



Pan American Health Organization



Regional Office of the
World Health Organization

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**Generating evidence for Guatemalan
decision-makers about
the introduction of new vaccines
in the public health sector**



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Guatemala's Core Health Data



National Health expenditure:
2007: 0.9 % of GDP

Infant mortality rate:
2002: 39 / 1000 Live Births

Maternal mortality rate:
2006: 128 / per 100,000 Live Births (MoH)

Year of introduction of MMR vaccine

40´s	80´s	90´s	00´s
Commercialization	<ul style="list-style-type: none">• Uruguay (82)• Cuba (86)• Costa Rica (87)	<ul style="list-style-type: none">• Chile (90)• Colombia (95)• Belize (96)• Argentina (97)• Honduras (97)• Nicaragua (98)• Mexico (98)• Venezuela (98)• El Salvador (99)• Ecuador (99)	<ul style="list-style-type: none">• Brazil (00)• Bolivia (00)• Guatemala (01)• Peru (03)• Dominican Republic (04)

Year of introduction of Hib

90´s
Commercialization

- 90´s
- Mexico (98)
 - Chile (96)
 - Uruguay (99)
 - Nicaragua (99)
 - Peru (99)

- 00´s
- Costa Rica (00)
 - Honduras (00)
 - Panamá (00)
 - Bolivia (00)
 - Colombia (01)
 - Dominican Republic (01)
 - Brazil (02)
 - Belize (02)
 - El Salvador (02)
 - Paraguay (02)
 - Ecuador (03)
 - Venezuela (04)
 - **Guatemala (05)**

