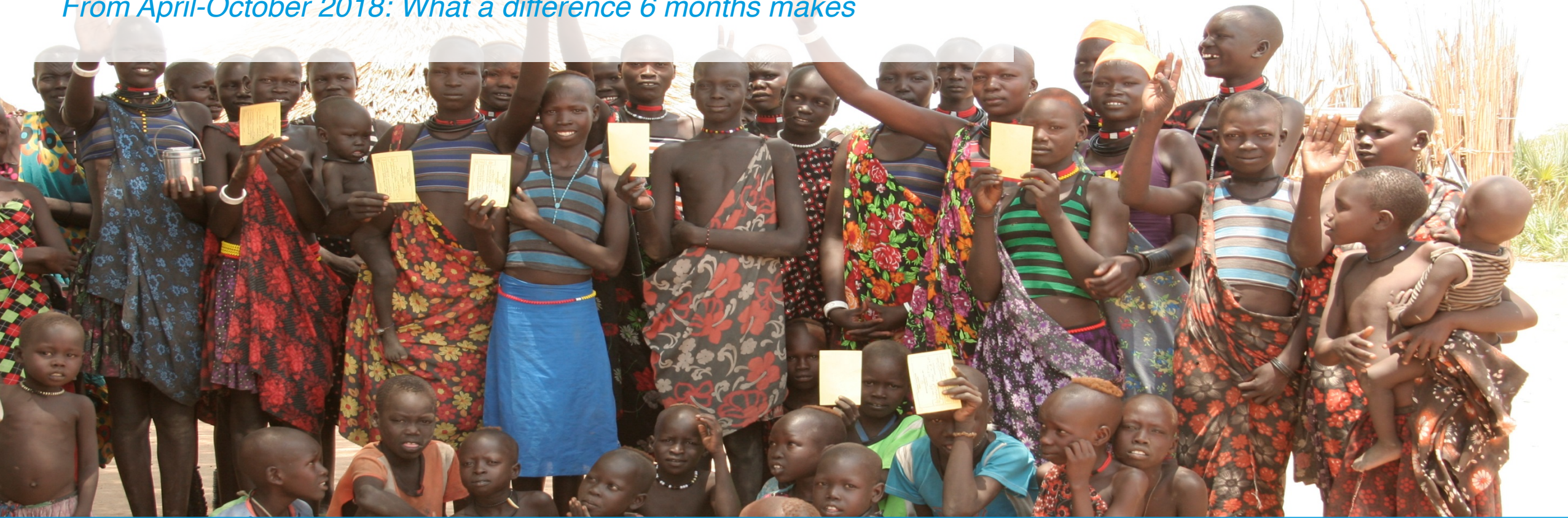


Immunization in a Changing World

From April-October 2018: What a difference 6 months makes



IVB Director's report to SAGE

23 October 2018



**World Health
Organization**

Outline



Changes over the last 6 months

WHO management changes

WHO institutional changes and processes

Data, data, data... and the lack of it.



April-October: what a difference 6 months make



April-October: what a difference 6 months make

The NEW ENGLAND JOURNAL of MEDICINE



ORIGINAL ARTICLE

Phase 2b Controlled Trial of M72/AS01_E Vaccine to Prevent Tuberculosis

O. Van Der Meeren, M. Hatherill, V. Nduba, R.J. Wilkinson, M. Muyoyeta, E. Van Brakel, H.M. Ayles, G. Henostroza, F. Thienemann, T.J. Scriba, A. Diacon, G.L. Blatner, M.-A. Demoitié, M. Tameris, M. Malahleha, J.C. Innes, E. Hellström, N. Martinson, T. Singh, E.J. Akite, A. Khatoon Azam, A. Bollaerts, A.M. Ginsberg, T.G. Evans, P. Gillard, and D.R. Tait

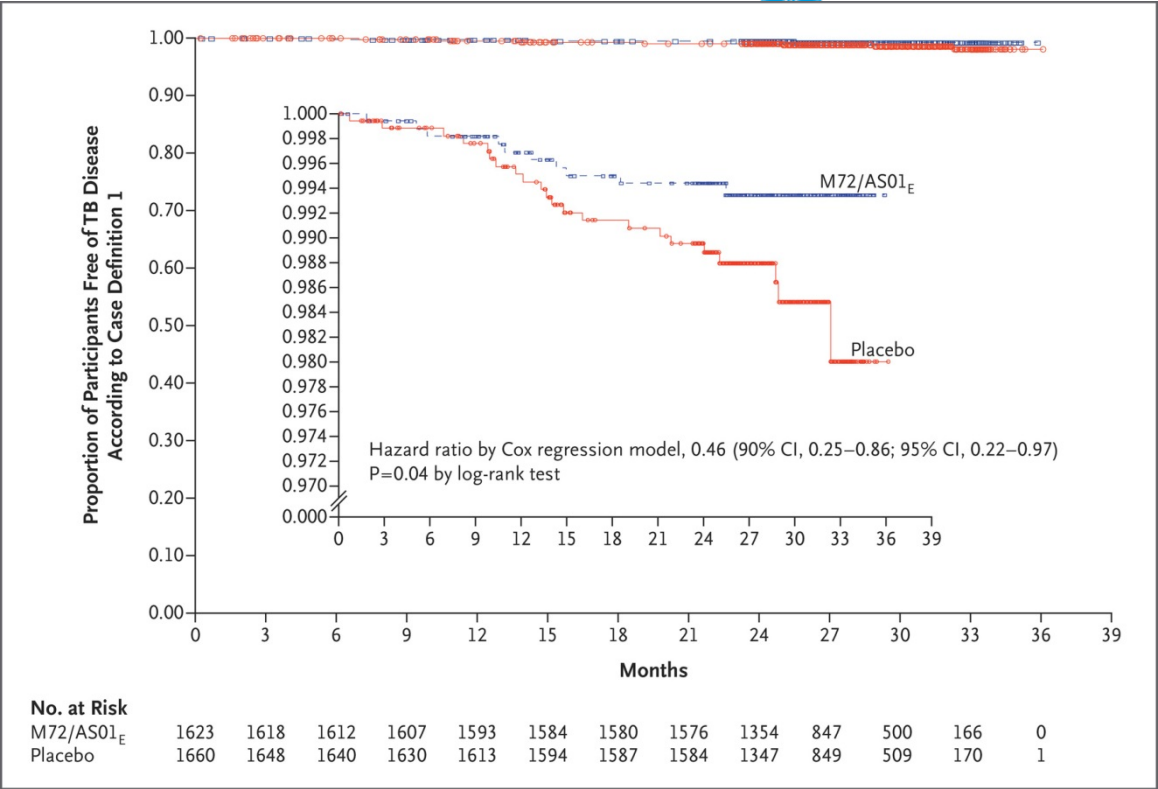
Study population:

