1994	NA	2001 <sup>d</sup>	2006	NA	NA
French Guiana	...	...	...	...	...	...	...	...	NA
Guadeloupe	...	...	...	...	...	...	...	NA	NA
Haiti	NA	NA	NA	NA	NA	NA	NA	NA	NA
Martinique	...	...	...	...	...	...	...	NA	NA
Puerto Rico	...	...	...	...	...	...	...	NA	NA
<b>Andean Area</b>									
Bolivia	2000	NA	2000	2000	NA	2000	NA	2003	2007 <sup>k</sup>
Colombia	1995	1997	1998	1994	NA	2001	2005	2002	NA
Ecuador	1999	NA	2003	1999	NA	2003	2006	1999 <sup>h</sup>	2007 <sup>k</sup>
Peru	2003	NA	1999 <sup>e</sup>	1998	NA	1999 <sup>e</sup>	NA	2001	NA
Venezuela	1998	NA	2000	2000	NA	2004	2006	2000	2006
<b>Brazil</b>	2000 <sup>a</sup>	2004	1999	1998 <sup>a</sup>	2002	NA <sup>a</sup>	1999	1991 <sup>h</sup>	2006
<b>Southern Cone</b>									
Argentina	1997	1998	1997	2000	1997	NA	1993	NA	NA
Chile	1990	1992	1996	2005	1996	2006 <sup>g</sup>	1970s	NA	NA
Paraguay	2002	2004	2002	2002	NA	2002	2005	2000	NA
Uruguay	1982	1992	1994	1999	NA	1999	1998	NA	NA
<b>Non-Latin Caribbean</b>									
Anguilla	1987	...	1998	1997	NA	2000	2005	NA	NA
Antigua & Barbuda	1988	1997	2000	1999	NA	2000	NA	NA	NA
Aruba	1988	1992	...	...	...	...	...	NA	NA
Bahamas, The	1991	2001	1998	2001	NA	2001	2005	NA	NA
Barbados	1982	1997	2000	2000	NA	2000	2006	NA	NA
Cayman Islands	1983	...	1992	1997	NA	NA	1990	NA	NA
Dominica	1989	2001	2006	2006	NA	2006	NA	NA	NA
Grenada	1993	...	2000	2000	NA	2000	NA	NA	NA
Guyana	1995	2001	2001	2001	NA	2001	NA	1980	NA
Jamaica	1993	2002	2003	2001	NA	2003	2006	NA	NA
Montserrat	...	...	1999	...	NA	2000	NA	NA	NA
Netherlands Antilles	...	...	1995 <sup>f</sup>	...	...	...	1999	NA	NA
Saint Kitts & Nevis	1987	1997	2000	1997	NA	2000	NA	NA	NA
Saint Lucia	1986	1991	2002	2002	NA	2002	2006	NA	NA
Saint Vincent & the Grenadines	1991	1997	2003	2003	NA	2003	NA	NA	NA
Suriname	1993	2005	2005	2003	NA	2005	NA	2000	NA
Trinidad & Tobago	1984	2001	1999	2003	NA	2003	NA	2000	NA
Turks & Caicos Islands	1986	...	1999	1999	NA	2000	2005	NA	NA
Virgin Islands (UK)	1986	...	1999	1999	NA	2000	2000	NA	NA
Virgin Islands (US)	...	...	...	...	NA	...	...	NA	NA

(a) MMR gradual implementation since 1992, HepB gradual implementation since 1989, Pentavalent (NA) used in special circumstances only; (b) introduced 2nd dose of measles in 1993; (c) introduced Hib conjugate vaccine in 1992; (d) fully implemented by 2003; (e) at subnational level, expanded to the national level in 2005; (f) except St. Eustatius (1997) and St. Maarten (2000); (g) plan to introduce in late 2006; (h) in enzootic areas; (k) plan to introduce in 2007; (l) at subnational level.

## Rubella Confirmed Cases and Rates According to Elimination Strategies Implemented by Countries, The Americas, 2005 and 2006\*



\* Includes data reported by countries during year 2005 (n=5,296) through EW 26/2006 (n=477)

Source: Country reports to FCH-IM/PAHO.



