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**Americas**

# **3. Status of Missed Opportunities for Vaccination Assessments in the Americas**

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# Outline

1. **Why has PAHO implemented Missed Opportunities for Vaccination (MoV) studies?**
2. Results of MoV country studies to date
3. Lessons learned
4. The way forward



# EPI Newsletter

## Expanded Program on Immunization in the Americas

Volume VIII, Number 5

IMMUNIZE AND PROTECT YOUR CHILD

October 1986

### The Epidemiology of Non-Vaccination

#### Missed Opportunities

While in some areas low immunization is due to the non-availability of services, a large portion of non-vaccination is due to the failure of the health system to use every opportunity for vaccination. To find out why these missed opportunities occur, it is useful to look at the epidemiology of non-vaccination. Such an investigation should address the following questions:



# EPI Newsletter

## Expanded Program on Immunization in the Americas

Volume XIII Number 3

IMMUNIZE AND PROTECT YOUR CHILDREN

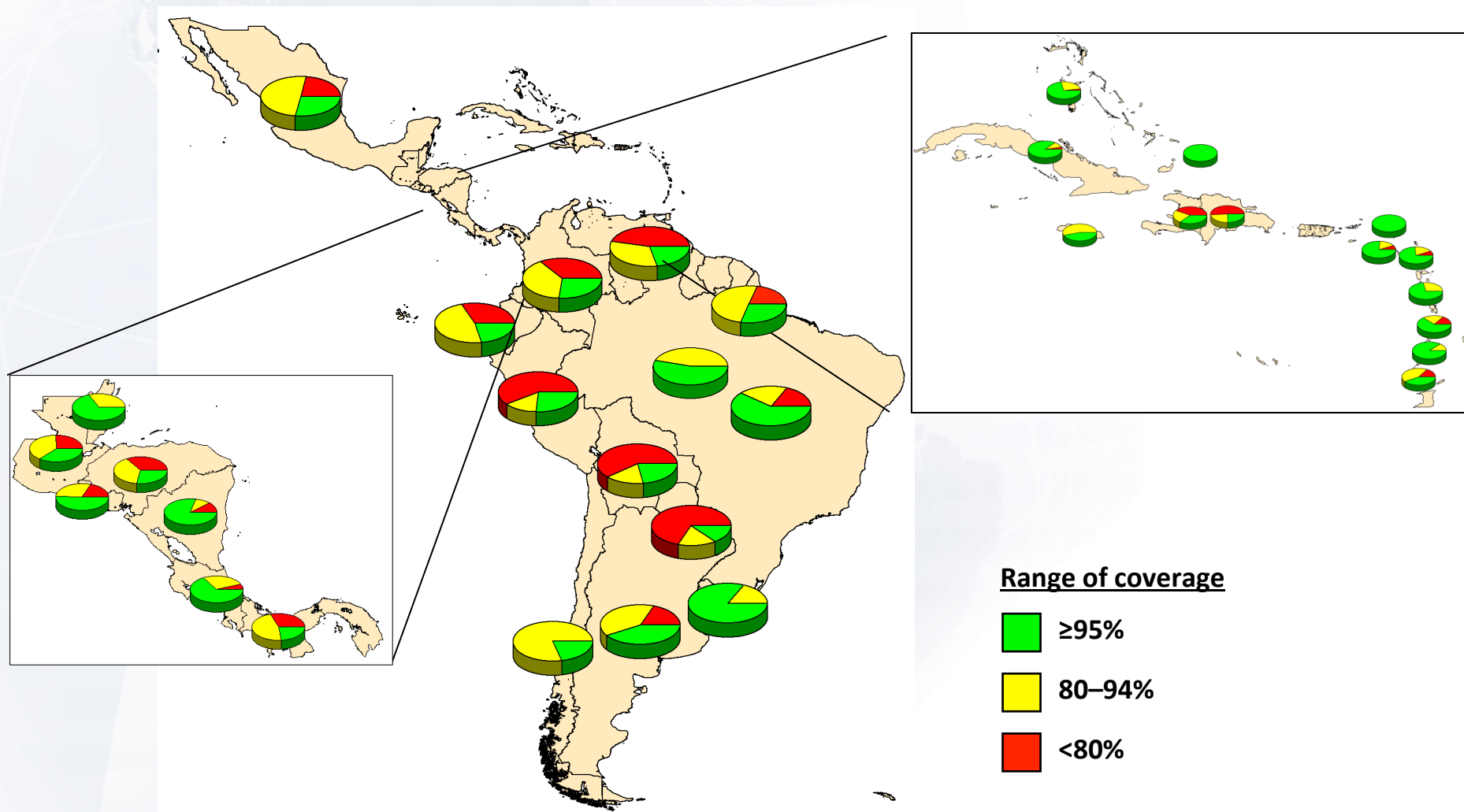
June 1991

mother, and the mother and child leave the clinic with-  
out the child being vaccinated. A system needs to be established

**Table 1. Missed Opportunities for Vaccinating Children:  
Summary of studies conducted in the Americas, 1988-1990**

COUNTRY	AGE GROUP	NUMBER OF CHILDREN	% MISSED OPPORTUNITIES		% MISSED OPPORTUNITIES BY VACCINE				FALSE CONTRA-INDIC.	CAUSES			
			TOTAL	CHILDREN <1 YEAR	OPV	DPT	MEASLES	BCG		HEALTH PERSONNEL	LOGISTICS	FAMILY	OTHERS
			%	%	%	%	%	%	%	%	%	%	%
BOLIVIA	<4 years	572	32		25	28	52	35	33	61	6		
COLOMBIA													
Bogota	<2 years	553	52	73	47	53	59	89	24	50	12	10	4