HIV +/- adults with evidence of past Mtb exposure (IGRA +) in RSA, Kenya, Zambia

Vaccine efficacy against pulmonary TB

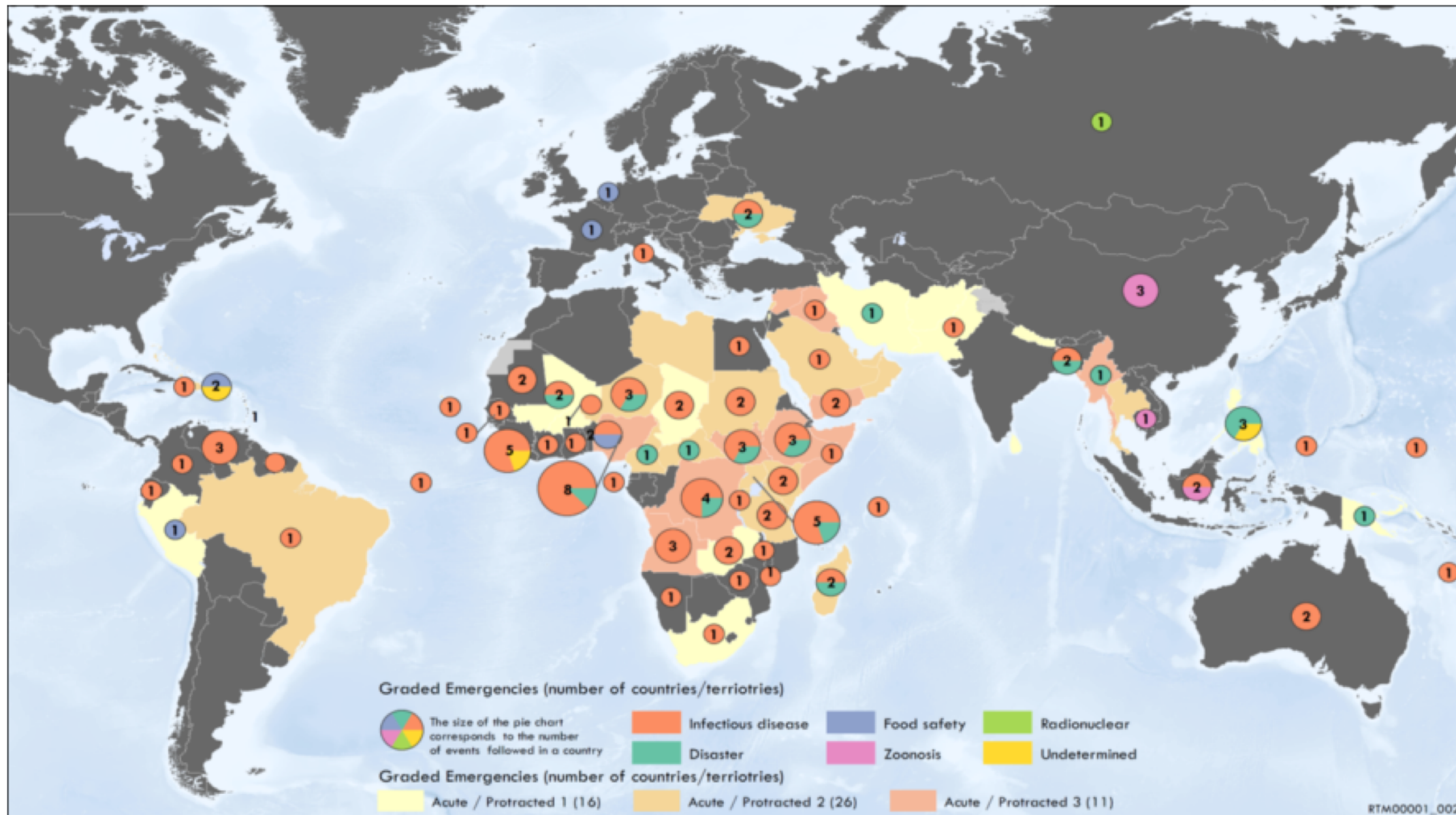
54% (90%CI 14-75) over 2 years follow-up

Partially meets pre-defined WHO Preferred Product Characteristics



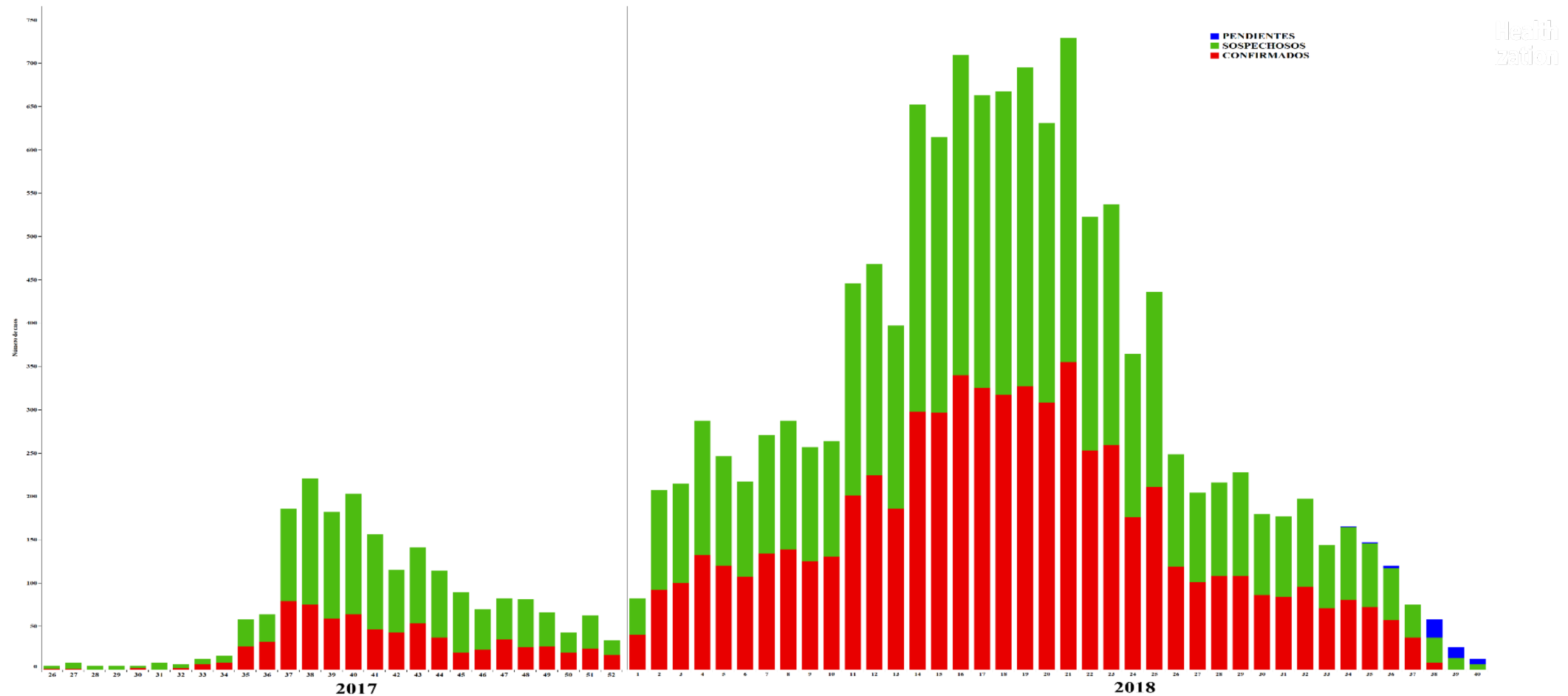
April-October: what a difference 6 months make