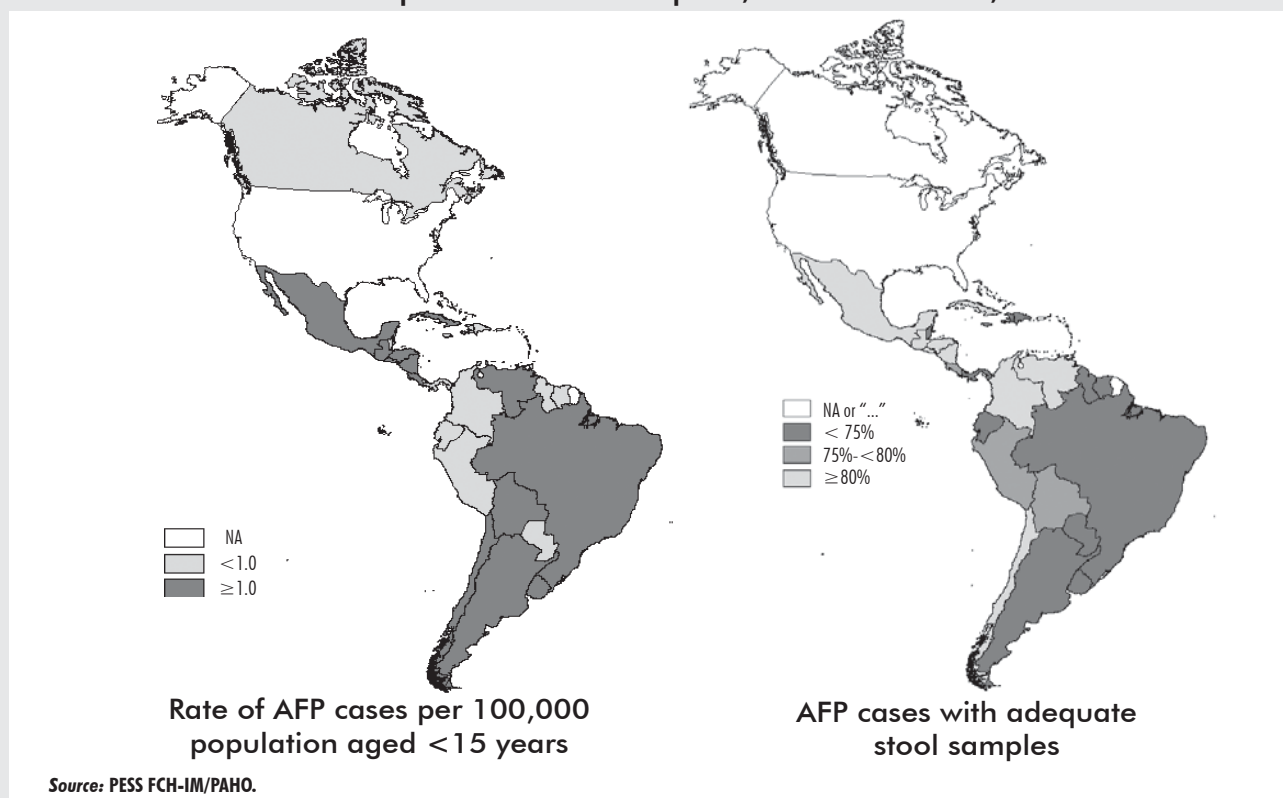
## Measles and Rubella Surveillance Indicators, The Americas, 2005

	Number of suspect cases	Number of base reporting sites	% sites reporting weekly	% cases with adequate investigation	% cases with adequate samples	% lab samples received ≤5 days	% lab sample results ≤4 days	% cases discarded by lab
Argentina	601	24	81	5	93	74	87	99
Bolivia	240	2,657	18	97	98	85	72	100
Brazil	20,936	11,306	91	76 <sup>a</sup>	79	46	91	95
Canada	...	...	...	...	...	...	...	...
CAREC	242	735	100	79	95	25	95	99
Chile	562	119	99	15	86	76	96	99
Colombia	2,326	4,859	93	49	92	78	89	96
Costa Rica	94	46	85	95	100	84	83	87
Cuba	1,322	444	95	81 <sup>a</sup>	100	20	100	95
Dominican Republic	254	243	79	60	100	54	69	96
Ecuador	411	1,528	70	60	99	80	88	99
El Salvador	115	16	83	56	97	86	90	100
French Guiana	101	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...
Guatemala	372	1,178	55	93	99	69	84	100
Haiti	20	...	94	98	95	58	47	89
Honduras	276	309	89	88	99	70	88	100
Martinique	...	...	...	...	...	...	...	...
Mexico	4,258	14,517	93	99 <sup>b</sup>	98	93	77	99
Nicaragua	280	160	100	61	100	75	89	100
Panama	325	250	94	85	96	64	88	98
Paraguay	617	417	91	75	99	90	100	98
Peru	7,147	3,226	98	88	85	81	56	91
Puerto Rico	...	...	...	...	...	...	...	...
Uruguay	16	56	45	0	100	100	88	100
United States of America	...	...	...	...	...	...	...	...
Venezuela	2,970	2,355	86	81	95	61	64	96
<b>TOTAL</b>	<b>43,485</b>	<b>44,445</b>	<b>78</b>	<b>77</b>	<b>86</b>	<b>61</b>	<b>82</b>	<b>95</b>

