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MID-TERM REVIEW:
Regional Strategic Plan for Immunization
2014 - 2020

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Brazzaville, 30 November 2017

ACRONYMS

ADI	Addis Declaration on Immunization
AEFI	Adverse Events Following Immunization
AFP	Acute Flaccid Paralysis
ALMA	African Leaders Malaria Alliance
ARCC	Africa Regional Certification Commission
bOPV	Bivalent Oral Polio Vaccine
cMYP	Comprehensive Multi-Year Plan
CRS	Congenital Rubella Syndrome
CSO	Civil Society Organization
cVDPV	Circulating Vaccine-Derived Poliovirus
DQ	Data Quality
DTP	Diphtheria-Tetanus-Pertussis vaccine
EPI	Expanded Program on Immunization
EVM	Effective Vaccine Management
EVMA	Effective Vaccine Management Assessment
EVM IP	Effective Vaccine Management Improvement Plan
fIPV	Fractional IPV
GPEI	Global Polio Eradication Initiative
GVAP	Global Vaccine Action Plan
HPV	Human Papillomavirus Vaccine
ICC	Interagency Coordinating Committees
IPV	Inactivated Polio Vaccine
JRF	Joint Reporting Form
MNT	Maternal and neonatal tetanus
MCV	Measles Containing Vaccine
mOPV	Monovalent OPV
MTR	Mid-Term Review
NGO	Non-Governmental Organization
NITAG	National Immunization Technical Advisory Group
NRA	National Regulatory Authority
OPV	Oral Polio Vaccine
PIE	Post-Introduction Evaluation
PBM	Pediatric bacterial meningitis
PIRI	Periodic Intensification of Routine Immunization
RED	Reaching Every District
RSPI	Regional Strategic Plan for Immunization
RVAPs	Regional Vaccine Action Plans
SDGs	Sustainable Development Goals
SHA	System of Health Accounts
SIA	Supplementary Immunization Activity
tOPV	Trivalent Oral Polio Vaccine
UHC	Universal Health Coverage
VPD	Vaccine Preventable Disease
WPV	Wild Poliovirus
WHO	World Health Organization
RITAG	Regional Immunization Technical Advisory Group
2YL	Second Year of Life

EXECUTIVE SUMMARY

The Regional Strategic Plan for Immunization (RSPI) for the African region was adopted, in 2014, by the 64th session of the WHO Regional Committee for Africa with the goal of achieving universal immunization coverage and reducing mortality and morbidity from vaccine preventable diseases (VPD) within the WHO African Region by the end of 2020. The plan was developed in line with the Global Vaccine Action Plan (GVAP), approved by the World Health Assembly in 2012, which aims to prevent millions of deaths by the end of the Decade of Vaccines in 2020.

In January 2017, Heads of State from across Africa endorsed the Addis Declaration on Immunization (ADI). This commitment from the highest level of government to ensure that everyone in Africa, irrespective of where they live can access vaccines, provides much needed momentum to accelerate immunization efforts in the region. The commitment is leveraged by implementing the declaration's roadmap and taking into account the current state of immunization in the region.

Significant progress has been made in the region during the past three years particularly regarding the introduction of new vaccines. By end of 2016, all 47 countries in the region had introduced Hepatitis B and Haemophilus influenzae type b vaccines. Furthermore, 39 countries have introduced the pneumococcal conjugate vaccine (PCV); 32 countries have introduced the rotavirus vaccine; and 20 countries have introduced the rubella-containing vaccine in routine EPI services. All countries in the region met the set timelines for the global switch from trivalent to bivalent oral polio vaccine and, where supply allowed, introduced inactivated polio vaccine, thus reducing the risk of vaccine-derived polioviruses (VDPV) and contributing to global efforts to eradicate polio. Despite this progress, immunization coverage in the region remains below the expected target of 90% coverage at national level and one in five children in Africa still lacks access to all life-saving vaccines. The majority of the un- and under-immunized children live in three large countries: Nigeria, Ethiopia and the Democratic Republic of Congo (DRC) and immediate focused remedial actions are required there.

In October 2017, a mid-term review (MTR) panel appointed by WHO AFRO met in Brazzaville, Congo to review progress against the RSPI and provide recommendations aimed at supporting countries to achieve the 2020 regional objectives. The panel undertook a thorough desk review of progress and challenges experienced in the region, and provided the recommendations presented herein. The MTR panel assessed the data reported by countries to the WHO AFRO from 2014 to 2017.

The panel found that progress against the four Strategic Objectives as laid out in the RSPI is limited. Only one of the eight 2017 milestones in

Strategic Objective 1:

To increase and sustain high vaccination coverage

was reached (i.e. number of countries to introduce the rotavirus vaccine). At the time of review, coverage of the third dose of pentavalent vaccine (Penta3) and the first dose of Measles Containing Vaccine (MCV1) has not reached 90% nationally in at least 25 countries and only six countries have introduced the Human Papillomavirus (HPV) vaccine. Reporting on Adverse Events Following Immunization (AEFI) is irregular and 16 countries have reported stock-outs of vaccines or supplies at the district level lasting for more than one week, where the target is less than 10 countries reporting such stock-outs. Less than half of the countries in the region have established a National Immunization Technical Advisory Group (NITAG) of which only 13 meet all WHO criteria for a functional NITAG.

Whilst the region met the target to withdraw OPV type 2 vaccine, progress against

Strategic Objective 2:

To complete the interruption of wild poliovirus transmission and ensure virus containment

is suboptimal and the region is not on track to meet this objective. Seven countries still need to implement measures for containment of wild polioviruses and circulating vaccine-derived polioviruses (cVDPVs) and 13 countries using OPV still have to introduce at least one dose of IPV – the latter being due to a global shortage of the vaccine. None of the six focus countries have achieved the targeted 10% annual increase in DTP3 coverage in 80% of their high-risk districts.

Progress against

Strategic Objective 3:

To eliminate measles and advocate for the elimination of rubella and congenital rubella syndrome

is similarly slow. Only six of the targeted 25 countries have reached the MCV1 coverage target required for elimination of at least 95% nationally and only four countries achieved MCV1 Supplementary Immunization Activities (SIA) coverage of at least 95% in every district. The region did however exceed the target of rubella-containing vaccine introduction with 20 countries having introduced this vaccine in the routine EPI.

None of the 2017 milestones for

Strategic Objective 4:

To attain and maintain the elimination/control of other vaccine preventable diseases

have been met. Whilst 38 countries have validated maternal and neonatal tetanus (MNT) elimination, elimination of the disease is at risk in two priority countries: Central African Republic and South Sudan. Only 22 of the 31 countries at risk for yellow fever have introduced the vaccine and only one of these countries has achieved more than 90% coverage. Five of the targeted 25 countries within the meningitis belt still need to introduce MenAfriVAC© through campaigns and one of the five targeted countries remains to include the vaccine in its routine immunization schedule.

Only three of the 16 mid-term Strategic Direction milestones were achieved.

The Strategic Directions, which are in essence the RSPIs enabling factors, are process indicators, designed to identify root cause enablers and constraints. However, the definition of these indicators is often not clear, resulting in an inability to clearly measure progress; the panel recommends these indicators are reviewed.

Population-based surveys indicating the public perception of the value of immunizations were conducted as part of

Strategic Direction 1:

All countries commit to immunization as a priority.

However, the countries in the region failed to meet the targets related to reviewing policies, laws and regulations in support of immunization; constituting national stakeholder consultations on immunization; and conducting mid-term reviews of their accomplishments and shortcomings and adjusting their multi-year plans accordingly. The panel remarked that the indicators do not cover the quality of those plans and policies or, more importantly the key aspects of their operationalization and the regular monitoring of their implementation, which should result in annual updates to operational plans.

The panel recommends that the indicators for

Strategic Direction 2:

Individuals and communities understand the value of vaccines and demand immunization as both their right and responsibility are revised. Progress against this direction is limited and the indicators measured do not capture how demand and the rights of communities can be measured.

At the same time,

Strategic Direction 3:

The benefits of immunization are equitably extended to all requires countries to implement a microplanning approach to reach every individual, and develop specific approaches to reach new eligible populations. The region is making good progress in the development of plans and approaches, however poor coverage indicates that either plans do not address the root causes that prevent immunization to be available to all people, across the life-course, regardless of where they live or that existing plans are not implemented, possibly due to lack of resources.