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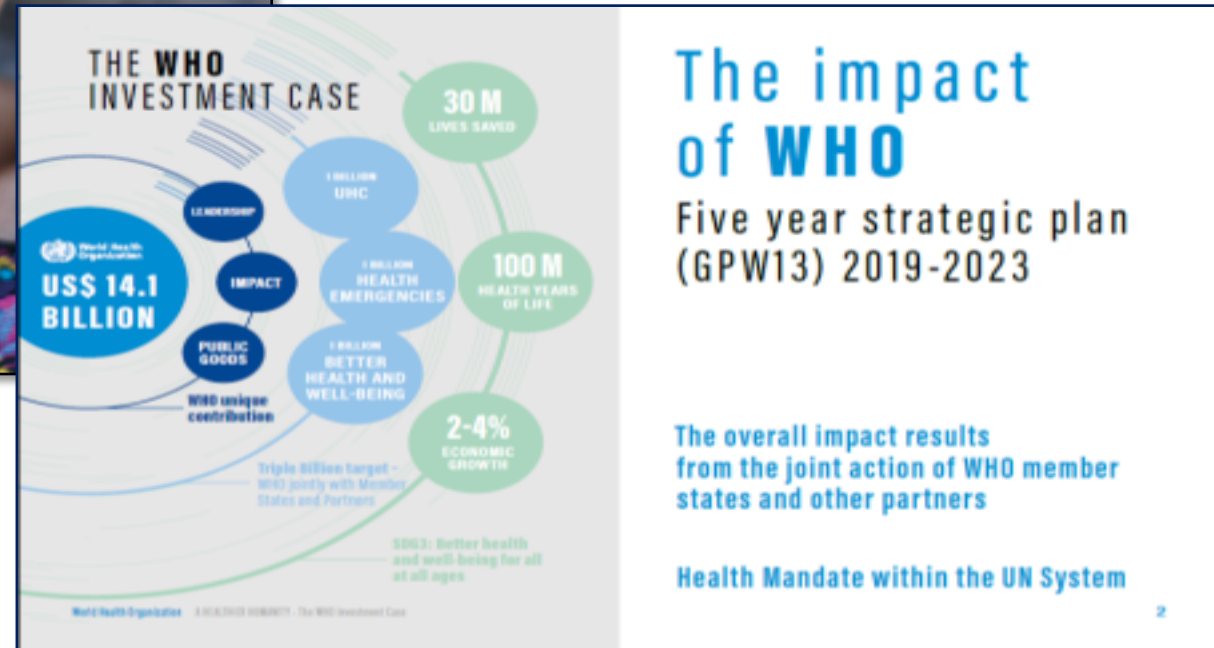


April-October: what a difference 6 months make

Reported Measles Cases by Classification and Epidemiological Week. Venezuela EW-26, 2017 – EW-40, 2018



2 weeks ago we launched WHO's 1st ever Investment Case



The impact of WHO
Five year strategic plan (GPW13) 2019-2023

The overall impact results from the joint action of WHO member states and other partners

Health Mandate within the UN System

We are 'radically redesigning' key processes

Technical processes

- Technical Assistance & Policy Dialogue
- Norms, Standards Technical Guidance
- Data, Monitoring & Surveillance
- Research & Innovation

Business processes

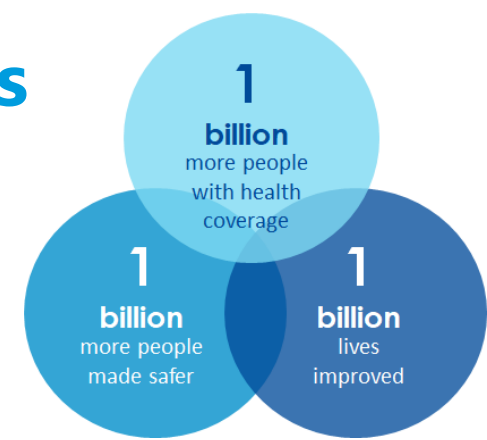
- New Planning & Budget Process
- Recruitment
- Supply Chain
- Performance Management

External Relations processes

- Resource Mobilization
- Communications (external & internal)

Immunizations contribution to WHO's Strategic Priorities

Immunizations will contribute to achieving 20% the 3 billion target*



A billion more people with health coverage

- Increasing health coverage through the life-course with vaccines for women, infants, children, adolescents, adults, and the elderly
- Contribution to the reduction in the burden of communicable diseases from
 - Respiratory infections
 - Diarrhoeal diseases
 - Vector born diseases
 - Viral diseases
 - Influenza

- Tuberculosis (BCG), Diphtheria, Tetanus, Pertussis, & Polio
- Measles & Rubella
- Meningococcal, Pneumococcal & Hib meningitis
- Rotavirus
- Yellow-Fever, Typhoid, JE, (in specific regions and populations)
- Seasonal Influenza

A billion more people made safer

- Contributing to a safer world with vaccines

- Ebola, Cholera, Yellow-Fever, Meningitis, Polio, Measles, Diphtheria

A billion more lives improved

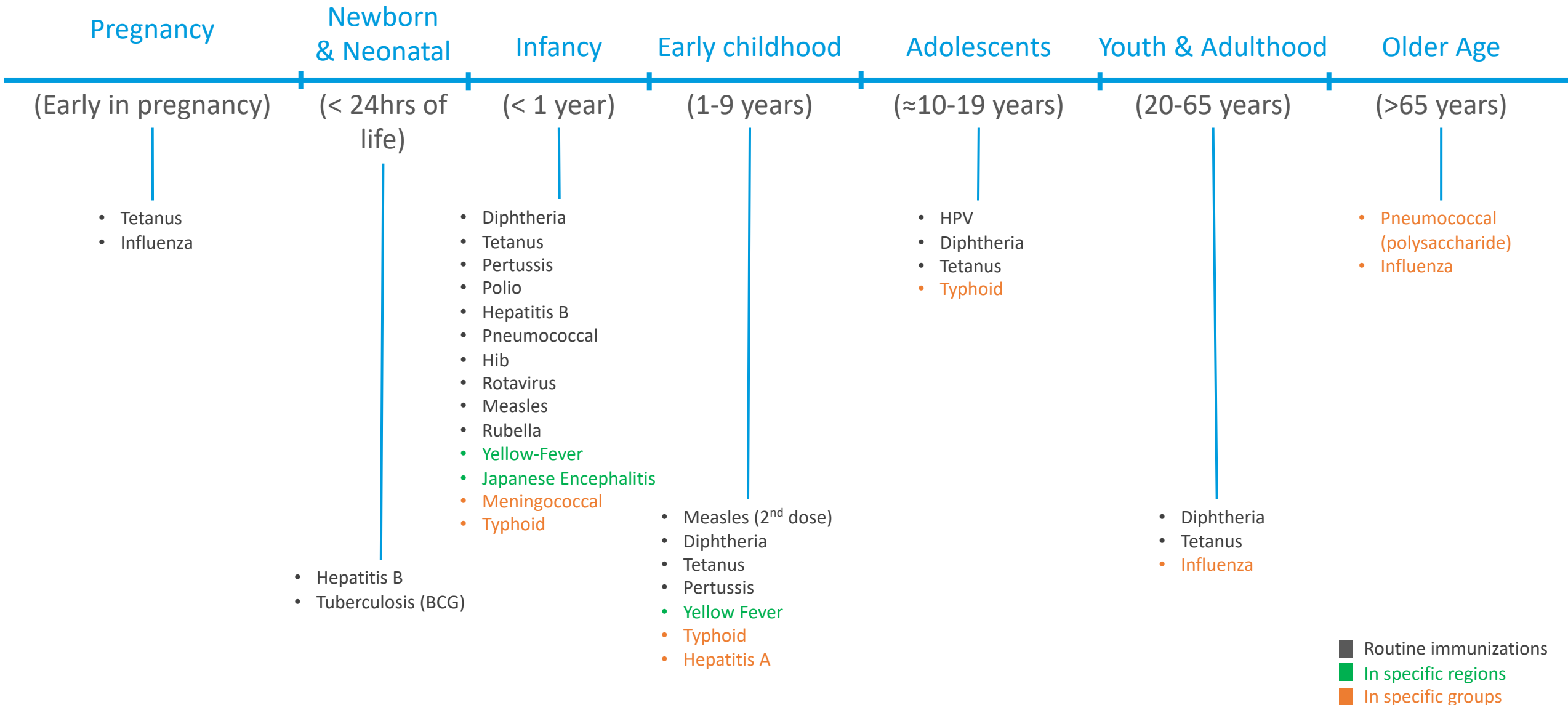
- Reduction in the burden of non communicable diseases including cancers (cervical & liver)

- Human Papilloma Virus (HPV)
- Hepatitis-B

* Based on a crude off back-of-the envelop calculation using Gavi Mid-Term Review data not validated by SIG data gurus.