Year of introduction of seasonal influenza vaccine

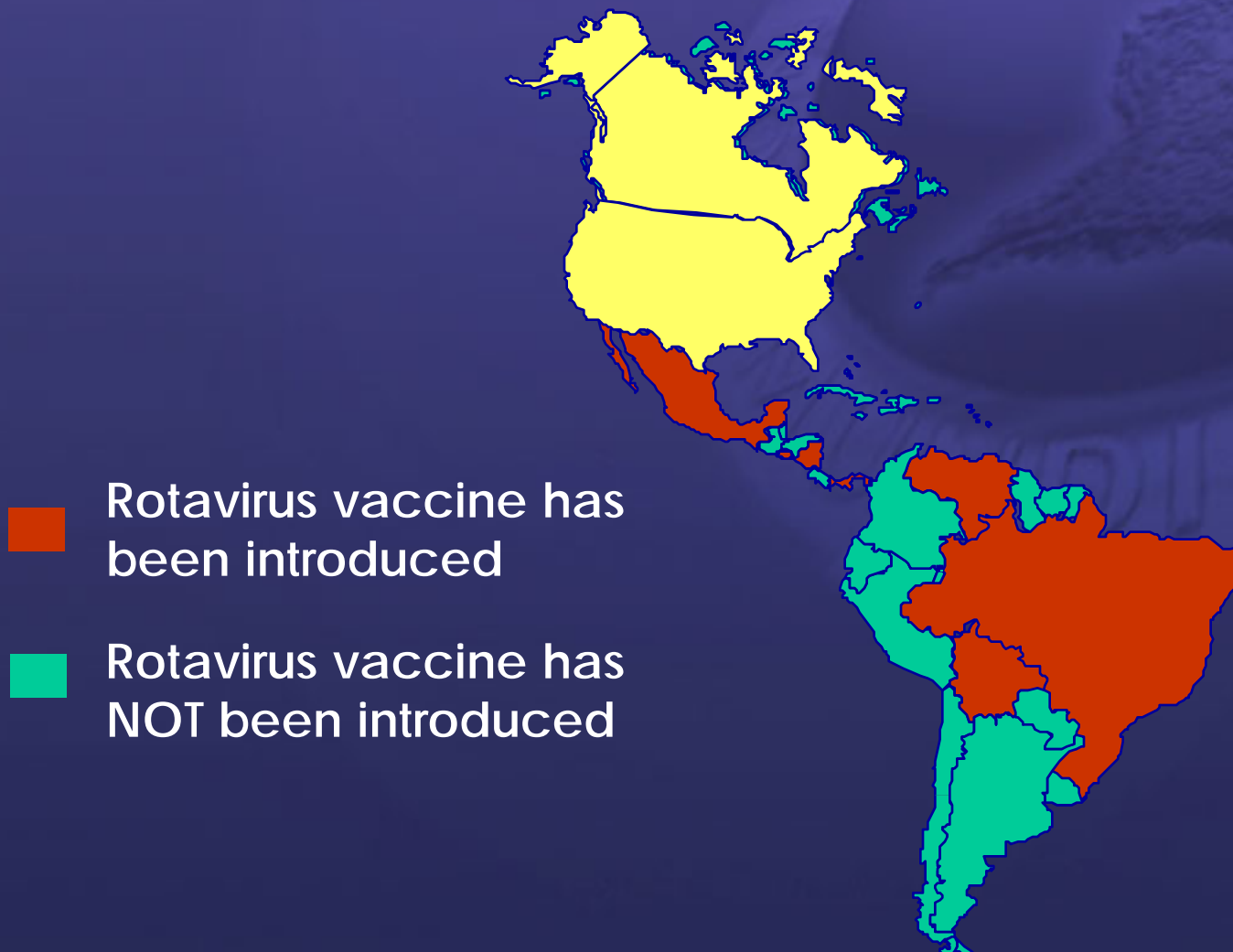
40's
Commercialization

70's
• Chile

- 90's
- Argentina (93)
 - Mexico (98)
 - Uruguay (98)
 - Chile (96)
 - Uruguay (99)
 - Nicaragua (99)
 - Peru (99)
 - Brazil (99)

- 00's
- Honduras (03)
 - Mexico (04)
 - Costa Rica (04)
 - El Salvador (04)
 - Panama (05)
 - Colombia (05)
 - Paraguay (05)
 - Nicaragua (06)
 - Ecuador (06)
 - Venezuela (06)
 - Guatemala (07)

Introduction of Rotavirus vaccine in Latin America



■ Rotavirus vaccine has been introduced

■ Rotavirus vaccine has NOT been introduced

Objectives

General

To provide technical and programmatic information to support the decision making process in the introduction of new vaccines of recognized effectiveness



Objectives

Specific

- ❑ To reduce the time that passes between the certification of a new vaccine by WHO and UNICEF and its introduction in a developing country
- ❑ To reduce the gap between developed and developing countries in relation to the number of vaccines available
- ❑ To develop a baseline in order to measure the impact and effectiveness of the introduction of a new vaccine

Activities PAHO has been involved in:

- ❑ Estimation of disease burden
- ❑ Economic analysis
- ❑ Evaluation of cold chain storage capacity

Rubella and CRS in Guatemala

- ❑ Active surveillance since 1999
- ❑ Retrospective study (2005)
 - 210 CRS suspicious cases
 - 45 CRS compatible cases
 - 5 CRS confirmed cases
- ❑ Treatment and rehabilitation cost of expected cases : US\$ 151 million
- ❑ Seroprevalence study (2005)
 - Seroprevalence ~ prevaccine era
- ❑ Cold chain inventory

Rubella immunization campaign (2007):
99% of immunization coverage among men and women
9 – 39 years