Mauritania, Chad, Niger, Nigeria, Cameroon, CAR and Mozambique
Angola, Chad, DRC, Ethiopia, Nigeria and South Sudan

Data for

Strategic Direction 4:

Strong immunization systems - including surveillance - are an integral part of a well-functioning health system is not routinely captured, making it difficult to measure the engagement towards a Universal Health Coverage (UHC) approach. Whilst some efforts have been made to formulate plans to curb the burden of disease through comprehensive approaches, progress at country-level is limited. Although 27 of the 47 countries have conducted a mid-term assessment of their surveillance systems, there is no consistent measure of the quality of these assessments. Further, 36 countries have established an effective case-based surveillance system for Vaccine Preventable Diseases (VPDs), exceeding the target of 30, however these surveillance systems are largely dependent on polio operational, human and financial resources and there is a need to further enhance integrated surveillance activities.

Strategic Direction 5:

Immunization programs have sustainable access to long-term funding and quality supplies calls for domestic resources to be allocated to immunization programs in the face of the decrease of external funding as a result of the Global Polio Eradication Initiative (GPEI) ramp-down and Gavi, the Vaccine Alliance transition. Forty-one of the 47 countries in the region have reviewed their budgets and adjusted their plans accordingly, and 43 countries had a line item in their national budgets for vaccines and immunization between 2014 –2016, however the timely availability of cash for immunization is not given nor monitored and the region continues to remain dependent on external funding sources. Thirty-three of the targeted 35 countries conducted a vaccine supply management assessment and improved their supply chains between 2014 and 2017, however only two countries are meeting the 80% Effective Vaccine Management (EVM) criteria related to storage capacity, maintenance, stock management and vaccine distribution.

Only two countries in the region have a budget line for implementation research in their cMYPs. However, it is recommended that the indicators for

Strategic Direction 6:

Country and regional communication, research and development innovations maximise the benefits of immunization be reviewed in order to harmonize information on research. Whilst training on data quality assessments and Data Quality Improvement Plan (DQIP) development has been provided to all countries between 2014 and 2017, in-depth data quality reviews took place in only nine countries.

In view of the limited amount of time remaining before completion of the 2014 – 2020 plan, the panel acknowledged that:

- **Several of the shortcomings can be addressed if actions are focused on critical areas**
- **If approaches and interventions are geared towards the specificity of different country needs,**
- **If there is strong political support and if efforts are concentrated on areas where tangible results can be achieved by 2020.**

Limited resources should be optimised and not spread among too many areas, some of which, while fully justified, may not serve the immediate objectives of the RSPI. It is the panel's view that achieving success with the present RSPI will create positive dynamics for the subsequent decade facilitating the implementation of interventions to tackle additional areas which will be, by necessity, deprioritised for the next three years.

The panel identified the following six priority areas and defined related recommendations that can, in the panel's view, change the trajectory of immunization in the African Region. Details on these recommended actions are available in the report. These actions should be reviewed alongside Annex B which states the suggested timelines, roles and responsibilities for each action item.

Recommendation 1:

Leverage the Addis Declaration on Immunization (ADI) commitments

The ADI demonstrates an unprecedented show of political commitment from the leadership of the countries in the region. Leveraging such a commitment should be the centrepiece of the future regional and national strategies as well as the main tool to ensure alignment of all partners' effort in the region to the priorities and actions endorsed by the countries. Recommended actions include:

a) WHO to convene annually the African Regional Stakeholder group to be jointly accountable for the implementation of the RSPI MTR recommendations.
b) WHO to identify a regional "face" of immunization.
c) Countries to strengthen their Interagency Coordinating Committees (ICCs), or similar mechanisms and expand to include partners beyond the health sector to regularly review implementation of policies and plans, and to further support National Immunization Technical Advisory Groups (NITAGs).
d) All partners to ensure alignment of plans and investments with RSPI MTR objectives and recommendations.

Recommendation 2:

Define community-centred and country-specific approaches to improve equitable access

Reaching the underserved populations of the region presents one of the greatest challenges to reaching coverage targets and eliminating disease. Underserved populations are located in different settings – urban slums, nomadic and displaced populations, remote difficult-to-reach areas, neglected regions and marginalized communities – often with specific needs and requiring specific strategies. Recommended actions include:

a) WHO to finalize an approach to supporting and managing immunization programs according to their "level of maturity".
b) Countries to strengthen implementation and monitoring of all five pillars of the Reaching Every District (RED) approach at the community level with targets to be included in country plans.
c) Countries to further engage civil society organizations (CSOs) and community-based organizations to encourage social accountability and focus on demand creation.
d) Countries to re-design or strengthen vaccine management in light of root-cause assessments performed during EVM assessments.
e) WHO to ensure immunization is part of emergency coordinating mechanisms and to ensure access to Gavi prices for vaccines and other related commodities for populations affected by emergencies.

Recommendation 3:

Foster a Universal Health Coverage approach that puts immunization at the core of primary health care

The success of immunization programs is closely linked to the functioning of the overall health system. Immunization programs benefit from strong health systems and, conversely, specific health interventions can benefit from the high coverage generally achieved by immunization services. Each contact with a health care professional is an opportunity for vaccination, and vaccination points create opportunities to inform about, diagnose and treat other health concerns and diseases. The introduction of new vaccines beneficial to school children, adolescents and adults at specific risk creates opportunities to reach broader age groups and prevent more illness throughout the life course. Recommended actions include:

a) Countries to adopt a life-course approach to health, including infant immunization and extending to the 2nd year of life.
b) Countries to regularly perform missed opportunity assessments and to implement resulting plans.

Recommendation 4:

Improve availability and use of appropriate quality data for decision

Immunization program data are a key element informing activities and strategies. Data are systematically collected and reported at the national level in all countries in the region. However, the quality of vaccine coverage estimates and other indicators remains limited in many countries. With a focus on delivering the RSPI objectives and in view of the short timeframe it will be essential to focus on particular information required to take decisions in priority areas in the different country settings. Recommended actions include:

a) WHO to support countries to (1) periodically update their comprehensive multi-year strategic plans (cMYP) for immunization; and (2) define and update their specific information requirements.
b) Countries to establish Data Quality Teams and perform regular quality analysis with subsequent "Data Quality Improvement Plans".
c) Countries to develop SOPs for implementation of interoperable data systems.
d) Countries to strengthen surveillance systems to ensure that policy and programmatic decisions are based on up-to-date data to optimize performance and impact.
e) Countries to perform costing and needs analysis for VPD surveillance - and ensure sufficient domestic budget.

Recommendation 5:

Involve new players and use new approaches to enhance human resource capacity

The success of any program is heavily reliant on the personnel that operates them. Adequate levels of competency, strong managerial skills and well-defined accountability frameworks are all pre-requisites for a well-performing health work-force. The financial and managerial shortcomings of the public sector often represent a major challenge in achieving results. Recommended actions include:

a) WHO to provide guidance on defining competency models, assessing and developing training curricula and using a variety of learning approaches in partnership with academic institutions.
b) WHO to develop guidelines for a system of exchange secondments for technical and or managerial resources for country implementation based on identified needs.
c) Countries to implement or scale-up accountability frameworks for health workers.

Recommendation 6:

Employ innovative instruments to sustain financing

Countries are required and expected to take on more financial responsibilities for their immunization systems particularly in light of the Gavi transition and GPEI ramp down. This should result from a combination of increasing domestic investments, innovative financing mechanisms that address specific financing bottlenecks as well as focused research on the efficiency of immunization and health systems.

Countries at different stages of transition from Gavi support will require tailored strategies. Recommended actions include, but are not limited to:

a) Countries to establish fully budgeted GPEI and Gavi transition plans.
b) World Bank / African Development Bank and/or other financial institutions to identify short-term grants and/or bridging loans solutions.
c) World Bank / African Development Bank and/or other financial institutions to identify financial instruments to ensure cash-flow stability.
d) Optimization of funding from domestic sources (both governmental and non-governmental) and from Official Development Agencies (ODAs).

The mid-term review of the RSPI serves to highlight the pressing areas where implementation should be strengthened. Its intention is not to reformulate the RSPI, which remains valid until 2020, but to single out specific adjustments to this plan to enhance the likelihood of achieving its goals. To this end, the panel suggested a revision of a few of the Strategic Direction indicators. Considering that only three of the 20 Strategic Objective milestones and four of the 16 Strategic Direction milestones were achieved as planned, it is likely that if countries in the region do not scale-up their efforts, the RSPI milestones will not be met by 2020.

The review panel believes that if the recommendations presented in this report are implemented, by all stakeholders, and with targeted and unyielding attention, investments of human and financial resources and follow-up, the region may succeed in achieving several of its 2020 goals and minimize the gap for the ones where achievement may not immediately be possible. Alignment of all the efforts and investments of countries, implementation partners and donors alongside the six recommended areas and the identified actions will be a critical factor for achieving sustainable progress in the delivery of the benefits of immunization in the region.