Sucre	<2 years	428	77	76	70	75	88	83	14	40	26	14	
ECUADOR	<2 years	1 007	34		33	30	58	29	26	47	15	12	
EL SALVADOR	<5 years	1 211	45		NS	NS	NS	NS	93	1	1	5	4
EL SALVADOR*	<5 years	3 243	14		NS	NS	NS	NS	81	6	1	12	4
GUATEMALA	<2 years	1 326	51		47	48	20	NS	56	24	15	4	
HONDURAS	<2 years	507	45		31	36	49	68	57		37	6	
MEXICO	<5 years	812	40	55	63	71	84	83	22	35	43		
NICARAGUA	<3 years	3 276	66		54	69	74	65	19	31	37		13
PERU	<2 years	1 350	48	57	47	48	36	NS	42	32	20	6	
PARAGUAY	<5 years	1 290	51	55					61		38		
VENEZUELA	<2 years	938	52		32	42	30	8	25	45	16		
<b>TOTAL</b>		<b>16 513</b>	<b>44</b>										

# Proportion of Municipalities by Range of Coverage with DTP3 in Children < 1 year of age, LAC, 2014



Source: Reports from the countries in the joint report form (JRF) for notification of the PAHO-WHO/UNICEF, 2014.

# Regional Literature Review, 1980-2013

- 117 articles/  
grey literature
- 72 articles  
reviewed from  
19 countries

## Main reasons for MoV

### Health care workers

- Immunization card not reviewed
- No advice given to vaccinate- lack of communication
- False contraindications

### Parents

- Immunization card not available
- Lack of time
- Fear of AEFI vaccines/  
multiple vaccination

### Services

- Lack of vaccines
- Poor communication
- Lack of follow up of  
children

# Analysis of Recent Studies

Barrera et al. BMC Public Health 2014, 14:231  
http://www.biomedcentral.com/1471-2458/14/231



## RESEARCH ARTICLE

## Open Access

# From the parents' perspective: a user-satisfaction survey of immunization services in Guatemala

Lisette Barrera<sup>1</sup>, Silas Pierson Trumbo<sup>2</sup>, Pamela Bravo-Alcántara<sup>3</sup>, Martha Velandia-González<sup>3\*</sup> and M Carolina Danovaro-Holliday<sup>3</sup>

