Global Immunization Overview

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Global U5 Mortality: Role of Vaccine Preventable Diseases (2008 data)

8.8 million under five deaths

20% (1.7 million) from vaccine preventable diseases


* WHO/IVB provisional estimates based on Global Burden of Diseases estimates
** WHO/IVB estimates for 2004 based on Global Burden of Diseases estimates
The rate of return to investment in the GAVI-supported immunization activities is conservatively estimated at 12% in 2005, rising to 18% in 2020.

Source: Bloom & Channing 2004

These figures are comparable to average rates of return to investments in schooling (based on a survey of 98 country studies during 1960-97):

- primary: 19%
- secondary: 13%
- higher: 11%

Where do we stand with immunization programmes globally
Global Immunization 1980-2009, DTP3 coverage
global coverage at 82% in 2009

Countries with most unvaccinated infants DTP3, 2007-2009 (in millions) and DTP3 coverage in 2009


- India: 66%
- Nigeria: 42%
- China: 97%
- Indonesia: 82%
- Pakistan: 85%
- Ethiopia: 79%
- Democratic Republic of the Congo: 77%
- Uganda: 64%
- Chad: 23%
- Kenya: 75%
Challenges

- Uninformed population or fearful population

- Programme management
  - Human resources: number, training & motivation
  - Immunization delivery services (hard to reach populations)

- Issues with data quality
  - Capturing and reporting data on VPDs through administrative systems (numerator and denominator problems)
  - Wide variation between administrative and survey data
  - Low use of data for planning and corrective action

- Vaccine supply → stock outs
  - Supply chain management (forecasting, procurement and distribution)
  - Storage and transportation in the cold chain
Review of published literature: Reasons for being un-/under-vaccinated

Under-vaccinated

- 28% Immunization Systems
- 21% Parental Attitudes And Knowledge
- 7% Parental Attitudes And Knowledge
- 44% Other

Unvaccinated

- 27% Family Characteristics
- 55% Parental Attitudes And Knowledge
- 12% Parental Attitudes And Knowledge
- 6% Other

% based on 887 reasons abstracted from 209 relevant articles
% based on 33 reasons abstracted from 12 articles on unvaccinated children
Progress with measles control
Scaling-up 2nd Dose Strategies

Number of doses of measles vaccine administered, by delivery strategy, 2000-2009

Impact of Accelerated Activities

Number of reported measles cases by WHO Region, 2000-2009*

- 67% decrease

Number of estimated measles deaths, by WHO Region, 2000-2008

- 78% decrease

High-low bars indicate uncertainty

Source: Cases from annual Joint Reporting Form
Deaths from Wkly Epid Rec Dec 4, 2009
*2009 case data incomplete
Expanding Measles Outbreaks in Africa, 2009-2010

As of 16 June 2010:
- Outbreaks in 30 African countries
- Over 79,000 cases and 1,127 deaths reported
- Major resurgence in southern Africa after >10 years of very low incidence following accelerated control efforts

Reasons:
- Weak routine delivery
- Gaps in campaign coverage
- SIAs delayed due to inflated coverage estimates
- Limited target age range due to shortage of funds
- Cross border spread (migrants/nomads) and religious objectors
Report A63/18: Global Eradication of Measles

- 19 Member States made interventions
- Eradication is a worthy public health goal that can be achieved
- A major obstacle in many countries is *inadequate routine immunization systems which must be strengthened* as an essential building block for achieving and maintaining regional measles elimination.