CONTEXT

The Global Vaccine Action Plan (GVAP) was adopted by all World Health Organization (WHO) Member States at the 65th World Health Assembly in May 2012. It sets out the vision and an action framework for the Decade of Vaccines (DoV) 2011–2020 aiming at "a world in which all individuals and communities enjoy lives free from vaccine-preventable diseases" and the mission of "improving health by extending by 2020 and beyond the full benefits of immunization to all people, regardless of where they are born, who they are, or where they live". Reaching the GVAP goals depends on the successful implementation of the objectives and activities of six Regional Vaccine Action Plans (RVAPs) that are aligned with the global goals and extend these to the regional specificities.

The Regional Strategic Plan for Immunization (RSPI) 2014 – 2020, is geared towards member states and partners (including but not limited to WHO), developed based on the GVAP and taking into account the nuances of the WHO African region. The monitoring and evaluation components of the Regional Plan thus builds on GVAP core indicators, to which are added indicators particularly relevant to the regional strategy. In September 2014, the 64th session of the WHO Regional Committee for Africa adopted the RSPI. It aims to achieve universal immunization coverage within the WHO African Region by the end of 2020.

The RSPI measures progress against the following four objectives:

1. To improve immunization coverage beyond the current levels;
2. To complete interruption of poliovirus transmission and ensure virus containment;
3. To attain the elimination of measles and make progress in the elimination of rubella and congenital rubella syndrome (CRS); and
4. To attain and maintain elimination/control of other vaccine-preventable diseases.

In order to achieve these, the RSPI outlines key approaches for implementation, largely driven by the implementation of the Reaching Every District (RED) strategy. This includes adequate planning and management of resources through detailed microplanning in order to reach equitably all targeted populations; engaging with communities to stimulate demand; ensuring adequate human and institutional capacities; and monitoring and using data for action.

Progress against these objectives has however been slow, as reported on in the 2016 Regional Report on Progress towards GVAP-RVAP goals. While the African child mortality rate for vaccine-preventable diseases (VPDs) has considerably declined over the past decade, it remains more than double the global average mortality rate – more than half a million children under the age of five years die of VPDs in Africa each year.

In January 2017, Heads of State from across Africa signed the Addis Declaration on Immunization (ADI) and committed to ensuring that everyone in Africa, no matter who they are or where they live, can access equitably all the required vaccines. Further, it emphasized a needed shift in population's perception of the benefits of and entitlements to immunization, moving from expressing demands for these products rather than accepting offers extended to them by service providers. The intent underlying this shift is to cast immunization as a component of the human rights to health, thereby setting obligations to be met by the state towards its people. The ADI is recognised as a political and advocacy instrument which can be used to support the implementation of the RSPI at the highest level of government. The recommendations contained herein support the roadmap for implementation of the ADI.

Global Vaccine Action Plan – Annex to the GVAP Secretariat Annual Report 2016: Progress Report for the African Region

In line with one of the recommended actions of the RC64 resolution, upon request by the Regional Immunization Technical Advisory Group (RITAG), and in order to assess the progress achieved so far, the Regional Office of WHO commissioned and coordinated an independent evaluation of the RSPI in October 2017. The purpose of this review was to identify successes and shortcomings and provide recommendations aimed at supporting countries in the achievement of the 2020 regional objectives. An end-term review will be done in 2020 that will provide information to inform the RSPI for the next period.

The independent review panel met for a one-week face to face meeting in Brazzaville, Congo from 2 to 6 October 2017. WHO staff from the regional office provided secretariat support and input to an extensive desk-review analysis (conducted by MMGH) for deliberation at the review, and with selected countries invited to contribute. This analysis, alongside a review of bottlenecks and root causes, is included in the annexes. The purpose of the independent review was to evaluate achievements; identify bottlenecks; review level of ownership, allocation of resources, integration of services and equity of service provisions; assess coordination of stakeholders; and finally, make recommendations to support the Region in achieving its RSPI targets. The panel presented its findings to the RITAG on 6 December 2017, following which RITAG members comments were included in the report which was adopted electronically by the RITAG in mid-February 2018. The report will be submitted to the WHO AFRO Regional Director before official communication to Member States.

AFR/RC64/R4; Regional Strategic Plan for Immunization, 2014-2020; November 2014.

SUMMARY AND ANALYSIS OF PROGRESS

The Regional Strategic Plan for Immunization (RSPI) 2014 – 2020 aims to ensure that the goal to provide universal immunization coverage within the WHO African Region is achieved as part of the broader Sustainable Development Goals (SDG) sanctioned effort to achieve Universal Health Coverage (UHC). The plan includes strategic objectives, milestones and targets, and strategic directions.

The strategic objectives reflect the expected outcomes and impacts of the strategy against milestones and targets whilst the strategic directions are the enabling factors which need to be in place in order for countries to achieve the objectives.

This section discusses progress against the objectives and directions as documented in the Global Vaccine Action Plan Annual Report 2016: Progress Report for the African Region as well as the presentations and deliberations at the MTR Review Panel meeting in Brazzaville, October 2017.

The review panel acknowledges that the quality of the review is dependent on the quality of the available information, representing a combination of self-reported administrative data through WHO/UNICEF Joint Reporting Form, WHO/UNICEF estimates, as well as other reporting mechanisms. Data was collected and analysed by the WHO AFRO team based on standard calculation methods for specific indicators. At times these data were validated by additional information sources, such as surveys, desk reviews of mutually agreed sets of documents or interviews with senior AFRO staff at the regional and country offices, however no country-based assessments were performed.

Annex A provides a summary of progress against each strategic objective and direction, and lists the countries that achieved each milestone.

STRATEGIC OBJECTIVES:

Strategic Objective 1: To improve immunization coverage beyond the current levels

No.	2016 - 2017 milestone	Status
SO 1.1	Coverage of Pentavalent 3 and MCV1 vaccines will have reached 90% nationally in at least 25 countries.	16/25
SO 1.2	40 countries will have introduced the pneumococcal conjugate vaccine (PCV)	39/40
SO 1.3	30 countries will have introduced the rotavirus vaccine	32/30
SO 1.4	25 countries will have introduced the HPV vaccine	6/25
SO 1.5	25 countries will regularly report AEFI of at least 10/100,000 surviving infants, and at least 50% of these events will be investigated and reported to national authorities within 2 weeks of occurrence	22/25
SO 1.6	Fewer than 10 countries will be reporting one or more stock-outs of vaccines or supplies lasting more than one week	16/47
SO 1.7	40 countries will have a NITAG	23/40
SO 1.8	At least 25 countries will have a functioning NRA	N/A

***Table1:** Progress of Strategic Objective 1 against RSPI 2017 milestones*

Only 16 of the targeted 25 countries have reached the RSPI 90% coverage target of Penta3 and MCV1 vaccines. Twenty countries in 2016 achieved the RSPI coverage target of >90% for DTP3 containing-vaccine; an increase from the 17 countries in 2015. Seventeen countries in 2016 achieved the MCV1 coverage of at least 90%; an increase from the 13 countries in 2015. The region's coverage for DTP3, Oral Polio Vaccine (OPV3) and MCV1 has however stagnated at approximately 74%, 73% and 72% respectively. This is largely due to low coverage in the three largest countries responsible for 38% of the total regional birth cohort. Contextual factors which negatively influenced coverage include multiple competing developmental priorities, gaps in country ownership, lack of community engagement, insecurity, low data reliability and practical use, limited logistics capacity, inadequate and uneven distribution of the workforce, and weak health systems aggravated by disease outbreaks in various countries like the Ebola Virus Disease, yellow fever, meningococcal meningitis, cholera, etc.

Targets for the introduction of new vaccines [pneumococcal conjugate vaccine (PCV) and rotavirus] have almost been met and vaccine impact could be demonstrated in several studies. Only six of the targeted 25 countries have however introduced the HPV vaccine. Countries are experiencing challenges in selecting appropriate HPV delivery strategy methods, with school-based implementation shown to be very expensive. Further, the estimation of the denominator of targeted girls is problematic (specifically out-of-school girls), and reaching these out-of-school girls proves difficult. Overall, there is limited public knowledge of HPV vaccines; there are some issues with private schools, and parents questioning the non-vaccination of boys.

Low HPV introduction rates are thus a combination of poor demand in some instances, barriers in accessing eligible girls, high vaccine prices outside of the Gavi realm, and global supply constraints - expected to continue until 2019.

Despite the successes in introducing those key life-saving vaccines, VPDs still account for the death of more than half a million children under five years of age every year in Africa – representing 56% of global VPD-related deaths. Yet the majority of these VPDs can be prevented by PCV and rotavirus vaccines, if introduced by all the countries. Some challenges regarding new vaccine introductions include cold chain and vaccine management (including vaccine supply) resulting in not offering vaccines on a daily basis, insufficient efforts or capacity to associate vaccines with strengthening of case management and to reduce missed opportunities for vaccination and affordability of vaccines in countries not supported by Gavi.