Immunizations contribution to the Life Course (illustrative*)

Disease protection through immunizations with WHO vaccine recommendations



* All WHO vaccine recommendations: http://www.who.int/immunization/policy/immunization_tables/en/

WHO Immunization Approach to implementing GPW 2019-2023

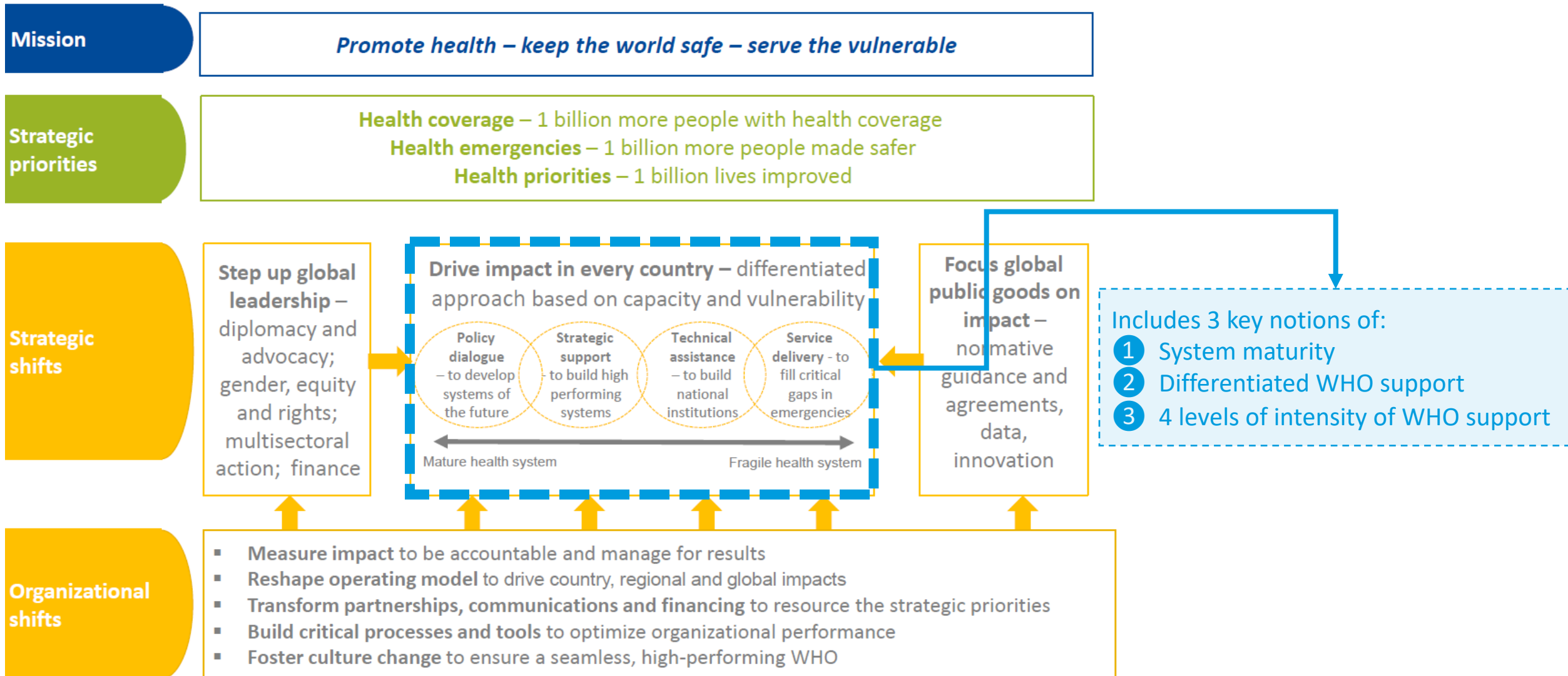
- Strategic approach developed by end 2018 and aligned with GPW13
- Built up from separate Regional High-Level Strategies for Immunization and HQ (6+1) and countries
- Focus:
 1. Value proposition of immunization to reach the 3 Billion, UHC and SDG3
 2. WHO leadership and corporate priorities (life course, platforms and public goods)
 3. How will WHO work across in a coordinated and integrated way towards supporting MS build their systems and achieve timely outcomes?
 4. How will WHO drive immunization impact in countries (maturity grid) and priority countries
 5. What specific WHO organizational shifts are need to drive results

One WHO Immunization Strategy (2019-2023)



Developing Regional Approaches ?

Some general guidance from GPW13












DRAFT EMR Country Categorization Heat Map

Used to define priority WHO interventions in countries

		1. Prog Mngt	2. Service Delivery	3. Vaccine Mngt & Logistics	4. VPD Surveillance	5. Immunization Data	6. Outbreak Preparedness & Response	7. Financing & Sustainability	8. Community Demand & Vaccine Hesitancy
Level 1	Afghanistan								
Level 1	Iraq								
Level 1	Libya								
Level 1	Pakistan								
Level 1	Somalia								
Level 1	Syrian Arab Republic								
Level 1	Yemen								
Level 2	Djibouti								
Level 3	Jordan								
Level 3	Kuwait								
Level 3	Lebanon								
Level 3	Sudan (North)								
Level 3	Tunisia								
Level 3	United Arab Emirates								
Level 4	Bahrain								
Level 4	Egypt								
Level 4	Iran								
Level 4	Morocco								
Level 4	Oman								
Level 4	Palestine								
Level 4	Qatar								
Level 4	Saudi Arabia								
Average maturity score		2.9	2.8	3.5	2.7	2.7	3.4	2.7	3.2
Level 1 & 2		2.5	1.9	3.1	2.4	2.0	2.9	1.9	2.6
Level 3		2.8	2.5	3.2	2.6	2.4	3.2	2.6	3.2
Level 4		2.8	2.9	3.6	2.7	2.7	3.4	2.5	3.4

DRAFT SEAR Immunization Systems Maturity Grid

									
	National Teams	Planning Cycle	Funding Flows	Strategies to Reach	Beyond Infant Vaccination	Vaccinator Capacity	Adequate Supply	Community Involvement	Monitoring & Surveillance Systems
Bangladesh	Yellow				Red	Teal		Yellow	
Bhutan	Teal	Green		Teal	Yellow	Teal	Green	Teal	
DPR Korea	Teal		Red	Yellow	Red	Yellow	Red		
India	Teal		Yellow	Teal	Yellow		Teal		Yellow
Indonesia	Teal				Yellow		Teal		Yellow
Maldives	Green				Teal	Yellow	Green		Teal
Myanmar	Yellow			Yellow	Red	Yellow	Teal	Yellow	Yellow
Nepal	Yellow	Teal	Yellow	Teal	Red	Teal	Teal		Yellow
Sri Lanka	Teal			Green	Teal			Green	Teal
Thailand	Teal				Yellow			Teal	Yellow
Timor-Leste	Teal				Yellow			Teal	Yellow
	Teal				Yellow		Teal		Yellow