The Influenza Vaccine in Guatemala

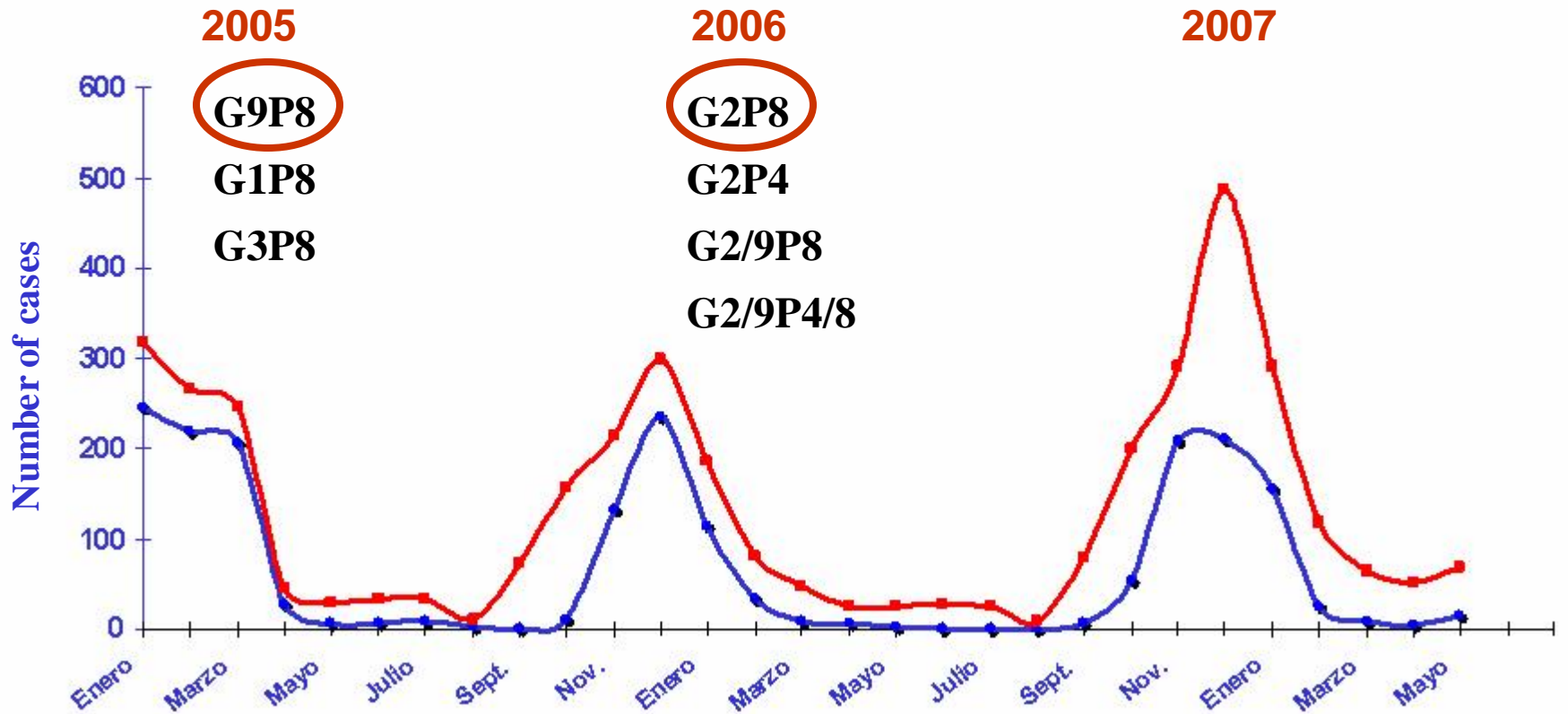
- ❑ 2006: Influenza surveillance
- ❑ 2007: FLUNET member (Global Influenza Surveillance Network)
- ❑ 2007: Influenza vaccine introduction in December

Rotavirus

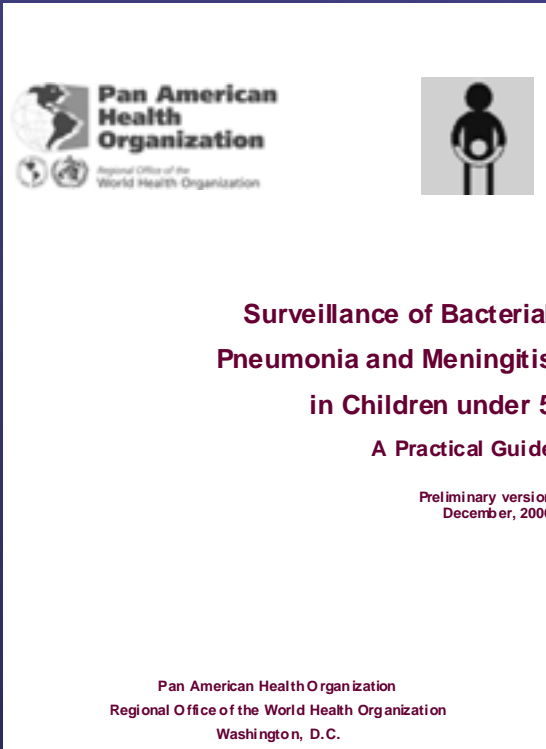
Indicators of Rotavirus Hospital-based Surveillance. Guatemala 2005 - 2007

Indicators	2005	2006	2007*
Number of hospitalizations in children <5 years	18,568	15,380	12,993
Hospitalizations due to diarrhea in children < 5 years	2,502 (13.5%)	2,905 (13.6%)	2,135 (16.4%)
Children <5 years that meet the case definition	1,391 (55.6%)	1,483 (51.0%)	903 (42.3%)
Children < 5 years with report form and stool sample collected	1,035 (74.4%)	1,197 (80.7%)	823 (91.1%)
Confirmed rotavirus cases	616 (59.5%)	623 (52.0%)	348 (42.3%)