**Table 2 Factors facilitating vaccination by coverage area: 10 departments of Guatemala, May 2011**

Factors facilitating vaccination (% of respondents agreeing with statement)	Total (n = 1194) no. (%)	Department type		Chi-square (p value) <sup>a</sup>
		Low-coverage (n = 632) no. (%)	High-coverage (n = 562) no. (%)	
<b>Structural</b>				
The cost of vaccines is NOT a disadvantage	1161 (97.2)	612 (96.8)	548 (97.5)	0.485
There is a place nearby where I can vaccinate my child	987 (82.7)	518 (82.0)	469 (83.5)	0.497
<b>Parental attitudes</b>				
Vaccination is "very important"	1005 (84.2)	569 (90.0)	436 (77.6)	<0.001
Vaccination is "important" or "very important"	1191 (99.8)	630 (99.7)	561 (99.8)	0.663
Vaccination is "very necessary" <sup>b</sup>	1138 (95.3)	606 (95.9)	532 (94.7)	0.318
Vaccines protect against diseases <sup>b</sup>	1152 (96.5)	612 (96.9)	540 (96.0)	0.483
<b>Parental practice</b>				
All my children have vaccination cards (n = 1593) <sup>c</sup>	1532 (96.2)	831 (95.8)	701 (96.7)	0.324
I am aware that health centers offer immunization services	1133 (94.9)	599 (94.8)	534 (95.0)	0.851
I decide to vaccinate my child when a healthcare professional tells me to do so	692 (58.0)	400 (63.3)	292 (51.9)	<0.001
I decide to vaccinate my child when he or she is sick	145 (12.1)	60 (9.5)	85 (15.1)	0.003
<b>Quality of service</b>				
I typically wait <1 hour to vaccinate my child <sup>d</sup>	687 (58.2)	331 (52.9)	356 (64.1)	<0.001
I have ALWAYS been able to vaccinate my child at a health center	1015 (85.0)	530 (83.9)	485 (86.3)	0.239
Service is "good" or "very good" <sup>d</sup>	831 (70.4)	425 (67.9)	406 (73.2)	0.048
Service is "average" <sup>d</sup>	302 (25.6)	172 (27.5)	130 (23.4)	0.111

<sup>a</sup>Chi-square tests were performed to compare characteristics in high- and low-coverage areas. Statistically significant values (p < 0.05) are bolded.

<sup>b</sup>Totals include respondents who agreed or strongly agreed with statement; respondents who disagreed or somewhat agreed are excluded.

<sup>c</sup>Totals include all children studied (n = 1593). Percentages are based on number of children in low- and high-coverage areas (868 and 725, respectively).

<sup>d</sup>Thirteen participants did not respond and were excluded. Percentages are based on the number of participants in low- and high-coverage areas (626 and 555, respectively).

# Analysis of Recent Studies

García L. et al. *BMC Public Health* 2014, **14**:669  
http://www.biomedcentral.com/1471-2458/14/669



## RESEARCH ARTICLE

## Open Access

### Understanding the main barriers to immunization in Colombia to better tailor communication strategies

Diego Alejandro García L<sup>1</sup>, Martha Velandia-González<sup>2\*</sup>, Silas Pierson Trumbo<sup>2</sup>, M Cristina Pedreira<sup>2</sup>, Pamela Bravo-Alcántara<sup>2</sup> and M Carolina Danovaro-Holliday<sup>2</sup>

**Table 3 Immunization barriers, communication preferences, and service quality, according to six groups of caregivers identifying distinct types of immunization barriers: Colombia, May 2010\***

Indicators (agreement with given statement)	Total	Group 1 (n = 1,172)	Group 2 (n = 946)	Group 3 (n = 866)	Group 4 (n = 642)	Group 5 (n = 628)	Group 6 (n = 548)
	%	%	%	%	%	%	%
<b>Group 1: Caregivers identifying barriers associated with parents or caregivers</b>							
One reason that parents do not vaccinate their children are long lines at health centers	42.0	<b>62.1</b>	31.8	56.2	23.1	23.7	37.6
One reason that parents do not vaccinate their children is lack of time	29.7	<b>68.6</b>	20.1	6.7	30.8	11.6	19.0
My child has an incomplete schedule or has never been vaccinated because I lack the time	8.4	<b>12.3</b>	6.5	6.4	8.5	11.4	3.8
My child has an incomplete schedule or has never been vaccinated due to my negligence (or the negligence of the parents)	12.6	<b>17.8</b>	9.5	9.4	14.3	11.5	11.8
I have forgotten at least one vaccination appointment	25.5	<b>31.1</b>	25.5	21.0	24.1	22.4	26.0
<b>Group 2: Caregivers identifying barriers associated with vaccinators</b>							
One reason that parents do not vaccinate their children is the vaccinator's fear of administering multiple vaccines	2.6	0.0	<b>13.4</b>	0.0	0.0	0.0	0.0
One reason that parents do not vaccinate their children is because the vaccinator said the child cannot be immunized if the parent has not brought the child's vaccination card	5.7	3.3	<b>11.2</b>	1.4	10.0	5.1	3.4
One reason that parents do not vaccinate their children is because the vaccinator says the child has the flu and thus cannot be vaccinated	16.5	4.2	<b>56.9</b>	5.7	6.0	7.3	13.4
One reason that parents do not vaccinate their children is because the vaccinator says the child has a fever and thus cannot be vaccinated	13.4	2.1	<b>55.2</b>	2.8	2.8	3.6	6.0
During my last visit to a health center, the physician reviewed my child's vaccination card	79.9	82.4	<b>80.4</b>	81.1	71.1	79.6	82.7