Maturity grids

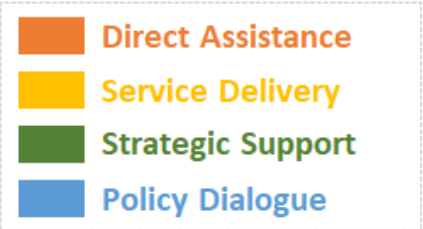
Based on 5 Regional Approaches*

Fragile, Delicate & Externally Funded

Immunization Systems Maturity

Robust, Resilient & Sustainable Programmes

Level of WHO support	Immunization Systems Gaps	Notional intensity of WHO support by broad types
Level 1 Countries receiving increased & intensified WHO support	Countries with significant deficiencies in most immunization components of their programme	
Level 2 Countries receiving significant & comprehensive WHO support	Countries with important deficiencies in many of the immunization components of their programme	
Level 3 Countries receiving focused & tailored WHO support	Countries with deficiencies in specific immunization components of their programme	
Level 4 Countries receiving limited & tactical WHO support	Countries with few deficiencies in their immunization systems	



Will this diagramme illustrates to similarity in the Regional approaches, there are important variations

For instance

- Category v Level
- Focus on describing county maturity v focus on describing the level of intensity in WHO support
- Types of WHO country support generally the same with variations in terms used from those of GPW13

* AFRO, EMRO, EURO, SEARO and WPRO

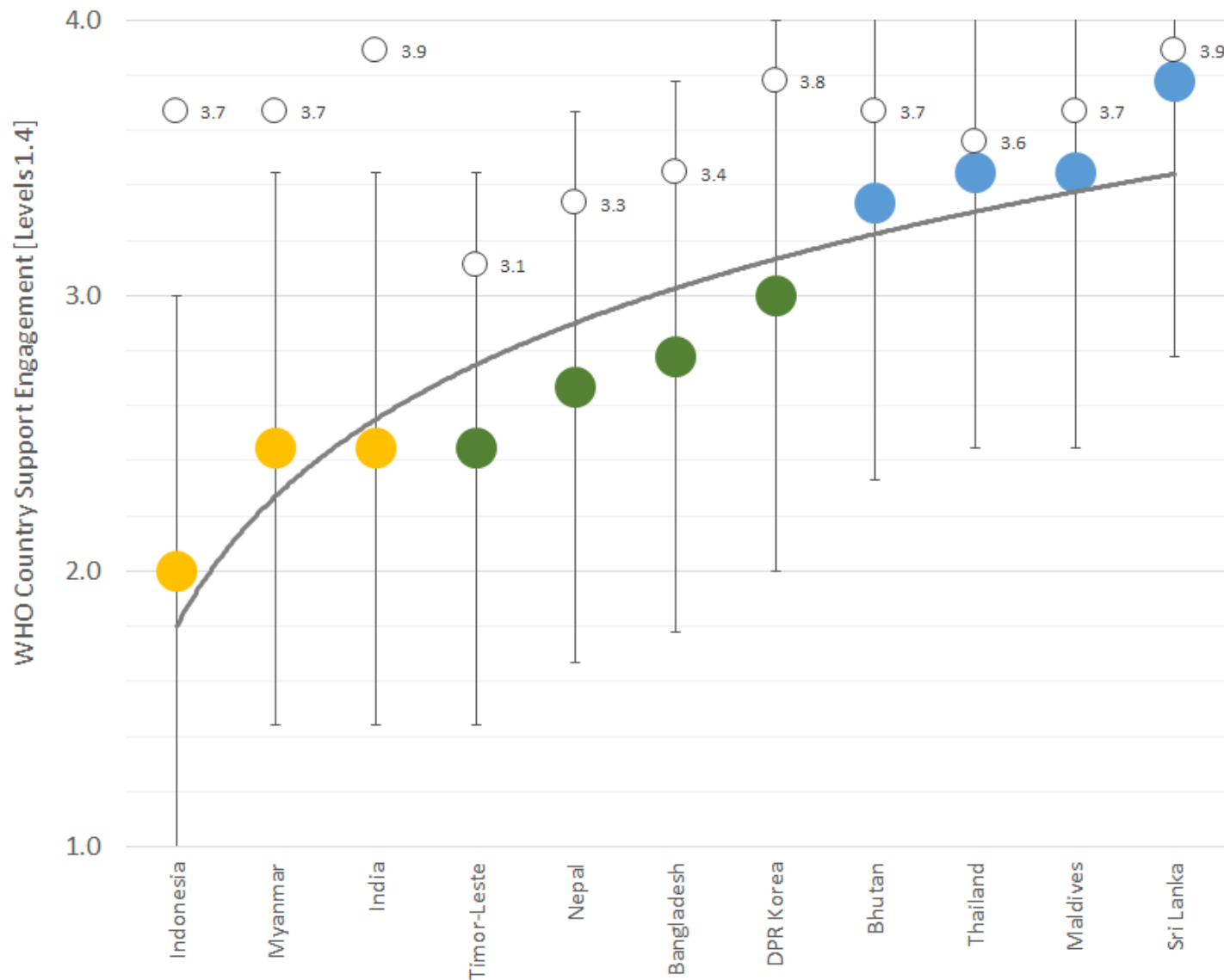
Some Examples

Sub-national level of WHO Engagement in SEAR Countries

Level 1 Turnaround Countries	Are countries with important sub-national deficiencies in most immunization systems components and require <u>increased & intensified</u> support from WHO	Sub-national focus in Bangladesh (ex: Cox's Bazar), Indonesia (ex: Papua) & Myanmar (Rakhine)	
Level 2 Tipping Point Countries	Are countries considered to have significant deficiencies in their immunization system and will need <u>significant & comprehensive</u> support from WHO	India Indonesia Myanmar	27% (3)
Level 3 Strategic Intervention Countries	Are countries considered to have some specific gaps in their immunization systems that will need <u>focused & targeted</u> support from WHO	Bangladesh DPR Korea Nepal Timor-Leste	36% (4)
Level 4 Standalone Countries	Are countries considered to have well-functioning immunization systems and will required more <u>limited & tactical</u> support from WHO.	Bhutan Maldives Sri Lanka Thailand	36% (4)

Some Examples

Country scores, ranges and 2023 Targets for SEAR



All this requires Data, Data, Data...

Coverage, burden, impact, demand, supply, barriers, etc...

- What do we know, when do we know it, where do we know it?
- What don't we know ?
- What don't we know that we don't know ?

Reflections of data issues in European Region



Subnational data for decision-making; availability and quality

Immunization Information System (including Electronic Immunization Registry) with eHealth framework

Quality of VPD surveillance data with special reference to measles and rubella

Assessment of the health and non-health benefits of immunization in the Region within the purview of European Vaccine Action Plan for advocacy

Communicating and messaging data to different stakeholders

WHO Europe's effort to strengthen data management...1



Formation of Immunization and Surveillance Data team

- Positioning “Quality Data and Use” as the central theme in European Region
- Requisite expertise (epidemiologist, data manager, software developer) assembled together in one team
- Reiterates VPI's commitment to strengthen “data driven” decision-making



Initiative of “Data Validation Tool-Ver 1.0” [In-house]

- Validation of regional questions and core questions linked to European Vaccine Action Plan carried out using the tool
- First time ever in 2018, WHO Europe provided feedback to countries on critical data parameters related to JRF

WHO Europe's effort to strengthen data management...2



Sharing available information as a tool to improve data quality

- “Measles-Rubella Country Profile” developed through triangulation of data from different sources
- “Routine Immunization Profile” planned for development



Collaboration with UNICEF, European Centre for Disease Prevention and Control to improve data quality

An independent consultancy work has been commissioned to quantify the health and non-health benefits from implementing the regional vaccine action plan

Immunization data weaknesses

Immunization data collection is ongoing since late 1970s in WHO regions and HQ

In **2016-7** the **WHO immunization information systems and data management** was externally assessed



Key Findings (HQ/AFRO /EURO assessed)

- Rely on fragmented systems based on regional priorities
- High levels of redundancy of data management activities at each level
- Difficulties to access data
- Limited analytical capabilities
- “People-driven model”, highly dependent on specific individuals
- Heterogeneous and outdated technologies
- Sustainability and level of support are major issues

And ... Delays...