2015 targets as a milestone towards eradication

- GIVS coverage goals (90% routine coverage)
- 95% mortality reduction vs 2000
- Incidence <5 per million
Introducing New vaccines ...
ADIPs focus on faster uptake for the world’s poorest children

Million doses

0 50 100 150 200

10% coverage**

33% coverage**

50% coverage**

HepB – 75 lowest income countries

Hib - 75 lowest income countries

Years from availability
Turning a Vicious Cycle into a “Virtuous Cycle”

Limited supply → Higher prices
          Uncertain demand

Increased production capacity → Lower prices
          Predictable demand
Accelerating the Development and Introduction of New Vaccines: establishing, communicating, & delivering the value of vaccination

Establish value
- Surveillance
- Vaccine efficacy/safety
- Cost-effectiveness
- Disease burden & vaccine impact are well defined at country level

Communicate value
- Audience research
- Key messages
- Media relations
- Generate political will to prioritize disease prevention and vaccine introduction

Deliver value
- Demand forecast/roll-outs
- Financing
- Target product profiles
- Reliable supply of affordable vaccine and assured financing
Countries Using Hib containing Vaccine in National Immunization Schedule

Source: WHO/IVB database, 193 WHO Member States. Data as of June 2011
Date of slide: 14 June 2011

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Countries Using Pneumococcal Conjugate Vaccine in National Immunization Schedule

No (90 countries or 47%)
Yes (64 countries or 33%)
Yes (Part of the country) (2 countries or 1%)
GAVI Approved not yet introduced (9 countries or 5%)
GAVI Applied (28 countries or 15%)

Source: WHO/IVB database, 193 WHO Member States. Data as of June 2011
Date of slide: 14 June 2011

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Accelerating the introduction of pneumococcal vaccines
Countries Using Rotavirus Vaccine in National Immunization Schedule

Source: WHO/IVB database, 193 WHO Member States. Data as of June 2011
Date of slide: 14 June 2011

No (13 countries or 7%)
Yes (170 countries or 88%)
GAVI Applied (6 countries or 3%)
GAVI Approved not yet introduced (2 countries or 1%)

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Challenges of new vaccine introduction

- Uncertainty or scepticism about disease burden

- Weak immunization systems
  - Knowledge and practice of immunization staff
  - Cold chain, logistics, waste management

- Financial sustainability in resource constrained environment

- Surveillance systems
  - Country ownership and investments in surveillance
  - Adverse events surveillance & appropriate response

- Concerns about vaccine safety

- Fears, perceptions and misinformation about new vaccines
Addressing vaccine pricing

- Transparency in vaccine pricing
- Pooled procurement mechanisms
  - PAHO vaccine revolving fund
- Technology transfer for vaccine production in countries with emerging economies
- Other innovative mechanisms
  - Advanced market commitment
The Advance Market Commitment for Pneumococcal Vaccines

AMC subsidy

GAVI funding

Country Co-pay ( $0.10 - $0.30 per dose initially) *

Tail price cap

Supply Commitment Fulfilled

* Co-financing levels will be in line with the applicable GAVI co-financing policy.
Integrated Approaches to Disease Control

- Global Action Plan for Prevention and Control of Pneumonia launched in November 2009

- WHA resolution on Pneumonia Prevention and Treatment passed in May 2010

- Comprehensive WHO/UNICEF Diarrhoea Control Strategy launched in Nov 2009

- Comprehensive Cervical Cancer Control Strategy updated including immunization, reproductive health, cancer screening and control programmes, and adolescent health services
Monitoring & surveillance: the basis of well-performing immunization programmes
## Type of surveillance needs to be aligned to surveillance objectives

<table>
<thead>
<tr>
<th>Type</th>
<th>Objective</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country-wide, active, with lab confirmation of all cases</strong></td>
<td>Document eradication/elimination - find all chains of transmission; certification</td>
<td>Polio, measles</td>
</tr>
<tr>
<td><strong>Country-wide passive, aggregate reporting, with selective investigation</strong></td>
<td>Routine monitoring; outbreak detection investigation</td>
<td>Syndromic surveillance, avian influenza</td>
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<tr>
<td><strong>Sentinel site surveillance</strong></td>
<td>Networks of sentinel sites providing representative data for the population</td>
<td>Meningitis, Invasive bacterial diseases, rotavirus</td>
</tr>
<tr>
<td><strong>Epidemiologic studies</strong> (detailed, labour intensive) and sero-surveys</td>
<td>Obtain epidemiological information</td>
<td>Hepatitis B; disease incidence based on regular home visits</td>
</tr>
</tbody>
</table>
Countries Implementing Case-based Measles Surveillance, 2008