Forty countries reported having a system to monitor adverse events following immunization (AEFI) with 37 countries actually reporting them in 2016, albeit several of them still requiring substantial improvements before having in place a fully functional system. Twenty-two countries reported a minimum of 10 AEFI per 100 000 surviving infants in 2016. Approximately 73 000 AEFI were reported between 2012 and 2016, much below the expected number and primarily from six countries. Rotavirus vaccine (intussusception) safety monitoring is ongoing in 12 countries and preliminary findings are reassuring.

In 2016, 16 countries **reported vaccine stock outs** of BCG, MCV and/or pentavalent vaccines lasting more than one week at the district level, failing to meet the target of fewer than 10 countries reporting such stock outs. Based on the reported data, in 9 countries such stock outs led to the interruption of vaccination sessions for some antigens; it should be remarked that the quality of sub-national stock level data is problematic. The main reasons for stock-outs were operational funding delays at the district level, followed by global shortages, product registration issues, deficient forecast and procurement delays. Twenty-three countries have established a **National Immunization Technical Advisory Group (NITAG)** of which 13 meet the WHO criteria for a functional NITAG. Whilst having a **National Regulatory Authority (NRA)** is an RSPI indicator, a fully functioning NRA is not necessarily critically important for all countries, except for those manufacturing vaccines; hence this indicator is being revised. Twenty-four countries NRA's have authorized clinical trials and provide relevant oversight.

Nigeria, DRC and Ethiopia.
Nigeria, Sierra Leone, Burkina Faso, DRC, Cote d'Ivoire and Cameroon.

Strategic Objective 2: To complete the interruption of wild poliovirus transmission and ensure virus containment

No.	2016 - 2017 milestone	Status
SO 2.1	All countries will have implemented measures for containment of wild polioviruses and cVDPVs	40/47
SO 2.2	All countries using OPV will have introduced at least one dose of IPV	34/47
SO 2.3	OPV type 2 will have been withdrawn	47/47
SO 2.4	At least 10% annual increase in DTP3 coverage will be achieved in 80% of the high-risk districts for all 6 focus countries	0/6

Table 2: *Progress of Strategic Objective 2 against RSPI 2017 milestones*

The region has made substantial progress towards the eradication of poliomyelitis. It reported 128 wild poliovirus (WPV) cases in 2012 – more than half of the global burden – and only four cases in 2016 from an earlier undetected wild virus circulation in northern Nigeria. Since August 2016 no new case of WPV has been confirmed. Interventions which led to this renewed success include improving the quality of polio supplemental immunization activities, strengthening acute flaccid paralysis (AFP) surveillance, timely response to polio outbreaks and strengthening routine immunization, and the introduction of IPV.

Progress against the 2016 – 2017 milestones however is limited. These milestones were developed when assumptions regarding the polio eradication timeline were more optimistic. Phase 1a **containment** refers to the documentation of destroying wild polio viruses (WPV) and circulating vaccine-derived polio viruses (cVDPV) in all laboratories, whilst Phase 1b relies on the destruction of all OPV2-containing vaccines. The region has failed to meet this target, given that some national research laboratories are still reluctant to destroy all of their specimens. As a result of the global vaccine shortage, countries have not met the target for **IPV introductions**. Whilst supply should improve by 2018, IPV supply delays have created susceptible populations. In this context countries require further global coordination and guidance on IPV introduction and on the potential use of fractional dose of IPV (fIPV). Further, poor routine immunization coverage in some countries has resulted in cases of cVDPVs, as a result of persisting insufficient coverage of OPV1+3 in spite of widespread IPV use.

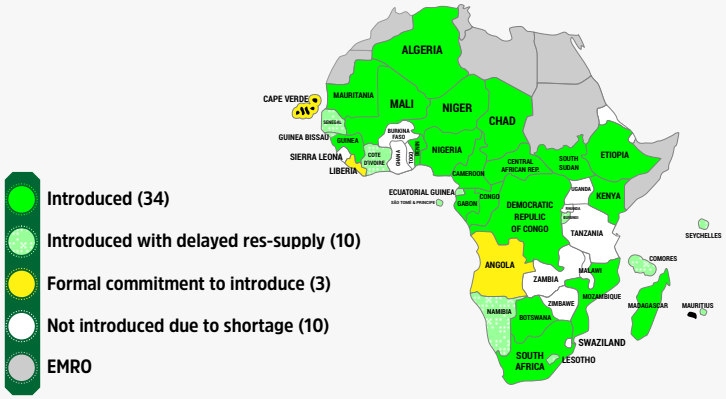


Figure 1: Status of IPV introduction, May 2017 [Source: GPEI and Routine Immunization in Figures, African Region 2012-2016 (2017)]

Whilst the **OPV type 2** withdrawal target was met, with all countries switching to bivalent OPV1+3 (bOPV) in a synchronized manner in Q2/2016, there was reintroduction of monovalent type 2 (mOPV2) into countries in response to the cVDPV2 occurrence. Further there is documented evidence of some mismanagement of mOPV2 stocks, and similarly, trivalent OPV (tOPV) that should have been destroyed following the switch to bOPV is still in circulation in limited areas. Stock audits are now being performed in selected countries.

The discovery of uninterrupted transmission of WPV1 in North-Eastern Nigeria in August 2016, in an area where indicators pointed towards good surveillance, has raised concerns as to whether virus transmission is being missed despite surveillance indicators apparently being met and what the implications are for sustaining zero transmission. Despite the fact that more than 12 months have passed since the last WPV1 case in Africa, the polio AFP surveillance indicators show persistent gaps in surveillance, often masked by reliance on district averages masking differentials across wards within districts. Challenges for polio eradication in the region are primarily linked to the insecurity affecting several areas that prevents a regular performance of immunization activities and affects the quality of surveillance with resulting severe gaps in data quality and low population immunity. The latter also due to weak routine immunization systems performance. Discussions are being held with governments in eight priority countries in order to mitigate risks associated with the ramp down of polio support with asset mapping being performed.

The GPEI transition has been designed to minimize risks by maintaining funding for the high-risk Lake Chad basin and marginally increasing funding for polio surveillance for all countries in the build-up to certification. The ramp down of polio investments does however present a risk for routine immunization and VPD surveillance. Despite the fact that the Polio Eradication and Endgame Strategic Plan 2013 – 2018 calls on countries to "strengthen routine immunization" and the significant investments in polio eradication, these efforts may not be contributing to improved routine coverage, but may have even had a counter-effect as polio alters the perceptions of how individuals feel they should receive vaccines e.g. believing it should come to them rather than being accessed through routine, facility-based routine services.

None of the six focus countries have reached the 10% increase in DTP3/Pentavalent3 coverage target. There is some evidence of coverage data misrepresentation in some countries and management action is being taken in these instances.

Strategic Objective 3: To eliminate measles and advocate for the elimination of rubella and congenital rubella syndrome

No.	2016 - 2017 milestone	Status
SO 3.1	MCV1 coverage will have reached at least 95% nationally in at least 25 countries	6/25
SO 3.2	MCV1 SIA coverage will be at least 95% in every district	4/42 SIAs
SO 3.3	At least 15 countries will have introduced the rubella-containing vaccine in routine EPI	20/15
SO 3.4	At least 28 countries will have introduced the MCV2 vaccine in routine EPI	26/28

Table 3: *Progress of Strategic Objective 3 against RSPI 2017 milestones*

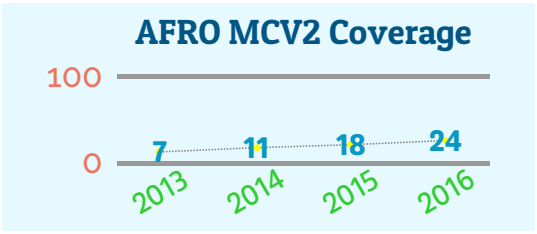
The region has failed to reach ***national coverage targets for Measles-Containing Vaccine*** (MCV1). Nigeria, Ethiopia and DRC are home to 50% of the children not receiving MCV1. Only six countries have MCV1 coverage of at least 95% required to sustain interrupted transmission, down from nine countries in 2013, and far from the target of 25 countries. Despite significant progress between 2001 and 2009 for MCV1 coverage rates (54% to 72%), MCV1 coverage levels in the region have now stagnated between 71% and 74% and it is highly unlikely that the region will meet the target for elimination of measles by 2020.

[7] *Angola, Cameroon, CAR, Chad, DRC, Ethiopia, Nigeria and South Sudan*
[8] *Angola, Chad, DRC, Ethiopia, Nigeria and South Sudan*
[9] *Mid-Term Review of the status of Measles Elimination by 2020*

Between 2012 – 2016, 393 million children were vaccinated in 43 Member states through Supplementary Immunization Activities (SIAs). SIAs are taking place every year in 16 – 18 countries and a total of 42 SIAs have been done since 2014; however only five of 18 post-campaign coverage surveys have shown 95% coverage and only four SIAs have reached 100% of districts with 95% coverage, raising questions about the appropriate planning and preparation of those activities.