Rotavirus incidence. Guatemala, 2005 - 2007



Regional Vaccine System (SIREVA)



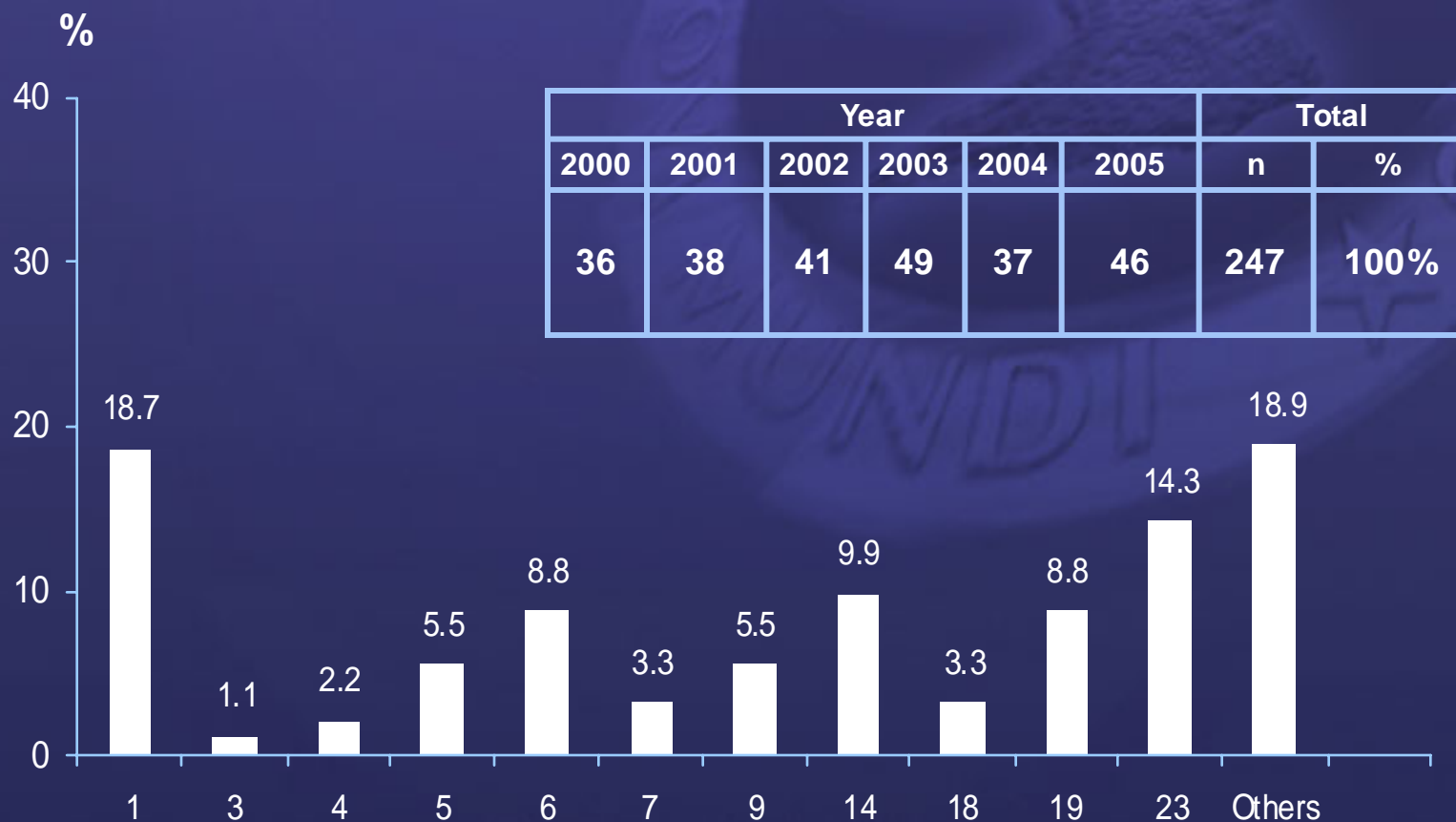
Argentina, Brasil, Colombia, Chile, México, Uruguay
Bolivia, Ecuador, Perú, Paraguay, Venezuela, **Guatemala**, El Salvador, Nicaragua, Honduras, Costa Rica, Trinidad y Tobago
Panamá, República Dominicana y Cuba



