IVB Director’s report to SAGE

17 April 2018

Immunization in a Changing World

leadership, population growth, migration, emerging diseases, polio transition
Outline

WHO management changes

   GPW 13 and immunization within GPW

GVAP goals in a changing world

   Diphtheria coverage and outbreaks as an indicator of challenges in a changing world

   Polio transition as an additional change

   Middle income countries

New vaccine introduction

Looking forwards:

   Life cycle approach

   Integration and UHC

   Post-2020
## Immunization Contributors to GPW13 DRAFT

### UNIVRSAL HEALTH COVERAGE: 1 billion more people with universal health coverage

<table>
<thead>
<tr>
<th>Objective</th>
<th>Target Year</th>
<th>Coverage</th>
<th>Reference</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase availability of essential medicines for primary health care, including the ones free of charge</td>
<td>TBD</td>
<td>TBD</td>
<td>3.b.3</td>
<td>TBD</td>
</tr>
<tr>
<td>Increase average coverage of health services among women and girls in the poorest wealth quintile to 70%</td>
<td>51% (2014)</td>
<td>70%</td>
<td>5.1, 17.18</td>
<td>WHO Equity Monitor</td>
</tr>
<tr>
<td>Reduce the global maternal mortality ratio by 50%</td>
<td>216 per 100,000 live births (2015)</td>
<td>108 per 100,000 live births</td>
<td>3.1</td>
<td>MMEIG</td>
</tr>
<tr>
<td>Reduce the preventable deaths of newborns and children under 5 years of age by 30%</td>
<td>41 per 1,000 live births (2016)</td>
<td>30 per 1,000 live births</td>
<td>3.2</td>
<td>UN IGME</td>
</tr>
<tr>
<td>Increase coverage of human papilloma virus vaccine to 50% among adolescent girls</td>
<td>TBD</td>
<td>TBD</td>
<td>3.7, 3.8</td>
<td>TBD</td>
</tr>
<tr>
<td>Increase coverage of 2nd dose of measles containing vaccine to 90%</td>
<td>64% (2016)</td>
<td>90%</td>
<td>3.1.b, 3.8.1</td>
<td>WHO/Unicef</td>
</tr>
</tbody>
</table>

## HEALTH EMERGENCIES: 1 billion more people made safer (making us all safer)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Target Year</th>
<th>Coverage</th>
<th>Reference</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase number of people in fragile settings with access to essential health services</td>
<td>TBD</td>
<td>TBD</td>
<td>3.d</td>
<td>IHR Reporting</td>
</tr>
</tbody>
</table>
Vaccines Landscape Contributors to GPW13 Strategic Priorities

WHO Mission 2019-2023

Immunization Mission 2030
To support all countries to deliver quality immunization services as part of an integrated, people-centered platform of disease prevention that spans the human life-course

Keep the world safe
Vaccines for Epidemic Diseases

Cholera
Hepatitis A
*Measles*
Meningococcal Meningitis
*Polio*
Yellow Fever

Promote health
Universal Recommended Vaccines for Children and Adults

BCG
DTP-containing vaccine
Hepatitis B
Haemophilus influenzae type b
HPV
*Measles*
Pneumococcal (Conjugate)
*Polio*
Rotavirus
Rubella

Serve the vulnerable
Vaccination in Humanitarian Emergencies, Migrants, Special Population Groups, High Risk Populations (incl. for certain regions)

Cholera
*Dengue*
Ebola
Japanese Encephalitis
Meningococcal
Mumps
Rabies
Seasonal influenza
Typhoid
*Malaria*

TB, HIV,
Lassa, CCHF, Mers CoV, Nipah, Zika, etc*
Progress against the GVAP 2020 Goals

To date only 1/6 Goals met: New vaccine introductions

- **Fell**: Number of new cases of paralytic poliomyelitis due to wild poliovirus. To date, 359 cases in 9 countries in 2010, reduced to 74 cases in 2 countries in 2015, and further reduced to 0 cases in 2016.

- **Measles and Rubella Elimination**: Progress towards eliminating measles and rubella. Graphs show the number of countries meeting targets for 2016 and 2020.

- **Maternal and Neonatal Tetanus Elimination**: Progress towards eliminating maternal and neonatal tetanus. 48 priority countries are targeted, with elimination still to be achieved in 10 priority countries.

- **Global DTP3 Coverage**: Coverage stable since 2010. Data shows stabilization in coverage rates across different regions.