Although 20 countries have introduced rubella-containing vaccine (RCV) in SIAs and routine EPI, exceeding the target, overall coverage in the region remains low. The disease is not well recognised and often does not have a local name but is rather categorized as a fever and rash. As a result, it has been challenging to sensitize programs to collect the data necessary to consider it as a new vaccine.

Twenty-six countries in the region have introduced MCV2 in their National Immunization Programs (NIP). The WHO Position Paper was recently updated resulting in a revision of the Gavi policy and the removal of the MCV1 coverage threshold restrictions for introductions. Furthermore, in 2015, Gavi approved broader support for measles and rubella vaccine, which should facilitate more introductions of MCV2. Regional coverage levels for this vaccine are however very low at 24%.



Twenty countries met the core measles surveillance indicators. There is a shortage of operational funding for this surveillance including laboratory support. The measles laboratory network relies heavily on the polio infrastructure for performing case-based surveillance, which now also includes Yellow Fever. The GPEI ramp down is thus threatening progress against the control and elimination of these diseases.

By end of 2016, 13 countries were nearing measles elimination; 9 countries were on track for elimination by 2020, while 25 countries were at risk of not achieving the elimination goal. Major factors which impeded progress include: failure to improve routine immunization coverage levels; insecurity in some Member States; delays in partner and local funding for SIAs; and failure to achieve the targeted SIAs coverage at national level and/or subnational levels. These factors were compounded by inaccurate population denominators.

[10] *Global Vaccine Action Plan – Annex to the GVAP Secretariat Annual Report 2016: Progress Report for the African Region*
[11] *Gavi support now extends to cover: the first dose of MR vaccine, the second dose of MR or Measles vaccine, SIAs in all Gavi eligible countries, outbreak response.*
[12] *Routine Immunization in Figures, African Region 2012 – 2016 (2017)*
[13] *Non measles febrile rash illness rate and % districts reporting 1 suspected case with blood specimens*
[14] *Algeria, Cape Verde, Sao Tome and Principe, Seychelles, Mauritius, Rwanda, Ghana, Eritrea, Zimbabwe, Lesotho, Swaziland, Tanzania and Namibia*
[15] *Botswana, Kenya, Malawi, Cameroon, Mozambique, Uganda, Zambia, Comoros and Cote d'Ivoire*

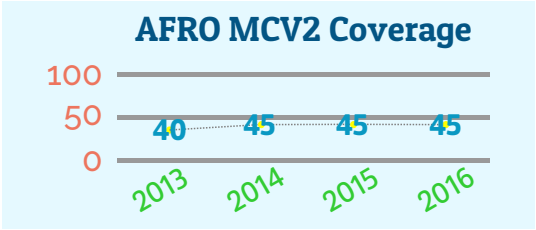
Strategic Objective 4: To attain and maintain elimination/control of other vaccine preventable diseases

No.	2016 - 2017 milestone	Status
SO 4.1	42 countries will have achieved and validated the elimination of maternal and neonatal tetanus	38/42
SO 4.2	31 countries at risk for yellow fever will have introduced the yellow fever vaccine, and 10 countries will have achieved more than 90% coverage with the vaccine	22/31 introduced 1/10 >90% coverage
SO 4.3	All countries within the meningitis belt will have introduced MenAfriVAC© through campaings and 5 of them will have introduced through routine immunization	20/25 4/5
SO 4.4	Sero-prevalence of HbsAg among children under five will not be higher than 2% in at least 20 countries	Data not available

Table 4: *Progress of Strategic Objective 4 against RSPI 2017 milestones*

Thirty-eight countries have validated **maternal and neonatal tetanus (MNT) elimination**, however elimination by 2020 is at risk due to two priority countries: Central African Republic and South Sudan. Conflict and geographic accessibility compromise the provision of consistent quality services in remote districts. As a result low performing districts compromise the validation of MNT elimination for the whole country. The program faces challenges in mobilizing partnerships and resources as donors appear not to sufficiently prioritize this work, although it is an issue which disproportionally affects remote, underserved and poor populations. Eighteen countries are now using Tetanus-Diphtheria vaccine (Td) instead of Tetanus Toxoid (TT) for children 4 years of age and for women of childbearing age and the new WHO position papers on Tetanus and Diphtheria are calling for a more widespread implementation of this product switch, including use in pre-school and school platforms.

An epidemiological analysis of age- and location-specific data on recent diphtheria outbreaks has not been performed, although it could help understand the dynamics of the spread of diphtheria and inform about gaps in immunization coverage with the aim of adapting local vaccination schedules.



Twenty-two of the targeted 31 countries have **introduced the Yellow Fever (YF) vaccine in routine immunization**. The global supply situation remains problematic affecting the ability of scaling up routine immunization and stock-outs of vaccine occurred in 10 countries in 2016. As a result, 11 countries have low immunization coverage (<70%), six countries have moderate coverage (70-80%), there is no yellow fever vaccine in routine immunization in nine at-risk countries and only one country is achieving >90% coverage. MCV1 and YF vaccines are delivered simultaneously but there is a significant difference in coverage between the two vaccines, particularly in Congo, DRC, Chad and Burkina Faso, partly due to vaccine shortages. Coverage in the region has stagnated at 45% and there is an apparent shift of disease burden from West Africa to Central and East Africa. Because of the supply problems, recent large outbreaks in Angola and DRC necessitated the use of fractional dosing, without major implementation issues.

The strategy to introduce **MenAfriVAC©** vaccine against meningococcal meningitis group A involved an initial mass campaign for ages 1 – 29 years. Twenty of the targeted 25 countries have conducted these campaigns, and four of the targeted five countries have introduced the vaccine in their routine immunization programs. Routine introduction has often been delayed due to the time required to obtain countries' regulatory approval for use in infants. Whilst studies have documented that the disease burden of meningitis due to group A meningococcal meningitis has substantially decreased, increasingly there are outbreaks caused by other serogroups (e.g.: serogroup C in Nigeria). Irrespective of the fact that, at the moment, there is no documented evidence of serogroup replacement, an affordable multivalent conjugate[16] vaccine is needed to reduce the risk of meningococcal outbreaks in the region.

Most countries have not yet introduced the recommended Hepatitis B vaccine birth dose, largely because Hepatitis B vaccine is included in the pentavalent vaccine and there is little appetite to introduce a separate monovalent vaccine. Transmission from mother to child is likely still occurring. Unfortunately, data on the **sero-prevalence of HbsAg** among children under five is not systematically available, and thus progress against this indicator cannot be measured at this time. Furthermore, the absence of the appropriate evidence is an obstacle for the implementation of targeted advocacy efforts.

STRATEGIC DIRECTIONS

The Strategic Directions, as laid out in the 2014 - 2020 RSPI, serve to frame the processes required for the achievement of the Strategic Objectives. These "enabling factors" need to be in place in order for countries to achieve the objectives, hence if the Strategic Directions are not in place, it is not surprising that the Strategic Objectives are not being met. The recommendations provided in this section are geared towards country-level action in order to achieve the Strategic Objectives.

Strategic Direction 1: All countries commit to Immunization as a priority

No.	2016 - 2017 milestone	Status
SD 1.1	Population-based surveys will indicate the public perception of the value of immunization as positive for 70% of those surveyed	On track
SD 1.2	25 countries will have completed a review of their policies, laws, and regulations in support of immunization	15/25
SD 1.3	At least 35 countries will have constituted a national stakeholder consultation forum on immunization	3/35
SD 1.4	All countries will have conducted a mid-term review of their accomplishments, shortcomings, and evolving needs and capacity, and adjusted their multi-year plans accordingly.	41/47

Table 5: *Progress of Strategic Direction 1 against RSPI 2017 milestones*

[16] *Conjugate multivalent vaccines exist in the market but those are not supported by Gavi and have prices too high for the countries in the region. Polysaccharide vaccines are available at affordable prices but are only suitable for outbreak response, not protecting children and providing only short-lasting immunity.*

The region appears to be on track for the conduction of population-based surveys where over 70% of those surveys found that the general population see value in vaccines. However, the quality of some of these surveys is limited; they do not always capture the same information and the data from different surveys are not systematically collected and analysed or used to inform implementation and policies. Countries face several challenges in measuring demand for immunization e.g. lack of financing, lack of human resources and lack of knowledge on how to conduct appropriate surveys, as well as the fact that implementation research is often down-prioritised. Studies conducted to understand public perception include among others: Vaccine perception for polio vaccine (Nigeria); Reasons for late notifications of AFP (Angola); Community action to identify reasons for vaccine refusal (Kenya); HPV acceptability in sub-Saharan African; and Missed opportunities for vaccination (Malawi; Chad; Kenya: DRC; and Nigeria).