(a) Includes information on active case-searches; (b) Only considers home visit within 48 hours of notification.

Source: MESS FCH-IM/PAHO, Country reports to FCH-IM/PAHO.

## Rate of Acute Flaccid Paralysis (AFP) and Percentage of AFP Cases With Adequate Stool Samples, The Americas, 2005



## Immunization Campaigns during Vaccination Week in the Americas, 2003-2006

Activity	2003	2004	2005	2006
Rubella Elimination	-	Ecuador, El Salvador	Paraguay	Bolivia
Measles Follow-up Campaign	Bolivia Mexico Paraguay	Honduras Nicaragua	Argentina Suriname	Colombia Mexico Venezuela
Poliomyelitis Eradication	Mexico Venezuela	Venezuela	Colombia, Cuba, Dominican Republic, Honduras, Venezuela	Cuba, Dominican Republic, El Salvador, Guatemala, Honduras
Yellow Fever Vaccination	Venezuela	Venezuela	Colombia, Peru, Venezuela, Ecuador	Colombia Peru
Influenza Vaccination	-	Brazil Chile	Brazil	Argentina, Brazil, Chile, Panama, Paraguay, Uruguay
DTP/Pentavalent Vaccination	Venezuela	Cuba	Bahamas, Colombia, Guatemala	Ecuador
Neonatal Tetanus Elimination	Mexico	-	Colombia Panama	Ecuador Paraguay
New Vaccine Introduction	-	Dominican Republic (MMAR)	Guatemala (Pentavalent)	Panama (Rotavirus, Influenza)

## Introduction of Influenza Vaccine in Latin America and the Caribbean, 1975-2006



Source: Country reports to FCH-IM/PAHO.