Draft 2017 GVAP Assessment Report
Global DTP3 coverage improving steadily, but not fast enough to reach the global goal of 90% -- leaving 20m children vulnerable

Population growth in Africa makes coverage “plateau”, even as ever more children are vaccinated

African countries need to vaccinate half a million additional children every year just to keep up with growth.


Surviving infants

Country Profile: Nigeria

Vaccinated

20/04/2018 | Title of the presentation
Countries with **all districts** achieving at least 80% DTP3 coverage, 2016

Diphtheria Boosters

Number of DTP Booster doses introduced in the national immunization programme

2016

Disclaimer:
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World Health Organization, WHO, 2016. All rights reserved.

Map production: Immunization, Vaccines and Biologicals (IVB), World Health Organization (WHO)
Data source: IVB database
Who is Looking for Diphtheria?

Minimum-standard surveillance

- Case-based
- Lab confirmed
- Nationwide

Data source: JRF Surveillance Supplemental Questionnaire 2017
Map production Immunization Vaccines and Biologicals (IVB), World Health Organization
How Much Diphtheria Is There?

- This is mostly driven by clinical diagnosis
- 2016 had 7097 cases, 97% by clinical diagnosis
Nov 2017 - April 2018: Outbreaks of Diphtheria

Bangladesh, Yemen, Venezuela, Haiti, Indonesia,…..
Bangladesh: The Rohingya Crisis

900,377 Rohingya migrant refugees in Bangladesh in makeshift camps

• 688,000 arrived since August 2017, influx ongoing
• Aggressive public health response to diphtheria outbreak
  • Vaccination, case management, contact tracing, chemoprophylaxis, risk communication
• 5710 cases, only 119 (2%) lab confirmed
  • Of 355 samples tested, only 34% positive

![Graph showing vaccination data]
Accompanied by measles outbreaks in Rohingya camps (2017-18)
Vaccine coverage in Myanmar prior to Rohingya displaced persons crisis
DTP3 coverage, Yemen 2000-2016

Source:
WHO/IVB database, data reported to WHO by Member States as of 15 July 2017.
WHO-UNICEF estimates of immunization coverage (WUENIC) as of 15 July 2017
http://www.who.int/immunization/monitoring_surveillance/data/administrative_coverage.xls
http://www.who.int/entity/immunization/monitoring_surveillance/data/coverage_estimates_series.xls
Yemen: Conflict

As of 4/3/2018

- 1525 diphtheria cases
  - only 19 (1%) lab confirmed
- 85 deaths
- 20% <5, 44% 5-14
- 86% of deaths in <15
As of 3/20/2018

- 726 cases, unsure how many lab confirmed
  - In 2017 33% lab confirmed
- 113 died
- Has spread to Brazil, Colombia
- 105 <5, 216 5-14
Venezuela vaccination coverage

DPT3/Penta3 - DPT4 administrative coverage &
estimates of protection at birth (PAB)

DPT3/Penta3 by districts. 2016

Coverage

Ranges

< 80
80-94
95-100
> 100

Fuente: EPI Tables, PAHO-WHO/UNICEF Joint Reporting Form (JRF), and country reports. 2017

4/20/2018
<table>
<thead>
<tr>
<th>Country</th>
<th>WHO (vials)</th>
<th>MSF (vials)*</th>
<th>PAHO (vials)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venezuela</td>
<td></td>
<td></td>
<td>2000</td>
</tr>
<tr>
<td>Haiti</td>
<td></td>
<td></td>
<td>2000</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>4950</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>Yemen</td>
<td>5900</td>
<td>970</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11850</strong></td>
<td><strong>2970</strong></td>
<td><strong>4000</strong></td>
</tr>
</tbody>
</table>

2000-2017: Global use approximately 200 vials
2017-2018: Global use approximately 18,000 vials
2017-2018: Outbreaks of Diphtheria

Worrying but not surprising because…

- Countries have lower than desired diphtheria vaccination coverage, particularly in certain districts.
  - Pockets of un- or under-immunized
- 25% of Member States have no recommendation on booster vaccination
  - 6 of the top 10 diphtheria countries have no booster
- Surveillance for diphtheria is sub-optimal and lab diagnosis is extremely weak
- Geopolitical circumstances in 2017-2018 have highlighted the problem
  - Refugee crisis bring people into close contact and more transmission

Reactive emergency response far more expensive than planned routine prevention !!
Measles reported cases (monthly reporting) and AFR, EMR, EUR, SEAR, WPR 2014-2017
Top 10 countries with most under- and un-vaccinated children (DTP3), in 2016