Fifteen of the targeted 25 countries completed a formal review and revision of their policies, laws and regulations in support of immunization. In six countries national immunization policies are under development or revision. In 26 countries, no such revisions are planned or information on this indicator is limited. This may be an overlooked area: not every immunization program may feel empowered to stimulate the process for change if and when important.

Three of the 35 targeted countries have convened a national stakeholder consultation forum on immunization. Whilst many immunization-related forums exist (e.g. ICCs, NITAGs and polio transition meetings) the participation and scope of discussions at these forums is not known, making it difficult to assess whether they can be considered to be a broad stakeholder consultation. With the ADI roadmap in place, it is anticipated that member states will hold and report on regular immunization forums including all stakeholders; existing stakeholder meetings such as ICCs or Joint Program Appraisals could be leveraged to have such a discussion.

Mid-term reviews have been conducted in 41 countries between 2012 and 2017 and most countries now have valid comprehensive multi-year plans (cMYPs) on immunization. In almost all countries an annual internal review of the immunization program is conducted to assess the status of implementation and to develop the plan for the next year including updating the cMYP, taking into account results from periodic assessments e.g. Joint Program Appraisals, EPI reviews and post-introduction evaluations (PIEs).

The panel acknowledges that mid-way through the 2014 – 2020 RSPI, the Ministerial Conference on Immunization in Africa, held in Addis Ababa in 2016, convened all African leaders and global partners around the GVAP and RSPI. The meeting concluded with the Addis Declaration on Immunization (ADI) which was endorsed by the Heads of States at the African Union Summit in January 2017. The ADI Roadmap, launched at the WHO African Health Forum in Rwanda in June 2017 is an instrument to be leveraged to accelerate the implementation of the RSPI and to ensure immunization is a priority in each country. In order to achieve Strategic Direction 1, the ADI roadmap is to be implemented with a strong focus on advocacy, communication and monitoring.

The panel agreed that insufficient data are being captured for Strategic Direction 1. It is recommended that the indicators be revised, aligned with the ADI principles, with explicit operational definitions and guidance on how these should be measured.

Strategic Direction 2: Individuals and communities understand the value of vaccines and demand immunization as both their right and responsibility

No.	2016 - 2017 milestone	Status
SD 2.1	A strategy for stimulating community demand for immunization will have been developed, implemented and tested in 10 countries	9/10
SD 2.2	Trends in community demand for immunization will have been evaluated in at least 10 countries where focused projects will have been implemented	No data

Table 6: *Progress of Strategic Direction 2 against RSPI 2017 milestones*

Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Comoros, Guinea, Malawi, Niger, Nigeria, Madagascar, Seychelles, Swaziland and Uganda
CAR, Chad, Cote d'Ivoire, DRC, Congo and Liberia
Benin, Guinea and Niger

Guidance material, initiated by UNICEF and WHO, has been developed to assist program managers to better understand how to generate demand for immunization. This guideline has been tested in nine West and Central African countries. Further studies are underway exploring issues affecting demand creation; as well as investigations into assessments of demand at the individual, household and community levels; attempts to engage communities with specific emphasis on male involvement; and improving immunization processes e.g. through the provision of household incentives. Gavi is also providing support to a network of Civil Society Organizations (CSOs) working to mobilize demand. No data are yet available to report on evaluations of trends of community demand.

The indicators measured here do not capture how demand and the rights of communities (with particular relevance to the human right to health and to the convention on the rights of the child) will be measured. Casting immunization as a right, as made explicit in the RSPI and the GVAP has the dual advantage of acknowledging government obligations and adding monitoring mechanisms through the Human Rights International Treaty monitoring bodies. Whilst the WHO/UNICEF JRF will include demand related indicators, it is recommended that these indicators and assessment methods be revised.

Strategic Direction 3: The benefits of immunization are equitably extended to all people

No.	2016 - 2017 milestone	Status
SD 3.1	35 countries will have developed and implemented a microplanning approach to reach every community and every individual eligible for immunization	34 countries have microplans in all districts; 5 countries with microplans in <50% of districts
SD 3.2	Immunization strategies in 35 countries will have incorporated specific approaches to reach new eligible populations such as older children, adolescents, young adults and the elderly	Possibly on track in terms of process with 26 MCV2, 20 MenA, 6 HPV introductions

Table 7: *Progress of Strategic Direction 3 against RSPI 2017 milestones*

Thirty-four countries have **microplans** in all districts and five countries have microplans in up to 50% of districts. The region is thus meeting the target however these numbers do not give an indication of the quality of the plans or the implementation thereof. For example, services are often not offered every day of the week, multi-dose vials are not opened for single children, outreach services are not regularly implemented and documented, nor are periodic intensification of routine immunization (PIRI) activities and the involvement of private sector providers and NGOs.

New vaccine introduction plans formulate **strategies and approaches to reach the relevant age groups** beyond infancy (e.g. MCV2, Td at school entry, MenA and HPV), thus all countries that have introduced these vaccines have necessarily undertaken efforts to develop strategies to reach the new eligible population groups. Whilst the region may be on track for this indicator, data to reflect this progress are not routinely captured. However, proxy information is available such as MCV2 introduced in 26 countries, MenA vaccine campaigns targeting up to 29-year olds in 20 countries and national HPV introduction targeting adolescent girls in six countries.

"Positioning Demand Generation in national EPI planning and implementation processes: A quick guide to assist immunization and communication planners and managers" initiated by UNICEF WCARO, WHO AFRO and UNICEF ESARO.
Chad, Cape Verde, CAR, DRC, Equatorial Guinea, Guinea Bissau, Mali, Niger and Sierra Leone.

Challenges to equitable access include primary healthcare facilities not offering immunization services; weak school health programs; limited integration with other programs; and missed opportunities (defined as any contact with a health service that did not result in an eligible individual receiving the needed vaccine) including those in emergency situations.

The new WHO Guide for Reaching Every District (RED) further details the approach of going equitably beyond infancy and women of child-bearing age and adopting a life cycle approach to immunization with vaccines delivered during the 2nd year of life, as boosters in childhood, to adolescents, to pregnant women and to other adults.

Strategic Direction 4: Strong immunization systems are an integral part of a well-functioning health system

No.	2016 - 2017 milestone	Status
SD 4.1	20 countries will have formulated plans to curb the burden of disease through comprehensive approaches in which immunization will or will be expected to soon play a pivotal role	No data
SD 4.2	On the basis of experience and lessons learned, 20 countries will have developed and adopted microplanning for integrated services supporting primary health care, including outreach options and the deployment of appropriate human, financial and logistic resources	No data
SD 4.3	All countries will have conducted a mid-term assessment of their surveillance systems, including the ease of access to and performance of laboratory services, and taken corrective action as appropriate	27/47
SD 4.4	30 countries will have established an effective case-based surveillance system for vaccine preventable diseases	36/30

Table 8: *Progress of Strategic Direction 4 against RSPI 2017 milestones*

Data for Strategic Direction 4.1. and 4.2. are not routinely captured and thus there is a risk that this Strategic Direction focuses too heavily on surveillance i.e. reactive responses and campaigns rather than strong prevention systems that reach everyone.

Some efforts have been made to formulate plans to curb the burden of disease through comprehensive approaches e.g. the hepatitis program seeks to promote the use of comprehensive plans covering prevention and treatment and include immunization; HPV programs are developing in combination with adolescent health programs; and the integrated Global Action Plan for Pneumonia and Diarrhoea (GAPPD) has been developed, however progress at country-level is limited and little effort had been made to combine the introduction of PCV and rotavirus vaccines with early diagnosis, referral and treatment, as prescribed by this strategic guideline. Vaccines should not be expected to be sufficiently effective unless they are associated with improved clinical management.

The revised RED guidance includes updated tools and guidelines to assist countries in microplanning for the provision of integrated services and coordination of immunization systems with other primary health care programs, including integrated planning to maximize resources at the higher levels of the health system.

Twenty-seven countries have conducted mid-term assessments of their surveillance systems. There is no consistent measure of the quality of these assessments. A surveillance system performance matrix including rotavirus and pediatric bacterial meningitis (PBM) surveillance has been established to assess overall system growth and this should be included alongside this indicator.

Thirty-six countries are reported as having robust case-based surveillance systems for measles, rubella/CRS, yellow fever, rotavirus and PBM, with the opportunity to include other currently or potentially vaccine preventable diseases, e.g. typhoid fever and invasive non-typhoidal salmonella. However, case-based surveillance still depends mainly on external resources and is thus at risk with the declining investments from GPEI and Gavi. Sustained high-quality surveillance is critical to monitor the impact of vaccination and generate information to inform policies and optimize strategies and will require increasing investments of domestic resources.