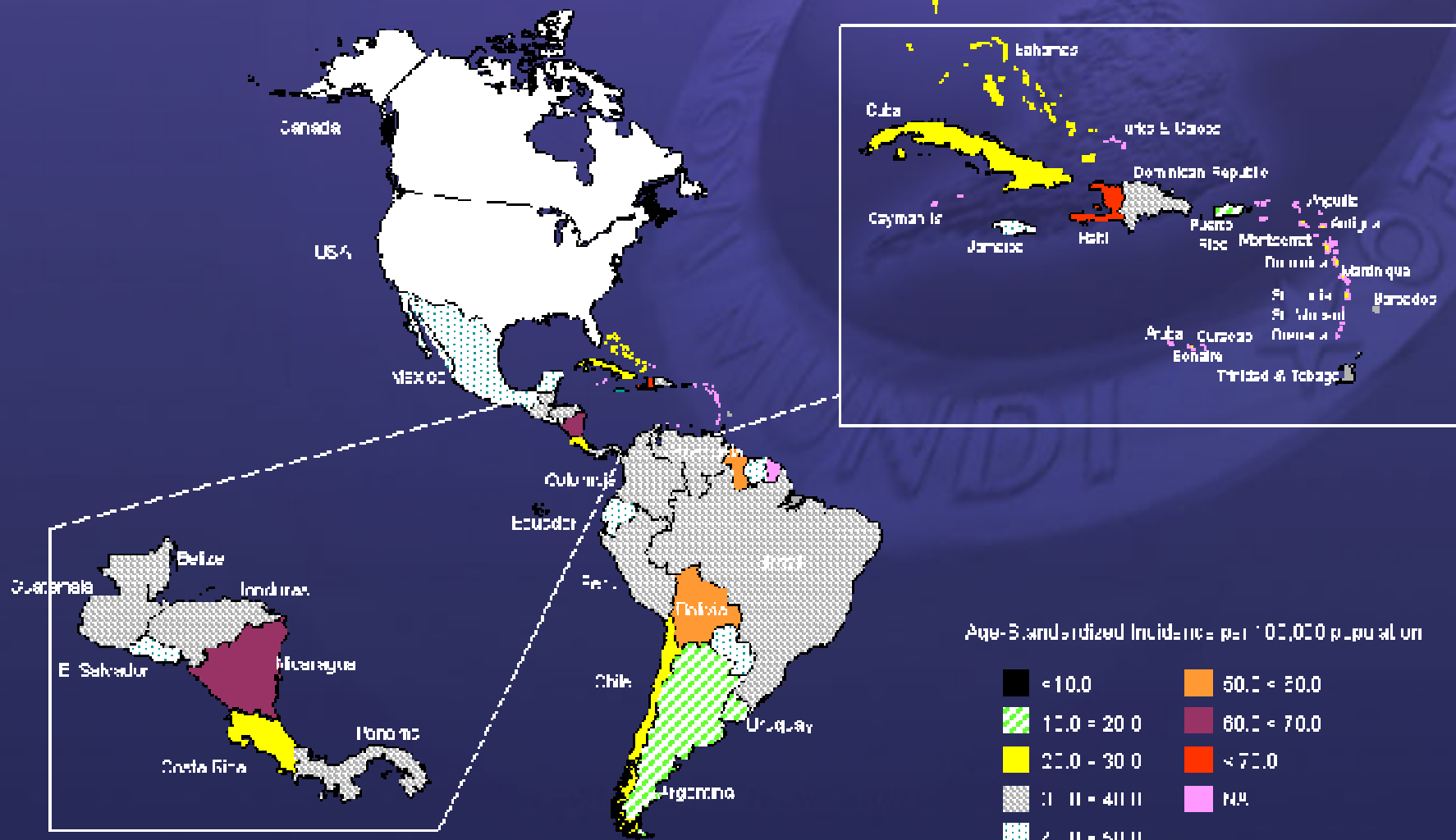
20 Countries, 2 Sub regional Labs & 1 Regional Reference Lab