# Methodology

## Type of study

Cross-sectional evaluation of MOVs in primary and secondary health care facilities that offer vaccination

## Target population

- Children aged <5 years and their caregivers
- Health workers at the selected facilities with an emphasis on general medicine and certain specialties

## Sample design

- This is an operational tool
- The sample is only representative of children aged <5 years visiting health services in the geographic area surveyed on the day of the study



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# MOV Studies Conducted in Selected Countries, 2012-14

	Level	Health facilities	Interviews conducted	Children w/ card	
				#	%
Dominican Republic	14 subnational	92	1,500	514	34
Panama	10 subnational	63	1,139	432	38
City of Bogota	16 local	45	725	579	80
Peru	20 subnational	222	3,488	1,751	50

Preliminar data

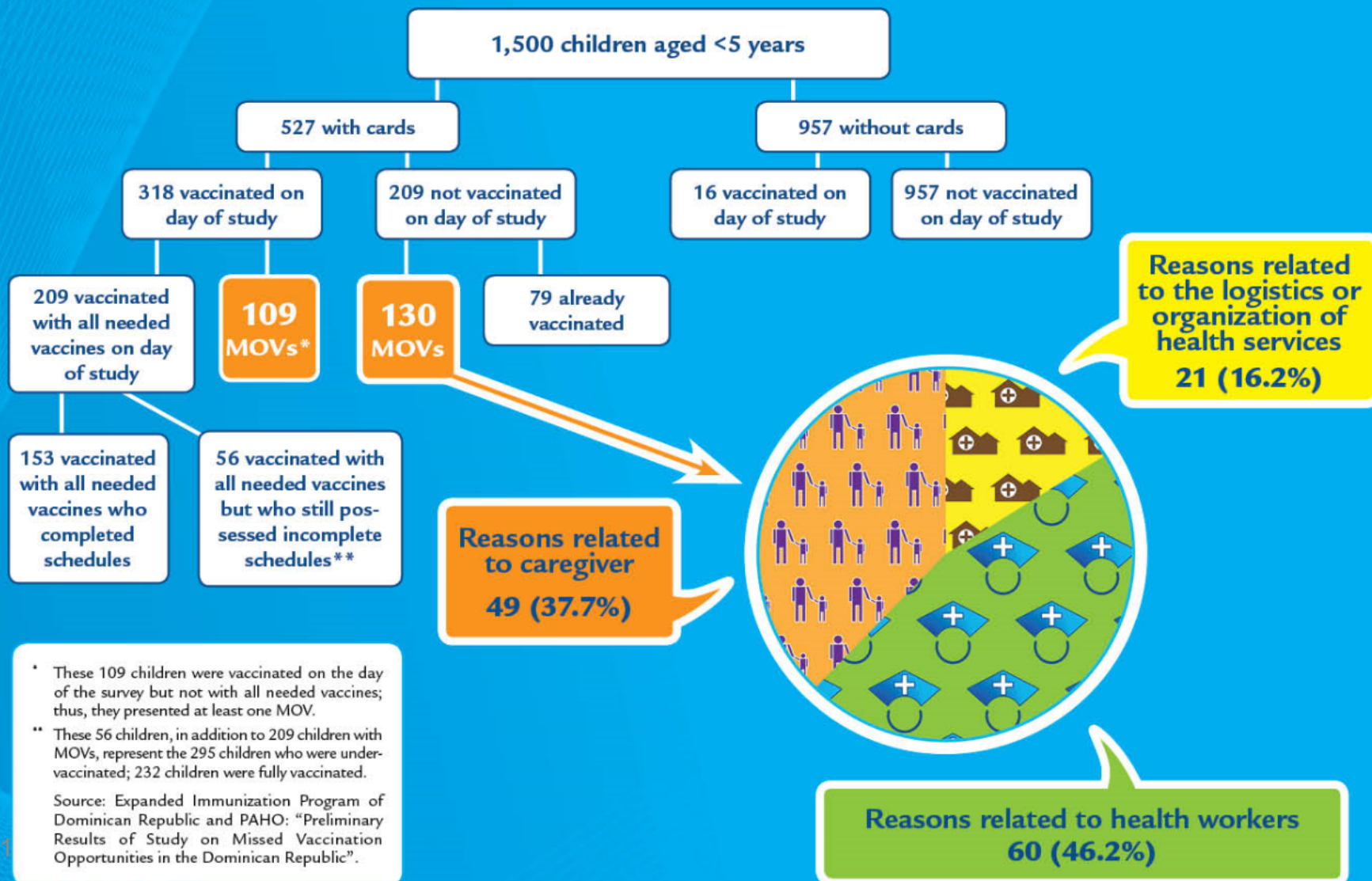


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# FLOWCHART OF MISSED OPPORTUNITIES OF VACCINATION AMONG 1500 CHILDREN AGED <5 YEARS: DOMINICAN REPUBLIC, OCTOBER 2012



# Proportion of Children Interviewed, Eligible and with Missed Opportunities. Selected Countries, 2012- 14

	DOR		PER		PAN		BOG	
	#	%	#	%	#	%	#	%
Children interviewed	1,500		3,488		1,139		725	
Children with card	<u>514</u>	34%	<u>1,751</u>	50%	<u>432</u>	38%	<u>579</u>	80%
Children up to the date	221	43%	1,377	78%	357	82%	551	95%
Missed opportunities	293	57%	374	21%	75	17%	28	5%