The indicators related to integration (SD 4.2) have not allowed data to be succinctly compiled and reported and the panel recommends that these indicators be revised.

Strategic Direction 5: Immunization programs have sustainable access to long-term funding and quality supplies

No.	2016 - 2017 milestone	Status
SD 5.1	All countries will have re-examined their expenditures, projected financial needs and funding prospects and adjusted their plans accordingly	41/47
SD 5.2	35 countries will have conducted a supply management assessment for the procurement of vaccines and other supplies; the capacity and performance of the cold chain; the needs, availability, deployment and maintenance of transportation equipment; and communication means	32/35

Table 9: *Progress of Strategic Direction 5 against RSPI 2017 milestones*

Forty-one of the 47 countries in the region have reviewed their budgets and adjusted their plans accordingly, and 43 countries had a line item in their national budgets for vaccines and immunization between 2014 – 2016. Between 2010 and 2016, the trends of government expenditure on routine immunization in the region are as follows: eleven countries show decreasing expenditures on routine immunization, while this expenditure is increasing in 29 countries and no data are available for seven countries. Government expenditure on routine immunization per live birth (population weighted average) increased from 5.60 USD (2010/2011) to 11.60 USD (2015/2016). Whilst this increase is encouraging, the goal is that all vaccines, including the delivery costs, are domestically financed. This is one of the ADI commitments; however there has been limited progress in allocating a specific percentage of government expenditure to routine immunization since 2010 and the region is still largely reliant on external funding sources.

Ten countries in the region are not Gavi-eligible, 26 Gavi supported countries are in the initial self-financing phase, nine are in the preparatory transition phase and two are in the accelerated transition phase. All Gavi co-financing obligations are being met in the region, however Gavi transition support will not be flexible or extended beyond the agreed timeline, hence domestic and innovative funding resources will have to be made available to maintain progress. These innovative financing mechanisms need to be designed in the context of reported cases of misused funds in the region, resulting in the need for funds to be channelled through partners e.g. WHO and UNICEF.

Whilst the quality of the UNICEF/WHO Joint Reporting Form (JRF) data on financial information is improving, no single point of data collection exists, hence an effort is being made to utilize and report immunization expenditures using the System of Health Accounts (SHA).

Thirty-two countries have conducted a vaccine supply management assessment and improved their supply chains between 2014 and 2017 (43 countries since 2009), as a result of Effective Vaccine Management (EVM) assessments and resultant investments in equipment and training. However, only two countries are meeting the 80% EVM criteria related to storage capacity, maintenance, stock management and vaccine distribution. Some countries struggle to implement the EVM Improvement Plans as a result of strained financial resources, limited human resource capacity and failure to effectively utilize the guidelines and tools provided. Thirty-four countries are eligible for the Gavi Cold Chain Equipment Optimization Platform (Gavi CCEOP), of which 18 countries have been approved, 10 are in submission for review and six are not yet ready for submission of the application to Gavi. Further, the Vaccine Product, Price and Procurement (V3P) platform, established by WHO in 2014, provides price and procurement information to countries in order to support them with negotiations with manufacturers, especially middle-income countries with limited experience with price negotiations.

Strategic Direction 6: Country and regional communication, research and development innovations maximise the benefits of immunization

No.	2016 - 2017 milestone	Status
SD 6.1	At least 35 countries will have incorporated in their cMYPs an agenda for implementation research on immunization drawn up in consultation with national scientific and technical professionals, health practitioners, academics, partner organizations and members of civil society	2/35
SD 6.2	Outcomes in 10 countries from assessment and implementation research on methods to improve the quality and timely use of administrative and epidemiological data, and the expanded use of communication, monitoring and evaluation methods and technology will have resulted in a plan for improving data quality in those countries and regionally	10/10

Table 10: *Progress of Strategic Direction 6 against RSPI 2017 milestones*

Only two countries in the region have a budget line for implementation research in their cMYPs. It is recommended that this indicator be reviewed in order to systematize information on research – much research is taking place but is not included in the cMYP.

Overall data quality in the region is still poor, largely linked to poor human resource capacity, limited availability of tools, and limited coordination between EPI and Health Management Information Systems (HMIS). Thirteen countries have completed implementation of a standard District Health Information System (DHIS2), five have had a partial roll-out and 10 countries are in the pilot stage and requirements for linking EPI data with DHIS2 were established in this context. In order to improve data quality, WHO training on data quality assessments for all 47 countries has been provided between 2014 and 2017 and 16 countries developed an annual data quality improvement plan (DQIP). In-depth data quality reviews took place in nine countries.

Swaziland and Uganda
Burkina Faso, Ghana, Kenya, Liberia, Mozambique, Nigeria, Rwanda, Sierra Leone, Tanzania, The Gambia, Uganda, Zambia, Zimbabwe
Algeria, Burundi, DRC, Malawi, South Africa
Benin, Cameroon, Congo, Cote d'Ivoire, Guinea Bissau, Namibia, Niger, Senegal, South Sudan, Togo
Benin, Burkina Faso, Cameroon, Ghana, Kenya, Mali, Nigeria, Swaziland, Tanzania

CHALLENGES AND OPPORTUNITIES

Over the past years, several global and regional transformations have started shaping the world of immunization in ways which were not yet evident at the time of approval of the GVAP and of the RSPI for the WHO African Region. The formulation of the African Region 2009-2013 Strategic Plan, was the precursor to the GVAP which was inspired by the Global Immunization Vision and Strategy (GIVS).

The endorsement of the Sustainable Development Goals has stressed the importance of a more universal and integrated approach for health, including immunization. This change in focus implies going beyond vertical programs in health that act in isolation, and moving towards a stronger unitary primary healthcare platform.

At the same time, the call for the achievement of Universal Health Coverage requires rethinking of the process of allocation of public resources both across sectors and within the health sector. Immunization should revisit its approach in this new scenario that, on one hand, may be perceived as reducing the focus on a highly effective stand-alone program but, on the other, provides unique opportunities for more efficient and effective vaccine delivery, in particular in the age groups beyond the 1st year of life where the EPI program has traditionally struggled.

These and other global trends intersect at the regional level with epidemiological and demographic trends that have affected, and will likely continue to affect, the immunization efforts. In recent years, the number of outbreaks and humanitarian emergencies has greatly increased, culminating in the Ebola outbreak of 2014 in West Africa and the yellow fever outbreaks in 2016. In 2017 alone, 109 outbreaks and 18 humanitarian crises in the African Region have strained the health and immunization systems during the immediate response and in the subsequent restoration period. Improved preparedness and strengthening of health systems will be required to pre-empt crises and minimise their impact.