## Data and Indicators of Rotavirus Sentinel Hospital-based Surveillance in Reporting Countries, The Americas, 2005

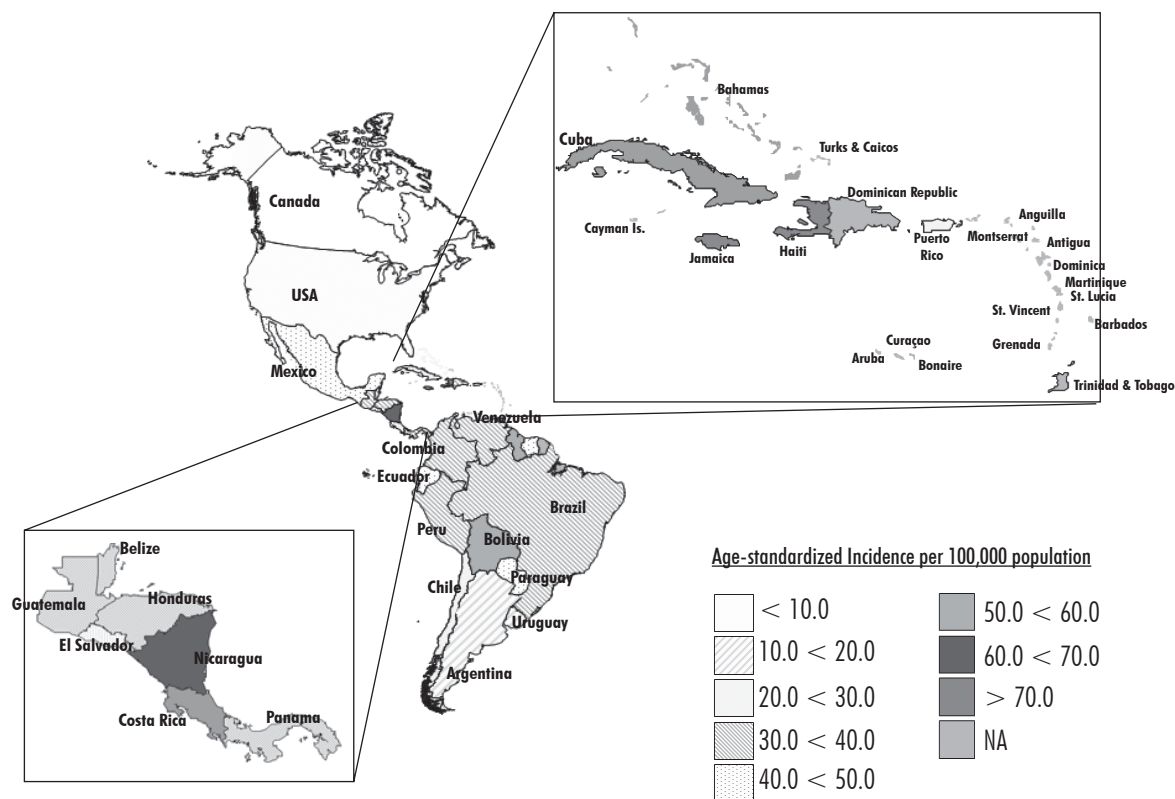
DATA and INDICATORS	Bolivia Nov-Dec	CAREC <sup>a</sup> Jan-Dec	El Salvador Jan-Dec	Guatemala Jan-Dec	Honduras Jan-Dec	Paraguay Jan-Dec	Venezuela <sup>b</sup> Jan-Nov	TOTAL
Number of hospitalizations in children aged <5 years	1,826	388	15,275	18,568	37,127	2,281	1,279	76,744
Number of hospitalizations due to diarrhea in children aged <5 years	326	214	3,105	2,502	2,420	326	200	9,093
% of hospitalizations due to diarrhea	17.9	55.2	20.3	13.5	6.5	14.3	15.6	11.9
Number of children aged <5 years that meet the case definition	180	150	1,109	1,391	1,133	223	598	4,784
% of suspect rotavirus cases	55.2	70.1	35.7	55.6	46.8	68.4	...	52.6
Number of children with complete form and stool sample collected	173	46	388	1,035	587	196	598	3,023
% of suspect cases with complete form and stool sample collected	96.1	30.7	35.0	74.4	51.8	87.9	100	63.2
Number of cases with result positive for rotavirus	31	14	106	616	78	106	254	1,205
% of confirmed rotavirus cases	17.9	30.4	27.3	59.5	13.3	54.1	42.5	39.9

(a) The 4 countries reporting rotavirus data to the Caribbean Epidemiology Center (CAREC) are Guyana, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

(b) Does not include data for number of total hospitalizations for diarrhea from 3 hospitals.

Source: Country Reports to Rotavirus Database, FCH-IM/PAHO.

## Cervical Cancer Incidence Rates in North, Central, South America and the Caribbean



Source: Lewis, MJ. A Situational Analysis of Cervical Cancer in Latin America and the Caribbean. Washington, DC. PAHO:2004.

# technical notes and data sources

## Main Data Sources

**Demographic data:** United Nations Population Division. World Population Prospects: The 2004 Revision (linear interpolation of indicators). New York; 2005, and US Bureau of the Census. International Database, 2005. 4-26-2005. Update for countries/territories with populations under 100,000 inhabitants. Last accessed in May 2006: <http://www.census.gov/ipc/www/idbnew.html>

**Socioeconomic indicators:** The World Bank. 2006 World Development Indicators. Washington DC; 2006. For national health expenditure data, Technical Reports from WHO/PAHO Regional Units; 2006.

**Immunization coverage (except for influenza), immunization program management indicators, and financing information:** Annual country reports to Immunization Unit (IM)/PAHO via EPI tables PAHO-WHO/UNICEF Joint Reporting Form (JRF); 2006.

**Influenza data:** IM survey to immunization program managers, 2006 update.

**Morbidity:** Annual country reports to IM/PAHO via JRF, vaccine-preventable disease specific surveillance reports for measles/rubella and polio; 2005-2006.

**Year of vaccine introduction (except for influenza):** Country reports to IM/PAHO and WHO-IVB global database.

**Surveillance indicators:** Vaccine-preventable disease specific surveillance reports for measles/rubella and acute flaccid paralysis/polio to IM/PAHO; 2005-2006.