Preliminar data



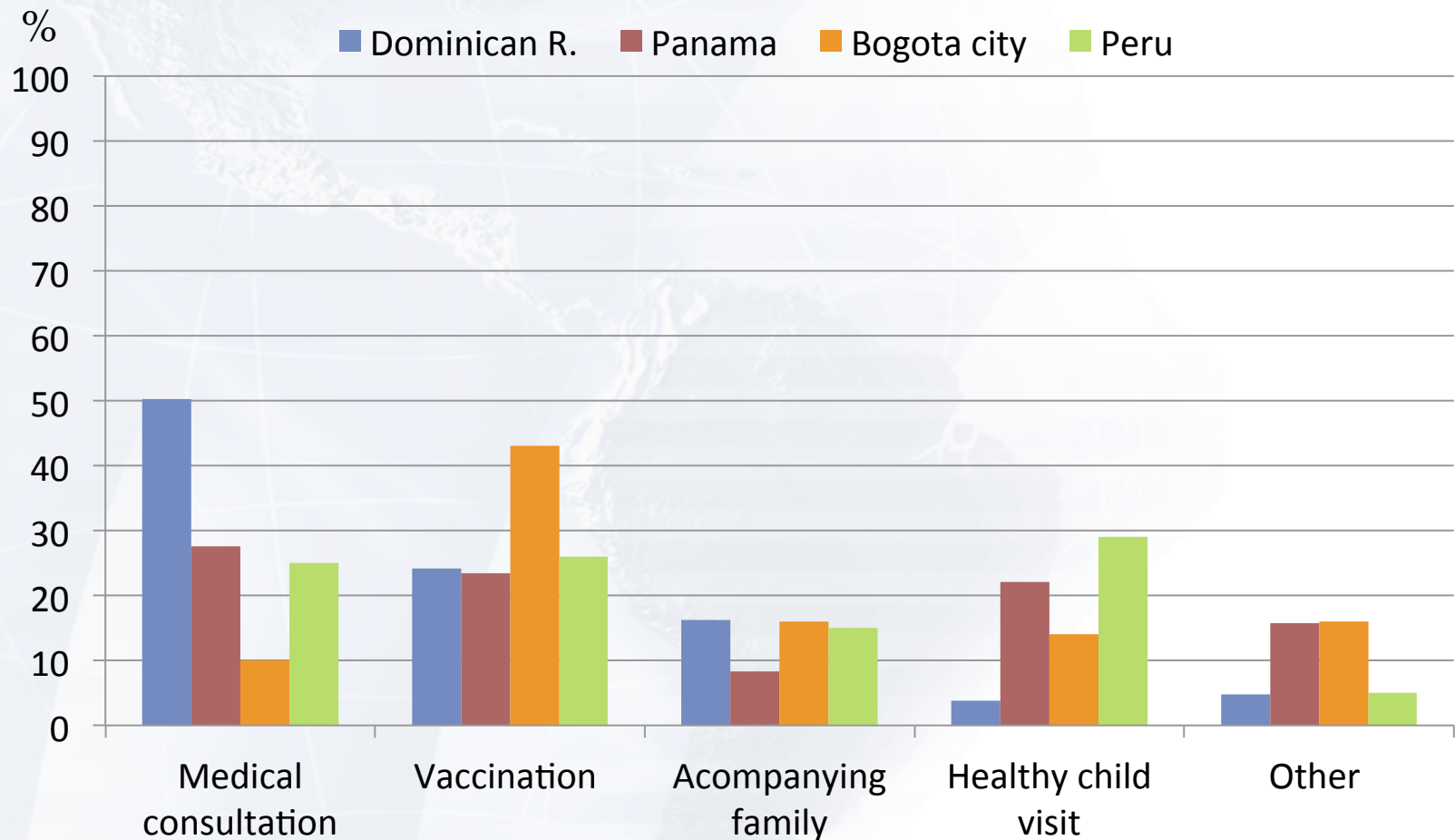
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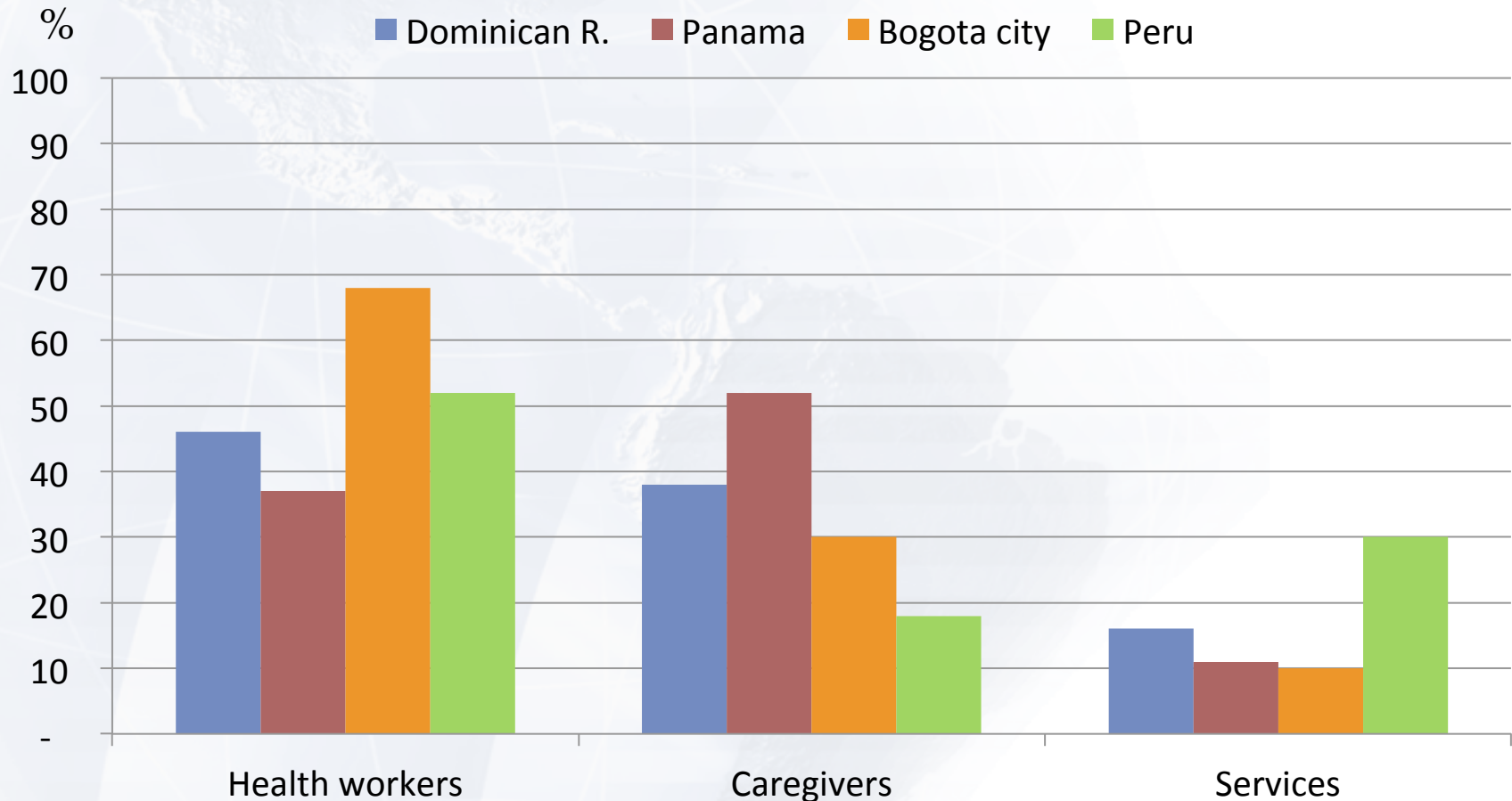
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\* Child aged <5 years with vaccination card, who has not begun or completed the vaccination schedule for his or her age; who has no real contraindications for receiving one or more vaccine doses; and who, given the date of administration of a previous dose or doses, is eligible to be vaccinated by the health personnel during the visit to the health facility on the day of the study