WHO Immunization Information System (WIISE) Project

Comprehensive VPD Surveillance

Current VPD surveillance is often fragmented and not all countries meet minimum recommended standards

September 2018: Released updated WHO VPD surveillance standards for 20 VPDs including first ever WHO standards on surveillance for rotavirus, typhoid, mumps and varicella

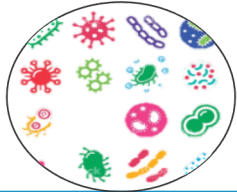
Developing global comprehensive VPD surveillance strategy

Global immunization program and surveillance data management system (WHO Immunization Information System (WIISE)) in development



VPD surveillance

Country, regional & global systems required to meet the **minimal recommended standards** for surveillance of a set of **priority** VPDs, with integration of surveillance functions across other diseases where possible



Includes?

- **More VPDs**, based on country priorities
- For most diseases, **individual-level data & lab-confirmation**



Design?

- **Mix** of nationwide case-based, aggregate & sentinel surveillance
- Based on VPD surveillance **objectives**



Strategy?

- **Integration/ adaption** of existing systems where possible
- Common **support functions & funding**



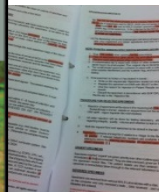
Use?

- Program monitoring, emphasis on **data visualization**
- Essential for EPI **decision-making & response**

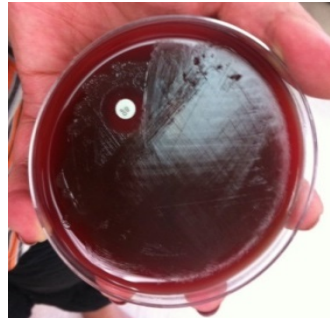
Strengthening laboratory capacities of the WHO Global IB-VPD Laboratory Network



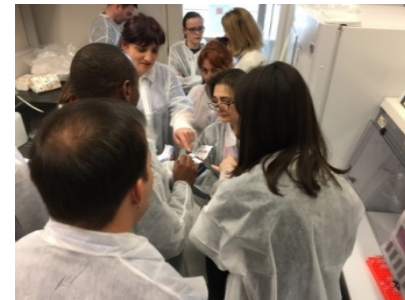
Assessments



Microbiology



Molecular diagnostics



Why do countries conduct vaccine-preventable disease surveillance?

Pre-vaccine introduction

- To describe disease **burden** to make decisions about vaccine introduction

Impact of introduction

- To monitor trends to **show impact and cost-effectiveness of vaccine** and vaccination program

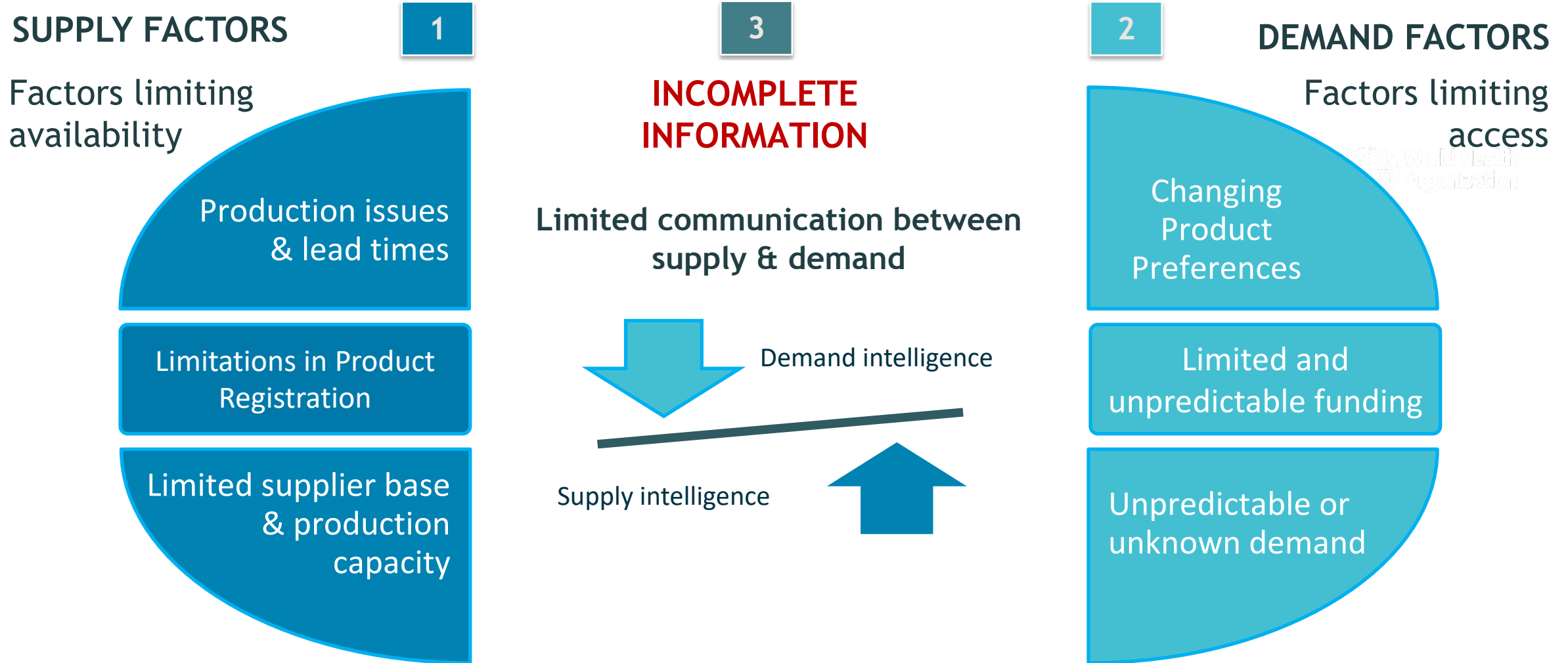
Long-term monitoring

- To monitor **changes in disease after introduction**
- To document control, elimination, and eradication

