Perspectives on the evolution of immunization policy in developing countries

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SMALLPOX
THE DEATH OF A DISEASE

The Inside Story of Eradicating a Worldwide Killer
Origins of Modern Immunization

Smallpox Eradication Program
Showed we could reach everyone on earth
The greatest achievement in public health

The birth of the EPI in 1977
5% coverage in early 1970’s
The great achievements of Jenner, Pasteur, etc benefited those lucky enough to live in industrial countries
UIP targeted 80% coverage by 1990 with 6 EPI antigens

Polio Eradication Initiative
Country successes in the Latin America
Poliomyelitis, Cuba, 1946-1980

Source: PAHO & MOH
Poliomyelitis, Costa Rica, 1950-1980

Source: PAHO & MOH
9 key areas of polio expertise

Policy & strategy development
Planning
Management & oversight
Implementation & service delivery
Monitoring & evaluation
Communications & community engagement
Disease surveillance and data analysis
Capacity building
Partnerships & coordination
Measles
Congenital Rubella Syndrome
High morbidity rationale for immunization interventions

Rubella Project for Multihandicapped; Bellevue Hospital – 1968
Courtesy Dr. L. Cooper
Measles Vaccination Coverage among Children <1 Year of Age* and Reported Measles and Rubella Cases, the Americas 1980-2013*

* MMR in children 1 year of age by vaccine introduction

Source: Country reports to FGL-IM/PAHO
* Data as of February 25, 2013

<table>
<thead>
<tr>
<th>Campaign Type</th>
<th>Cases</th>
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<tbody>
<tr>
<td>Catch up (&lt;15 years)</td>
<td>140 million</td>
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<tr>
<td>Follow-up (1-4 years)</td>
<td>80 million</td>
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<tr>
<td>Speed-up (adol/adult)</td>
<td>260 million</td>
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Number of childhood vaccines routinely used in industrialized countries and in Latin America and the Caribbean, 1975-2010

- **Industrialized countries**
- **Latin America and the Caribbean**

**Current GAP Vaccines:**
- HPV
- Varicella
- Hepatitis A
- Meningococcal

**Seasonal flu** - 2006
**Rotavirus** - 2006
**Pneumococcal** - 2006

**Past Vaccines:**
- Measles, DPT
- Poliomyelitis, BCG
- Haemophilus Influenzae b
- Rubella
- Mumps
- Hepatitis B**
Applying Success Factors to New Challenges
Example of HPV vaccine and cervical cancer

- Taking advantage of new technologies while enhancing approaches to screening to reduce mortality of this disease of poverty
- Reducing the developing country uptake time lag >2 decades
- Expanding fiscal space

77,291 new cases each year
30,570 deaths each year

Source: IARC 2002 estimates
Considerations for new vaccine policymaking at country-level

ProVac’s objectives

• Strengthen infrastructure for decision-making (National Immunization Technical Advisory Groups)
• Develop tools for economic analysis and provide training to national multidisciplinary teams
• Collect data, conduct analysis, and gather framework of evidence
• Advocate for evidence-based decisions
• Effectively plan for vaccine introduction when evidence supports it
Countries have requested technical support from PAHO to help integrate economic studies into the national decision-making process for immunization. - *2006 Directing Council resolution (CD47.R10)*
Considerations for new vaccine policymaking at country-level

Disease burden
Vaccine characteristics
- Immunogenicity
- Efficacy/effectiveness
- Duration of protection
- Type-specific protection
- Dosage
Safety and adverse events (harms)
Cost-effectiveness

Technical

EVIDENCE PACKAGE

Operational & Programmatic

Social


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Suggested citation
Considerations for new vaccine policymaking at country-level

Logistical Issues
Estimated research and development costs of rotavirus vaccines

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Considerations for new vaccine policymaking at country-level

Perception of Risk
Scenario 1
CEA/impact not considered (political decision)

Scenario 2
Agency-led CEA/impact (Hib vaccine in India)

- TRIVAC model used
- Outside agency presented to NITAG
- Outside agency led publication of results
- No MoH training
- GAVI finance available but significant delays in adoption

Scenario 3
MoH-led CEA/impact (ProVac) (PCV in Argentina)

- TRIVAC model used
- MoH presented to NITAG
- MoH-led publication of results
- MoH trained and led subsequent CEA of RV/HPV
- PCV quickly financed/adopted

Slide courtesy of Andrew Clark, ProVac Modeller
LEGISLATIVE IMPACTS:

Since 2014, the SIF Program has helped guide three countries to enact legislation guaranteeing public immunization financing.

**Nigeria | December 2014**
Law established Public Health Fund. Nigeria is working to create external public-private partnership Immunization Financing Trust Fund to complement it.

**Uganda | December 2015**
Law creates an earmarked immunization fund, and the country is now working on regulations for the law’s full implementation.

**Nepal | January 2016**
Law includes provisions for an immunization trust fund; both this and a public-private immunization fund are under development.
Rotavirus vaccine introduction in the Americas: progress and lessons learned


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In Latin America and the Caribbean, rotavirus causes approximately 15,000 deaths, 75,000 hospitalizations, 2 million clinic visits and 10 million cases of rotavirus diarrhea annually. Two safe vaccines are available that are effective in preventing severe illness. To date, seven countries in Latin America (Brazil, Ecuador, El Salvador, Panama, Mexico, Nicaragua and Venezuela) have introduced the vaccine. For successful rotavirus vaccine introduction, the lessons learned re-emphasize the critical need for countries to have precise plans that will ensure technical, programmatic and financial sustainability of vaccine introduction. Of these lessons learned, programmatic feasibility and financial sustainability were particularly challenging for countries that were the first to introduce rotavirus vaccine.

**KEYWORDS:** diarrhea • new vaccines • rotavirus • surveillance • vaccine

From 1986 to 2000, rotavirus globally caused acute pancreatitis, apheresis therapeutic challenges to main...
Conclusion: Vaccine policy has evolved from a globally driven top-down process, to a regional process, to what is now a much more country driven and country owned process with substantial gains in country ownership and sustainability.
Disease anywhere is disease everywhere
“Urge PAHO and the Revolving Fund to acquire Rotavirus vaccines by working with other organizations like GAVI and the manufacturers and to assist their introduction when available at prices accessible to countries in the region”
“The Americas could be the first region of the world to prevent Rotavirus diarrhea through the use of vaccines!”
Urged Member States to:

Expand legal and fiscal space and identify new revenue sources to sustainably finance the introduction of new vaccines against rotavirus, pneumococcus, and human papillomavirus;

Support the mortality reduction targets, consistent with GIVS and the MDGs, for HPV, RV, influenza, and pneumo associated disease;

Utilize the PAHO Revolving Fund for Vaccine procurement to purchase new and underutilized vaccines