Streptococcus Serotypes Isolated in Children under Six. Guatemala, 2000 - 2005



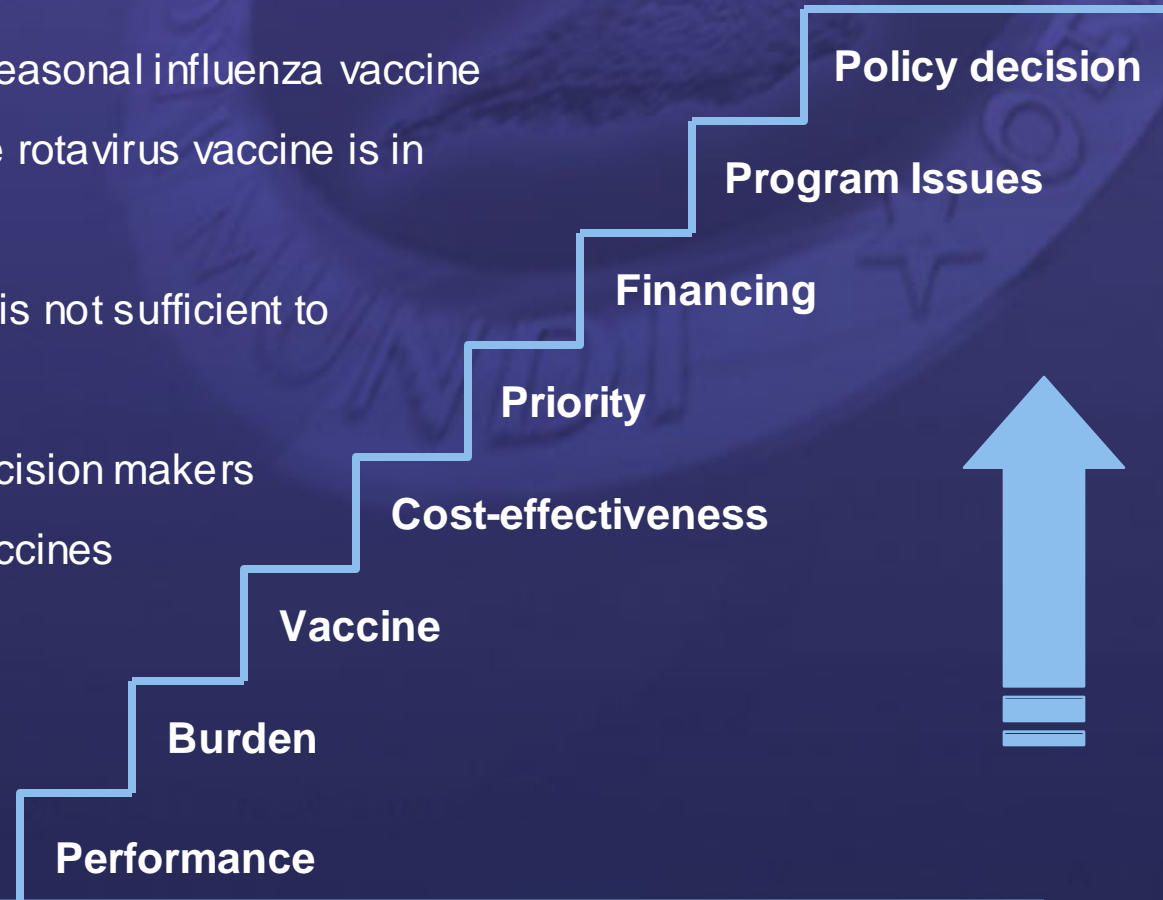
Cervical Cancer Incidence Rates in North, Central, South America and the Caribbean



Source: Lewis, M.L. A. Epidemiological Analysis of Cervical Cancer in Latin America and the Caribbean. Washington, DC: FAO 2004.

Conclusion

- There have been advances in the documentation of rotavirus
- Guatemala has purchased the seasonal influenza vaccine
- A cost-effectiveness study of the rotavirus vaccine is in process
- The cold chain storage capacity is not sufficient to introduce new vaccines
- Information now available for decision makers about the introduction of new vaccines



WHO Vaccine Introduction Guidelines

Recommendations

- Increase the cold chain storage capacity before introducing new vaccines
- Carry out economic studies for other vaccines, especially seasonal influenza and pneumococcal invasive diseases
- Design a lobbying strategy for legislators, health authorities, political leaders and communicators.

Acknowledgements

- ❑ Guatemalan Ministry of Health
 - National Immunization Program (PNI)
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 - National Epidemiology Center (CNE)
 - Hospitals
- ❑ Guatemalan Social Security System (IGSS)
- ❑ Canadian International Development Agency (CIDA)
- ❑ Center for Disease Control and Prevention (CDC)
- ❑ Swedish International Development Cooperation Agency (ASDI/SIDA)
- ❑ Social Security and Public Sentinel Hospitals in Guatemala
- ❑ Kathryn Janzen, PAHO Guatemala