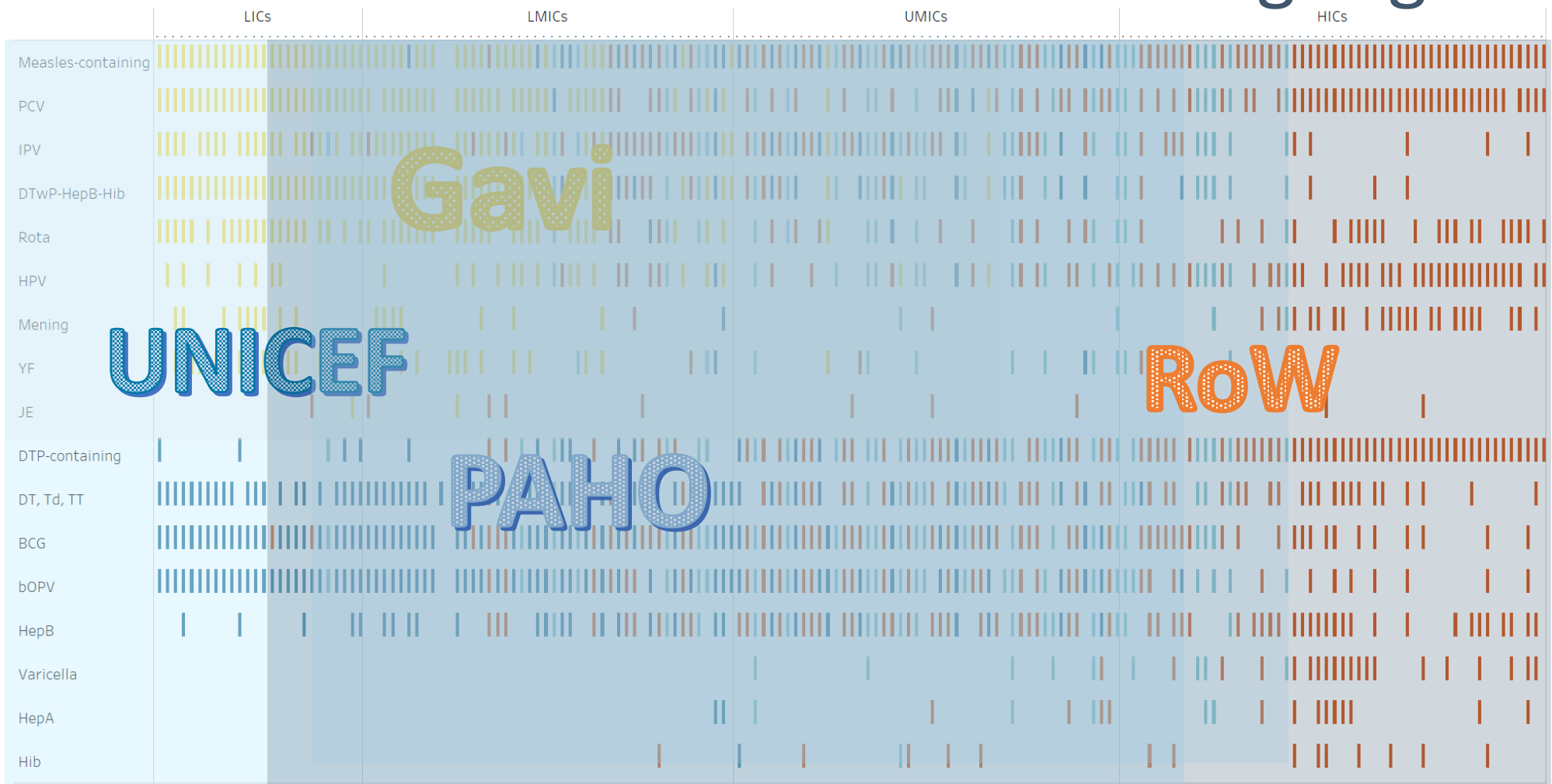
Across all phases

- Identify outbreaks for immediate action for effective reactive vaccination campaigns
- Components of surveillance can be leveraged to monitor other VPDs and other diseases without vaccines
- Identify unreached populations not getting vaccinated for targeted delivery strategies

Main factors influencing access to vaccine supply



Market Information for Access: the missing segment

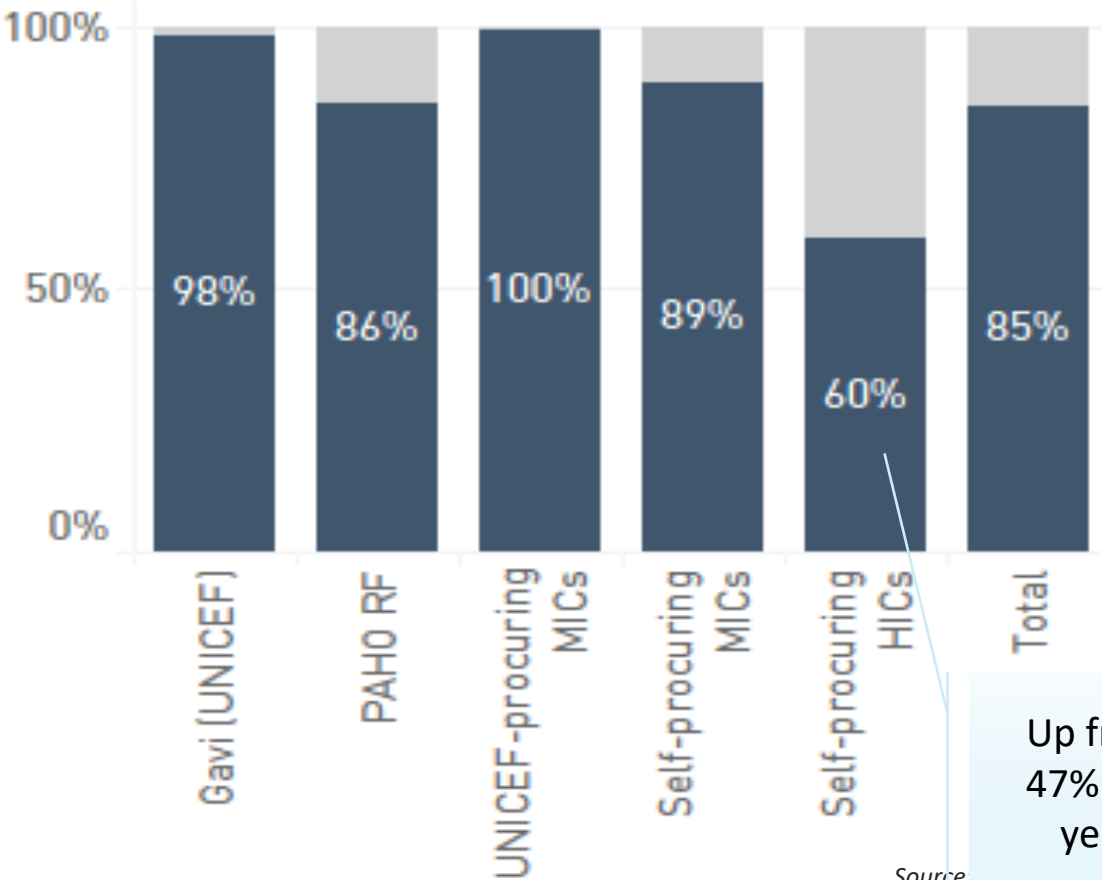
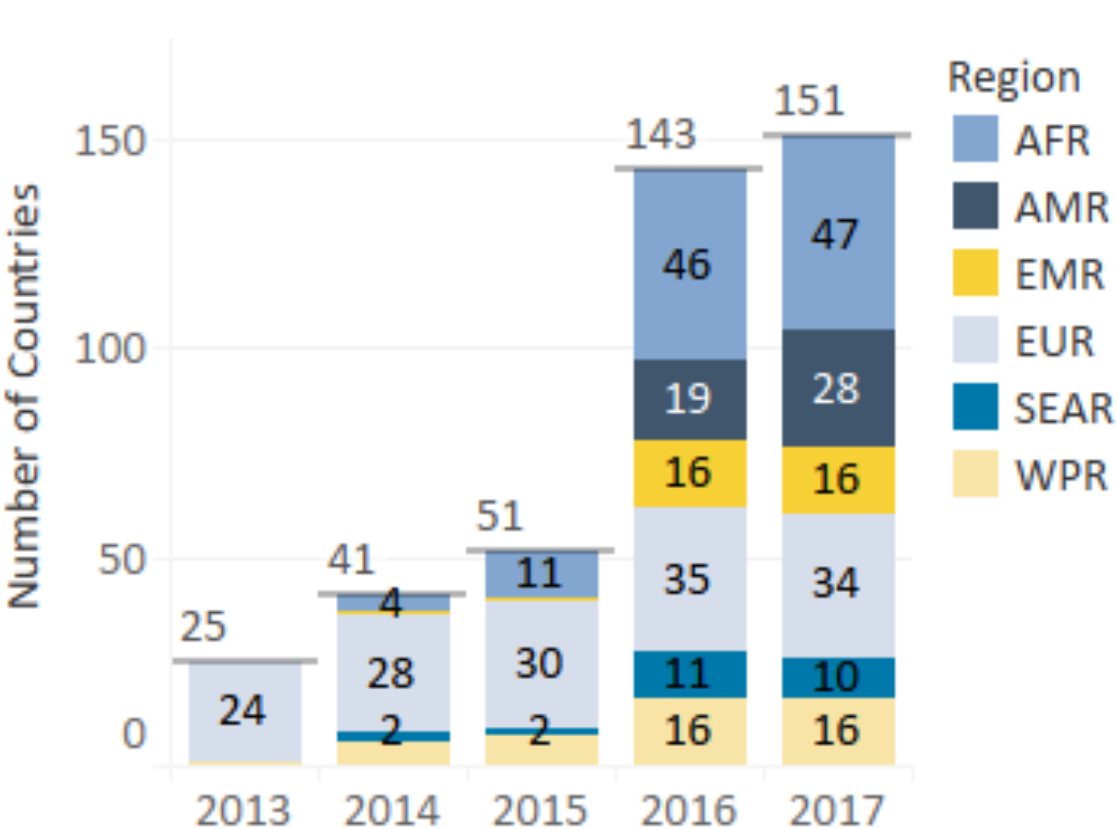