VPD Surveillance Heavily Depends on Polio Funding

WHO Labs/Institutes testing for:
- Polio (27)
- Measles/rubella (531)
- Polio and measles/rubella (109)
- Measles/rubella and yellow fever (14)
- Polio, Measles/rubella and yellow fever (13)
- Polio and/or Measles/rubella and JE

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**Global level**

- **Roadmap Jan 2018**
- Critical path for research and potential use
- Criteria for candidate products prioritization
- Dashboard progress (Taskforce)

- **Generic Protocols**
  - Vx: June 2018
  - Dx: June 2018
  - Tx: Sept 2018

- **Deployment (outside trials) 2018**

- **Non product research WHE/GOARN**

**Country level**

- **NRAs + ERCs - AVAREF joint reviews of protocols**
- **Support to countries for liability and compensation**
- **Tools for review/design of trials at country level**
- **Tools for data sharing and sample sharing**
- **Basic capabilities: surveillance, lab, case management, …**

**WHE/IMS**

- **Country Operational Emergency Plan**

- **GCM**
  - Mapping of stakeholders

- **SAG**
  - Recommendations priority research during event
Fragile and polio endemic countries account for a disproportional share of the un and under vaccinated

Middle-income countries without any donor support have highest number of unvaccinated children in the EURO Region

<table>
<thead>
<tr>
<th>Income level category</th>
<th>Average no. of antigens accommodated/country</th>
<th>Average no. of new vaccines introduced/country</th>
<th>DTP3 Coverage (population weighted average)</th>
<th>Unvaccinated infants (DTP3)</th>
<th>MCV1 Coverage (population weighted average)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>% of Region</td>
<td># of infants</td>
</tr>
<tr>
<td>HIC(^b) (n=33)</td>
<td>12.5</td>
<td>2.0</td>
<td>96.5%</td>
<td>24.7%</td>
<td>182,250</td>
</tr>
<tr>
<td>MIC(^b) (no Gavi support) (n=13)</td>
<td>10.4</td>
<td>0.5</td>
<td>88.7%</td>
<td>70.2%</td>
<td>518,850</td>
</tr>
<tr>
<td>MIC (Gavi support) (n=7)</td>
<td>13.0</td>
<td>2.6</td>
<td>97.3%</td>
<td>5.1%</td>
<td>37,270</td>
</tr>
<tr>
<td>Regional average or total #</td>
<td>11.9</td>
<td>1.6</td>
<td>93.4%</td>
<td></td>
<td>738,370</td>
</tr>
</tbody>
</table>

Data source: WHO/UNICEF Joint Reporting Form, 2015
## Immunization programme performance by income status and Gavi support 2016 (as per the SDG indicator)

<table>
<thead>
<tr>
<th>Income Status</th>
<th>Coverage Status</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gavi eligible (73 MS)</td>
<td>82% of under vaccinated</td>
<td>DTP3 – indicator for health system strength</td>
</tr>
<tr>
<td></td>
<td>80% coverage</td>
<td>System issues in Gavi eligible countries despite heavy financial investment and donor attention</td>
</tr>
<tr>
<td></td>
<td>50% coverage</td>
<td>MCV2 – indicator of vaccination beyond infancy</td>
</tr>
<tr>
<td></td>
<td>93 % coverage</td>
<td>In Gavi eligible countries lack of platform for vaccination beyond infancy</td>
</tr>
<tr>
<td></td>
<td>96 % coverage</td>
<td>PCV last dose – indicator for new (expensive) vaccine uptake</td>
</tr>
<tr>
<td></td>
<td>40% coverage</td>
<td>All countries are able to introduce new vaccines and on the right trajectory apart from middle income countries</td>
</tr>
<tr>
<td></td>
<td>31% coverage</td>
<td></td>
</tr>
<tr>
<td>Middle Income non Gavi (64 MS)</td>
<td>16% of under vaccinated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50% coverage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>93 % coverage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>96 % coverage</td>
<td></td>
</tr>
<tr>
<td>High Income (56 MS)</td>
<td>3% of under vaccinated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40% coverage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31% coverage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>85% coverage</td>
<td></td>
</tr>
</tbody>
</table>

* Reporting issue, vaccine in schedule but member state does not report
How long does it take for new vaccines to reach coverage levels of traditional vaccines in Low income countries?