# Primary Reason for Bringing the Child to the Health Center, MOV Studies Selected Countries, 2012- 14



# Reasons for No Vaccination, MOV Studies in Selected Countries, 2012- 14



# Reasons for No Vaccination: Health Workers MOV Studies in Selected Countries, 2012- 14

	Dominican Republic	Peru	Panama	Bogota
Asked for the vaccination card	34%	11%	85%	62%
The professional said that the child is already vaccinated	76.5	33%	42%	94%
False contraindication	88%	56%	86%	84%

# Reasons for No Vaccination: Caregiver

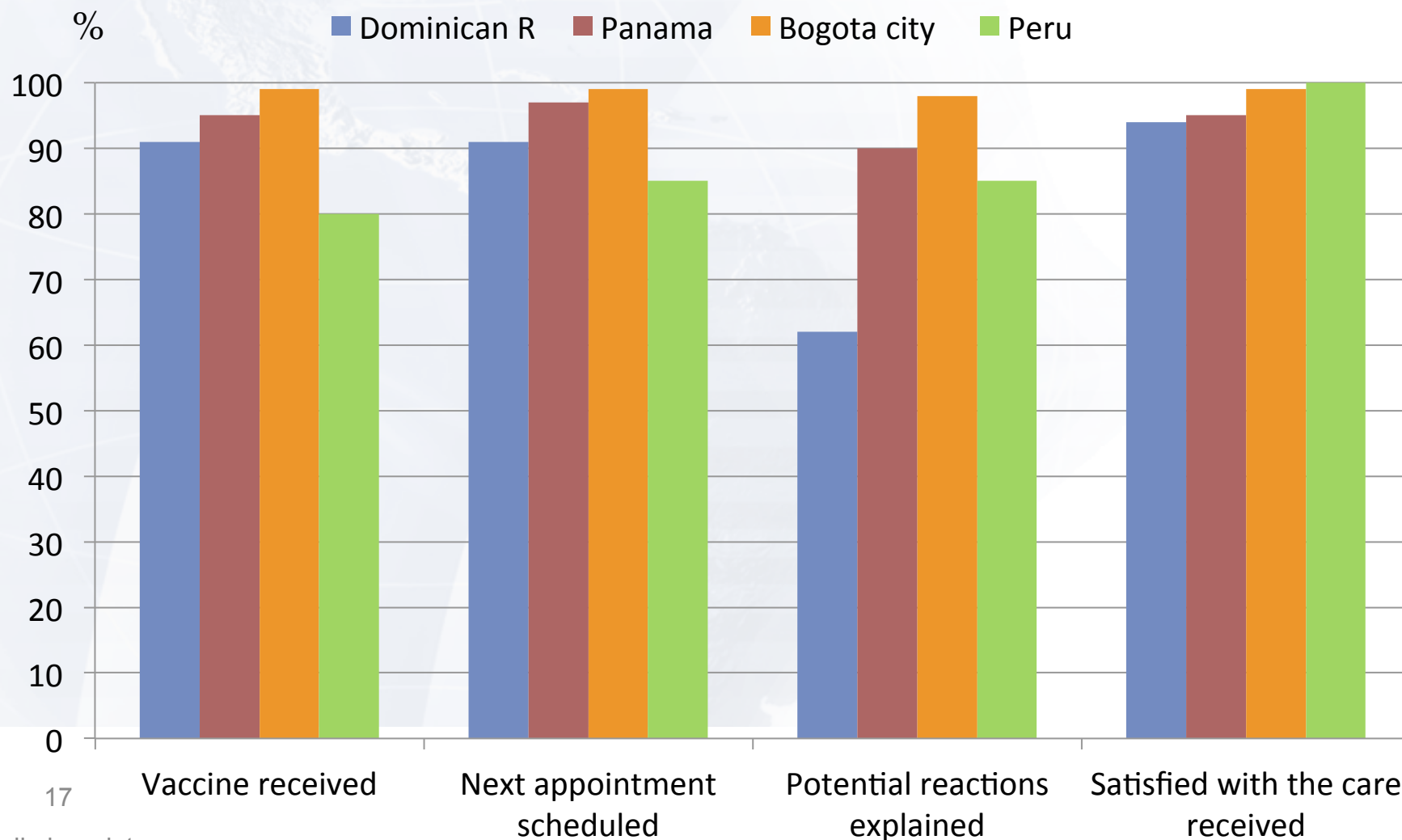
	Dominican Republic	Peru	Panama	Bogota
I didn't bring the child for vaccination	82%	49%	85%	51%
I forgot/I didn't have time	6%	11%	5%	6%

# Reasons for No Vaccination: Health Services

	Dominican Republic	Peru	Panama	Bogota
There are no vaccines (stock outs)	80%	71%	85%	51%
Today is not a vaccination day	6%	16%	5%	6%

Preliminar data

# Quality of Service, perceived by caregiver MOV Studies in Selected Countries, 2012- 14



# Outline

1. Why has PAHO implemented MoV studies?
2. Results of MoV country studies to date
- 3. Lessons learned**
4. The way forward



# Lessons Learned: Political Support, Adaptation, Implementation and Analysis

1. The EPI should lead and inform all the stakeholders involved in a MOV study
2. The survey must be adapted to take into account differences in culture, local language and EPI schedule
3. Need to establish algorithms/syntaxes for determining MOV
4. Need to pilot the tools prior to the implementation
5. Train interviewers and explain to them the importance of the data collected
6. Use of new technology
7. Polling company? University? Health workers?
8. Supervision is key
9. Professionals in different disciplines should be part of the analysis



# Lessons Learned: Dissemination of MoV Results

1. Participation of subnational level EPI officers
  - Dominican Republic
  - Panama
  - Peru
2. Participation of other partners (i.e. Peru: civil society)
3. Countries have identified the results as real problems at the local level
4. More financial assistance is required for interventions and measurement post intervention.



# Outline

1. Why has PAHO implemented MoV studies?
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# The Way Forward for MoV

- 1) Synthetic analysis of the completed assessments
- 2) Dissemination of Missed Opportunities for Vaccination “Best Buys” Manual:
  - a) Systematic review of strategies to reduce MoV
  - b) Monitoring system for MoV
  - c) Guidelines to reduce MoV for the local levels
  - d) Validate the manual with EPI focal points, EPI managers and others field experts
- 3) Future assessments in other countries:
  - a) Caribbean Region (British Virgin Islands)
  - b) Costa Rica
  - c) Ecuador