Yes (173 countries or 90%)
No (20 countries or 10%)

Source: WHO/IVB database, February 2009
Global VPD Laboratory Network, N> 700 Labs

Labs/Institutes testing for:
- Polio only (23)
- Measles/rubella only (531)
- Polio and measles/rubella (109)
- Measles/rubella and yellow fever (14)
- Polio, Measles/rubella and yellow fever (13)

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Types of sentinel surveillance
Bridging to get more comprehensive data

- Facility-based: Meningitis
- Facility-based: All invasive bacterial diseases
- Population-based
- Vaccine clinical trials (probe)

Surveillance
Research
Sentinel site surveillance for Invasive Bacterial Diseases and Rotavirus Diarrhoea

Data collected from WHO Regions

Yes (46 Member States or 24%)

Slide date: 13 November 2009
2009 Global Surveillance Bulletins
Communication: Rotavirus and Invasive Bacterial Diseases

http://www.who.int/nuvi/surveillance/
What's the future
Opportunities

- Mandate from the WHO governing bodies
  - WHA report on GIVS 2005 with report back in 2011
  - WHA resolution on measles control
  - WHA resolution on pneumonia prevention and treatment

- Visible impact of vaccination on mortality and morbidity
  - Pneumococcal and rotavirus vaccines in high and middle-income countries
  - Data from developing countries through ongoing impact monitoring

- Strengthening of national policy & decision making processes

- Decade of vaccines
  - Partnership to communicate the value of vaccination and increase investments in disease prevention through vaccination
Decade of Vaccines

DAVOS 29 January 2010
Bill and Melinda Gates Pledge $10 Billion in Call for Decade of Vaccines to support research, production and delivery of life-saving vaccines to children in developing countries

World Health Assembly May 2010
"....Vaccines are one of the best life-saving buys on offer, preventing an estimated 2 to 3 million deaths each year. WHO and UNICEF, in close collaboration with the Gates Foundation, countries, and partners, are initiating a process to define the ambitions and scope of this Decade of Vaccines."....
The Decade of Vaccines, 2011-2020: a comprehensive venture to advance immunization

- The Decade of Vaccines (DoV) envisions a world where children, families, and communities enjoy lives free of the fear of vaccine preventable diseases.

- The goal of the DoV is to extend the full benefits of immunization to all people, regardless of where they live.
  - This goal reflects the perspective that access to safe and effective vaccines is a human right that is not currently enjoyed by all people, particularly in low and middle income countries.

- Will require full engagement of the diverse stakeholders needed to facilitate vaccine discovery, development and delivery
DoV Work Streams

- Establishing and sustaining broad **public and political support** for the use of vaccines and the financing of immunization services.

- Strengthening the **equitable delivery** of immunization services to achieve universal coverage of safe and effective vaccines by 2020 in order to prevent, control, eliminate or eradicate vaccine-preventable diseases.

- Cultivating a robust scientific enterprise to produce innovation in the **discovery and development** of new and improved vaccines and associated technologies for high priority disease targets.

- Creating the right market incentives to ensure an **adequate and reliable supply** of affordable vaccines.
Proposal for Delivery Goal

The goal of the Delivery stream of the Decade of Vaccine is, throughout the life-course, to achieve equity in the delivery of effective and safe immunization along with other essential primary health care interventions in order to prevent, control, eliminate or eradicate vaccine-preventable diseases.

To strengthen country capacities to deliver immunization services to all people, following five guiding principles:

1. National ownership, responsibility and accountability in extending safe and effective immunization to their target populations;

2. Greater equity and equality in access to immunization both within and across countries, with a particular focus on populations in greatest need;

3. Ready and rapid access to new vaccines, technologies and products to meet national, regional and global disease burden reduction;

4. Alignment of immunization with other primary health care interventions; and

5. Preparedness and response to special needs created by unusual events, including humanitarian emergency action and the emergence of epidemics.
THANK YOU