Procurement
■ Gavi-financed, UNICEF procured ■ UNICEF-procured ■ PAHO-procured ■ Self-procured

Great advances in vaccine market intelligence



Number of countries reporting over time by region & share by income group



Up from 47% last year

Source:

MI4A to inform global and local access strategies



 **MI⁴A**

MARKET INFORMATION FOR
ACCESS TO **VACCINES**



Enhance the **understanding** of global vaccine demand, supply and pricing dynamics and identify affordability and shortage risks

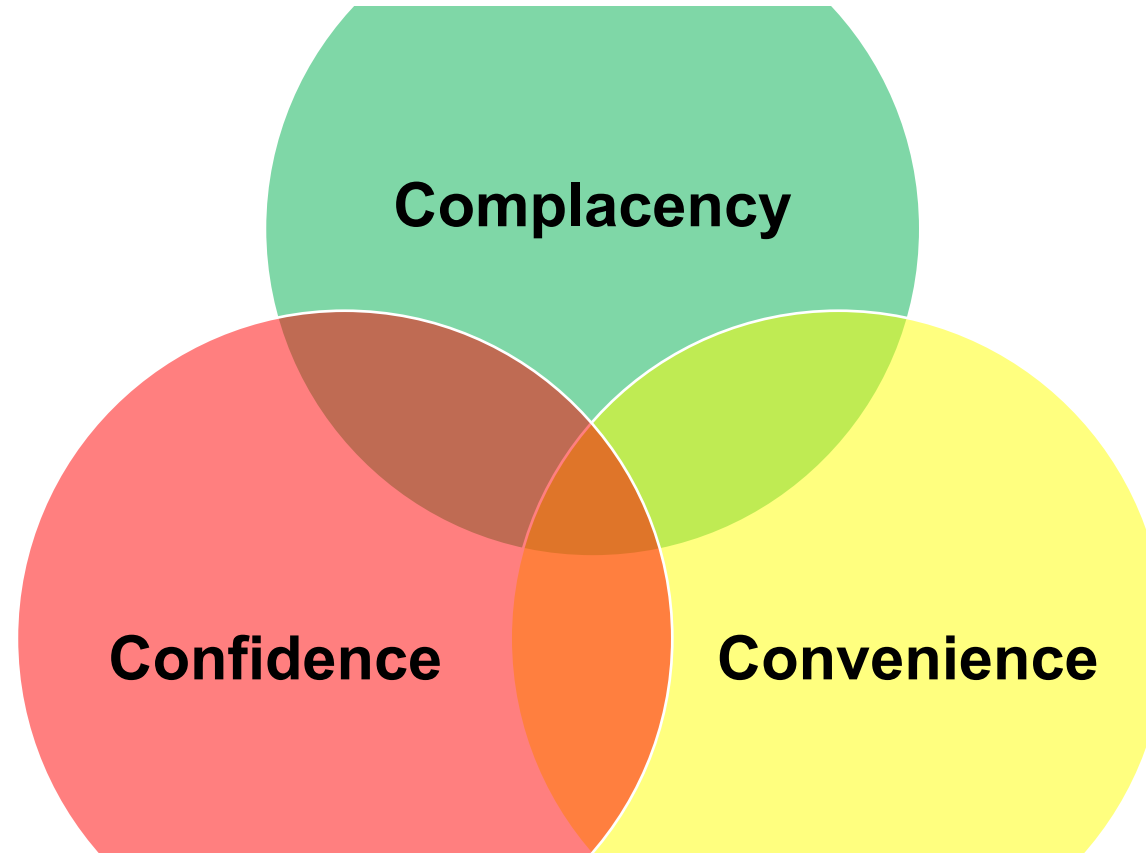
Convene global health partners to define strategies and guidance to address identified risks

Strengthen national and regional **capacity** for improved access to vaccines supply

MI4A builds on the success of the V3P project and on 2017 successful BCG and D&T pilots

Vaccine hesitancy: Definition and determinants

SAGE vaccine hesitancy working group (2013-2014)



**Vaccine hesitancy: a delay in acceptance or refusal of vaccines, despite available services.
Is complex and context specific, varying across time, place, and vaccine**

Global hesitancy data collected annually via the WHO/UNICEF Joint Reporting Form



Indicator 1: Reasons for vaccine hesitancy

- What are the top three reasons for hesitancy in 2016?
- Is this response based on an assessment or is it an opinion?



Indicator 2: % of countries that have assessed the level of hesitancy at national or subnational level

- Has there been an assessment at national or subnational level in the last 5 years?
- If yes, please specify the type, year, and provide any references

Globally reported data on hesitancy

(Joint Reporting Form, 2014-2017)



	2014	2015	2016	2017
Countries that submitted the JRF	180	183	184	191
Countries that provided at least one reason for hesitancy	73% (131/180)	79% (145/183)	83% (152/184)	83% (159/191)
Based on an assessment	29%	36%	33%	37%

Is hesitancy increasing?

- Hesitancy has always existed, however today's information environment may make it more visible
 - Social media activity may be increasing, however it reflects sentiment (≠ behaviour)
 - Factors most likely responsible for outbreaks today:
 - Historic programme weaknesses, e.g. barriers to access
 - Alterations in VPD epidemiology, e.g. measles
 - Safety scares/events, rightly or wrongly associated with vaccination
 - Population movement and urbanisation
 - ***Insufficient evidence*** to conclude that there is global increase in refusal and delays
- ***Standardized and validated measures of hesitancy (not only confidence) at a population level are required ... and efforts are being initiated!***

The biggest pandemic risk? Viral misinformation



A century after the world's worst flu epidemic, rapid spread of misinformation is undermining trust in vaccines crucial to public health, warns Heidi Larson.

Heidi J. Larson 

- "I predict that the next major outbreak — whether of a highly fatal strain of influenza or something else — will not be due to a lack of preventive technologies. Instead, emotional contagion, digitally enabled, could erode trust in vaccines so much as to render them moot. The deluge of conflicting information, misinformation and manipulated information on social media should be recognized as a global public-health threat"

Going forward...

Thank you