## Symbols and Abbreviations

...	not available
pop	population
ppp	purchase power parity
GDP	gross domestic product
int'l	international
BCG	bacille Calmette-Guérin (anti-tuberculosis vaccine)
NA	not applicable
Polio3	third dose of polio vaccine (oral polio vaccine or inactivated polio vaccine)
DPT1	first dose of diphtheria-pertussis-tetanus vaccine (as DPT or combination vaccine)
DPT3	third dose of diphtheria-pertussis-tetanus vaccine (as DPT

or combination vaccine)

Hib3 third dose of *Haemophilus influenzae* type b (Hib) vaccine (as monovalent Hib or combination vaccine)

Hep B3 third dose of hepatitis B vaccine (as monovalent hepatitis B or combination vaccine)

MMR 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

ICC interagency coordinating committee for immunization

NCIP national committee on immunization practices

AD syringes auto-disable syringes

ESAVI event supposedly attributable to vaccination or immunization

gov't government

pentavalent combination vaccine DPT-Hib-Hepatitis B

## Technical Notes

For detailed information on demographic data and socioeconomic indicators, please visit: <http://www.paho.org/English/dd/ais/coredata.htm>

To see the methodology used to calculate national health expenditure, please visit: <http://www.paho.org/Spanish/DPM/SHD/HP/nhexp-metodos.htm>

**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-injectable polio vaccine), the first and third doses of DPT, and the third dose of Hib vaccine and hepatitis B vaccine, respectively. Proportion of children aged 1 year vaccinated with one dose of MMR vaccine. Proportion of children vaccinated with a second dose of MMR vaccine, as targeted in the countries routinely offering a second MMR dose. Proportion of older adults vaccinated with one dose of seasonal influenza vaccine, as targeted in the countries routinely offering this vaccine. 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 99%. Subregional aggregated data express average values weighted by population aged <1 year, when a figure is available.

## Selected Information Products of the Immunization Unit



- **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.
- **Measles/Rubella and Polio Bulletins:** Weekly epidemiological surveillance bulletins.
- **Immunization Field Guides:** Six practical field guides presenting the most recent techniques, coupled with useful illustrations, to help health workers in their efforts to control, eliminate, or eradicate diseases such as poliomyelitis, measles, rubella, yellow fever, tetanus, neonatal tetanus, diphtheria, pertussis, *Haemophilus influenzae* type b, and hepatitis B.
- **Training Course on Effective Management of EPI:** Designed for use in training workshops for human resources of the Expanded Program on Immunization (EPI); updated versions reflect changes to basic aspects of the EPI, such as supervision, monitoring, safe vaccination, identification of at-risk municipalities, decentralization, social mobilization, management, and administration.
- **Safe Vaccination Training Modules:** Designed to give health workers the information they need to guarantee the use of quality vaccines, safe injections, and the monitoring of ESAVIs and to address public concerns regarding the potential risks of vaccines and adverse events following vaccination.

Please visit the Immunization page : <http://www.paho.org/immunization>

*Municipalities reaching coverage  $\geq$  95% for DPT 3, and MMR:* Proportion of municipalities reporting coverage levels equal to or greater than 95% for DPT3 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 reported cases of wild polio, confirmed measles, confirmed rubella, confirmed congenital rubella syndrome, neonatal tetanus, non-neonatal tetanus, 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:*

- Multi-year strategic plan: Written strategic plan regarding the immunization program and its activities for multiple years, usually covering 5 years.
- ICC meetings: ICCs channel efforts by international agencies, governments, and the civil society to help countries strengthen their immunization programs and control vaccine-preventable diseases. ICCs are charged with the task of ensuring coordination of all inter-agency inputs.
- NCIP meetings: NCIPs provide recommendations on immunization practices, including advice on vaccines to be included into the national immunization schedule.
- Updated inventory of all refrigeration equipment in 2005: Update can refer to a new inventory or regular status reports.
- AD syringe use: Auto-disable syringes used for all, some, or none of routine immunization (excluding reconstitution syringes).
- 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.

*Year of vaccine introduction:* Year when a vaccine was included in the national universal immunization program, not the year of vaccine introduction in special groups, such as health workers or in the private sector.

*Surveillance indicators:* For definitions refer to PAHO. Measles Elimination: Field Guide. (Scientific and Technical Publication No. 605). Washington DC: PAHO, 2005; and 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](http://www.paho.org/english/ad/fch/im/FieldGuide_Index.htm)

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