Countries with HPV vaccine in the national immunization programme

- **Includes partial introductions**

**Data source:** WHO/IVB Database, as of 26 January 2018

**Map production:** Immunization Vaccines and Biologicals (IVB), World Health Organization

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**Introductions planned for 2018-19:** Tanzania, Zimbabwe, Ethiopia, Senegal, Guatemala, Uzbekistan, Mauritania, Cameroun, Kenya, Malawi

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**Legend:**
- Green: Introduced* to date
- White: Not Available, Not Introduced/No Plans
- Gray: Not applicable

- **79 countries or 40.7%**
- **115 countries or 59.3%**

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* Includes partial introductions

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HPV vaccine: towards more ambitious targets

Current status: (Jan’18): 79 countries (40%) introduced HPV vaccine

- Supply constraints and cost considerations slow introductions
- Unlikely to reach target 70% of countries to introduce HPV by 2020

HPV is a target in WHO Global Programme of Work (2018-2023) and SDGs (3.7)

DG Flagship Program - broad alliance towards elimination of cervical cancer as a public health problem
  - collaboration across WHO Departments (IVB, RHR, NMH) and IARC
  - UN Joint Programme on Cervical Cancer Prevention (UNICEF, UNFPA, IAEA UNWOMEN, UNAIDS, UNODC)
  - Civil society partners: GAVI, IUCC, CHAI

Assess potential contribution of HPV vaccines to an elimination goal
Beyond 1st year of Life/Life-course Vaccination

- Build/strengthen delivery platforms across the life-course
- Shift beyond 1st/2nd year of life (while increasing MCV2!)
- Birth- On-time HepB/BCG thru closer work with maternity services birth registration and receipt of HBR
- Adolescent: Td, HPV
- Maternal – future new vaccines (Influenza, RSV, GBS)
- Adult – focus on health worker vaccination (HepB, measles, influenza)

Why we need to strengthen 2YL platforms

- Several vaccines are now scheduled in 2YL - including MCV2, boosters & new vaccines – e.g. malaria vaccine

- Most vaccines can be given in 2YL if missed (catch-up)

- Most RI systems not well equipped to for vaccinating beyond infancy – need to pay attention to:
  - Special efforts for social mobilization/ creating demand for vaccination beyond infancy
  - Data systems to monitor 2YL coverage
  - Clear catch-up vaccination policies – improvement in practices
  - Special training of HCW, mid-level managers
Aligning immunization with emerging global health and development agendas

UHC/Health System Strengthening

- Policy level: use of Immunization indicator to track UHC progress; domestic financing
- Position immunization platform to help accelerate coverage with linked UHC interventions
- Support Gavi HSIS processes including fiduciary, supply chain and technical assistance deepened at provincial/district levels

Health Security

- Ensure prioritization of preventive interventions
- Apply existing guidelines and ensure vaccine access
- Risk Assessments and Outbreak Responses, where needed
- Prioritize continuous learning and research activities in context of hum emergencies and emerging pathogens
Post 2020 – Will "more of the same" work?

- Successes of last decade helped by introduction of new vaccines
  - Few new vaccines coming in next decade
  - What will drive uptake? How do we keep up with population growth and movement?
- Innovations for Coverage and Equity (ICE)
  - Granularity (GPS mapping, heat mapping etc)
  - Products (thermostability, patches, etc)
  - Policy (legal frameworks, school checks, product differentiation, TSE) etc
  - Strategies (life-course, social media, client-centred approaches,...)
Getting to a post-2020 agenda?

• DG will be convening partners to establish mechanism for post-2020 agenda development

• Bottom-up: build from country and regional needs

• We are not short of goals but need to consider:
  • Regional business cases / vaccine action plans
  • Transitions (polio, GAVI graduations, new vaccines)
  • Demographics
WIW 2018 THEME: Protected Together, #VACCINESWORK

This WIW, we can help #VACCINESWORK leave a record-breaking mark on social media.

In 2016, nearly 1 in 10 infants didn’t receive any vaccinations - this must change!

Join us to highlight the collective action necessary to ensure everyone is protected against vaccine-preventable diseases.

CAMPAIGN FOCUS DAYS

We will spotlight three key groups of people who are vital to ensuring everyone is protected with vaccines.

24 APRIL - THE PUBLIC
We Protect Each Other, #VaccinesWork
Recognize the individuals who help ensure that they and their families are protected from vaccine-preventable diseases

26 APRIL - HEALTH WORKERS
On the Frontlines, We Protect Communities, #VaccinesWork
Highlight frontline health workers who ensure people everywhere are protected from vaccine-preventable diseases

27 APRIL - DONORS/LEADERS
Our Commitment Keeps People Protected Together, #VaccinesWork
Spotlight donors and leaders who help fund vaccines and ensure that they are available for people around the world
Thank you