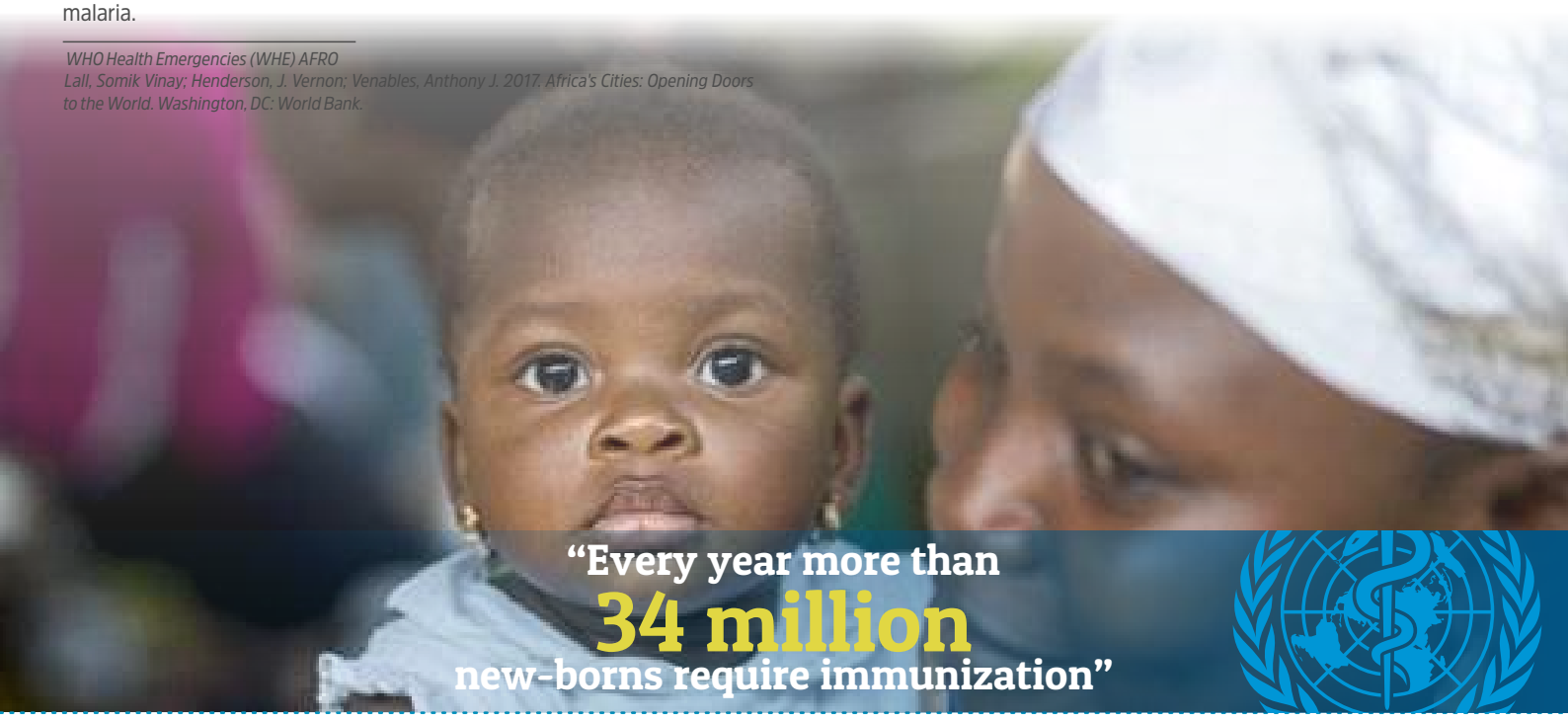
The evolving demographic trends in the region are at the base of new challenges for immunization. The population growth has led the region to pass the 1 billon inhabitants mark in 2016 with a total under-5 population in excess of 164 million. Every year more than 34 million new-borns require immunization. The distribution of the population is also changing quickly. According to a recent World Bank report, African urban areas are now home to 472 million people, a number which is expected to double over the next 25 years. To be successful, delivery of immunization in urban areas, often including slums, requires new targeted strategies and resources.

The last case of WPV in the region has been registered in August 2016; with the region progressing towards polio elimination, the ramp-down of GPEI investments and staff is already well underway. The total GPEI investment has been reduced by 10% in 2017 down to 102M USD and will be further reduced by another 13% in 2018. WHO is releasing human resources in wave 1 countries and has started issuing personnel abolishment letters in wave 2 countries. Several of the core polio functions that support EPI in many areas will be discontinued and will require identification of alternative immunization delivery, surveillance and logistic systems along with adequate financing flows to maintain operations.
In parallel to the GPEI ramp-down, the support provided by Gavi, another important traditional source of financing for national immunization programs in the region is evolving. By 2020, two countries (Congo and Angola) will have completely transitioned out of Gavi support while nine more will be in transition (Nigeria and Sao Tomé) or in a preparatory phase for transition (Cameroon, Côte d'Ivoire, Ghana, Kenya, Lesotho, Mauritania and Zambia). Over the past years, some of these countries have been very successful in introducing a large portfolio of life-saving vaccines that will now require full domestic financing. At a particular risk of a funding gap are countries newly categorized as middle income countries which will need to procure vaccines at a higher price than in the past.

The combination of these dynamics stresses the importance of securing predictable and sizeable sources of financing for immunization out of the national budgets. In the African Region, government spending on routine immunization per live birth has increased by more than 100% since 2010, albeit from a very low level. Substantial additional investments will be required.

To this aim, an unprecedented milestone has been reached with the endorsement by Heads of-State of the Addis Declaration on Immunization in January 2017. The Declaration provides a strong backing for the implementation of 10 commitments to achieve universal and equitable access to immunization. The existence of such strong political support will be crucial to deal successfully with the existing and emerging trends that are conditioning the successful delivery of immunization in the region. The ADI is recognised as a political and advocacy instrument which can be used to support the implementation of the RSPI at the highest level of government, in much the same way as the African Leaders Malaria Alliance (ALMA) has provided increased political impetus in the fight against malaria.

WHO Health Emergencies (WHE) AFRO
Lall, Somik Vinay; Henderson, J. Vernon; Venables, Anthony J. 2017. Africa's Cities: Opening Doors to the World. Washington, DC: World Bank.



RECOMMENDATIONS IN BRIEF

The panel identified the following six priority areas and defined related recommendations. These recommendations do not suggest the reformulation of the RSPI, but rather serve to highlight key areas that can, in the panel's view, change the trajectory of immunization in the African Region. With only three years left to reach the RSPI milestones, the MTR urgently calls on governments to implement these recommendations alongside all stakeholders.

1

Leverage the Addis Declaration on Immunization (ADI) commitments: The ADI demonstrates an unprecedented show of political commitment from the leadership of the countries in the region. Leveraging such a commitment should be the centrepiece of the future regional and national strategies as well as the main tool to ensure alignment of all partners' effort in the region to the priorities and actions endorsed by the countries. Operationally this will mean translating the commitment into allocation of funding, reinforcement and rapid deployment of trained human resources and the definition of an accountability framework that allows for each country and collectively for the regional leadership, to monitor the progress towards the agreed goals and the contribution of the various parties. A formal detailed biannual reporting on country performance on a few selected indicators can provide the basis for such accountability.

Define community-centred and country-specific approaches to improve equitable access: Reaching the underserved populations of the region presents one of the greatest challenges to reaching coverage targets and eliminating disease. Underserved populations are located in different settings – urban slums, nomadic and displaced populations, remote difficult-to-reach areas, neglected regions and marginalized communities – often with specific needs and requiring specific strategies. Countries are encouraged to strengthen program implementation at the community level using the revised RED guidelines; further engage CSOs to encourage social accountability; and strengthen effective vaccine management systems to ensure vaccines are continuously available, including during times of emergencies and conflicts. Countries with different degrees of health system maturity should focus on different priorities to ensure a fast progression in specific areas thus contributing to reaching the RSPI and disease control goals.

2

3

Foster a Universal Health Coverage approach that puts immunization at the core of primary care: The success of immunization programs is closely linked to the functioning of the overall health system. Immunization programs benefit from strong health systems and, conversely, specific health interventions can benefit from the high coverage generally achieved by immunization services. Each contact with a health care professional is an opportunity for vaccination, and vaccination points create opportunities to inform about, diagnose and treat other health concerns and diseases. The introduction of new vaccines beneficial to school children, adolescents and adults at specific risk creates opportunities to reach broader age groups and prevent more illness throughout the life course. Plans, objectives and accountability of a life course approach to immunization should be designed with a UHC perspective and opportunities for integration beyond immunization sought when appropriate, in accordance with the level of maturity of specific immunization programs. The development and implementation of an integrated healthcare visit calendar for at least the first 2 years of life should form the core of such an approach.

Improve availability and use of appropriate quality data for decision: Immunization program data are a key element informing activities and strategies. Data are systematically collected and reported at the national level in all countries in the region. However, the quality of vaccine coverage estimates and other indicators remains limited in many countries. With a focus on delivering the RSPI objectives and in view of the short timeframe, it will be essential to focus on particular information required to take decisions in priority areas in the different country settings and paying particular attention to what data are required by front-line managers. Data analyses should thus be informed primarily by country needs rather than those of partners. A prioritisation of data requirements per country should be pursued to focus efforts on those that are on the critical path to reaching the RSPI goals. While strategic data improvement plans based on information system and data quality assessments are universally needed, more sophisticated approaches should be limited to countries with more mature immunization systems. Further, countries are to evaluate the strength of their surveillance systems and, where necessary, re-establish surveillance in a more coordinated way.

4

5

Involve new players and use new approaches to enhance human resource capacity: The success of any program is heavily reliant on the personnel that operate them. Adequate levels of competency, strong managerial skills and well-defined accountability frameworks are all pre-requisites for a well-performing health work-force. The financial and managerial shortcomings of the public sector often represent a major challenge in achieving results. In view of the fact that interventions cannot be implemented in isolation in immunization (or healthcare), innovative avenues should be explored in areas such as training of healthcare cadres or in providing opportunities to exchange skills across countries and regions. A regional and national secondment mechanism to be fed by public health institutions should be implemented to provide countries with sufficient additional staff in the short term and at the same time create unique opportunities for on-the-job development.

Employ innovative instruments to sustain financing: Countries are required and expected to take on more financial responsibilities for their immunization systems particularly in light of the Gavi transition and GPEI ramp down. This should result from a combination of increasing domestic investments, innovative financing mechanisms that address specific financing bottlenecks as well as focused research on the efficiency of immunization and health systems. Countries at different stages of transition from Gavi support will require tailored strategies.

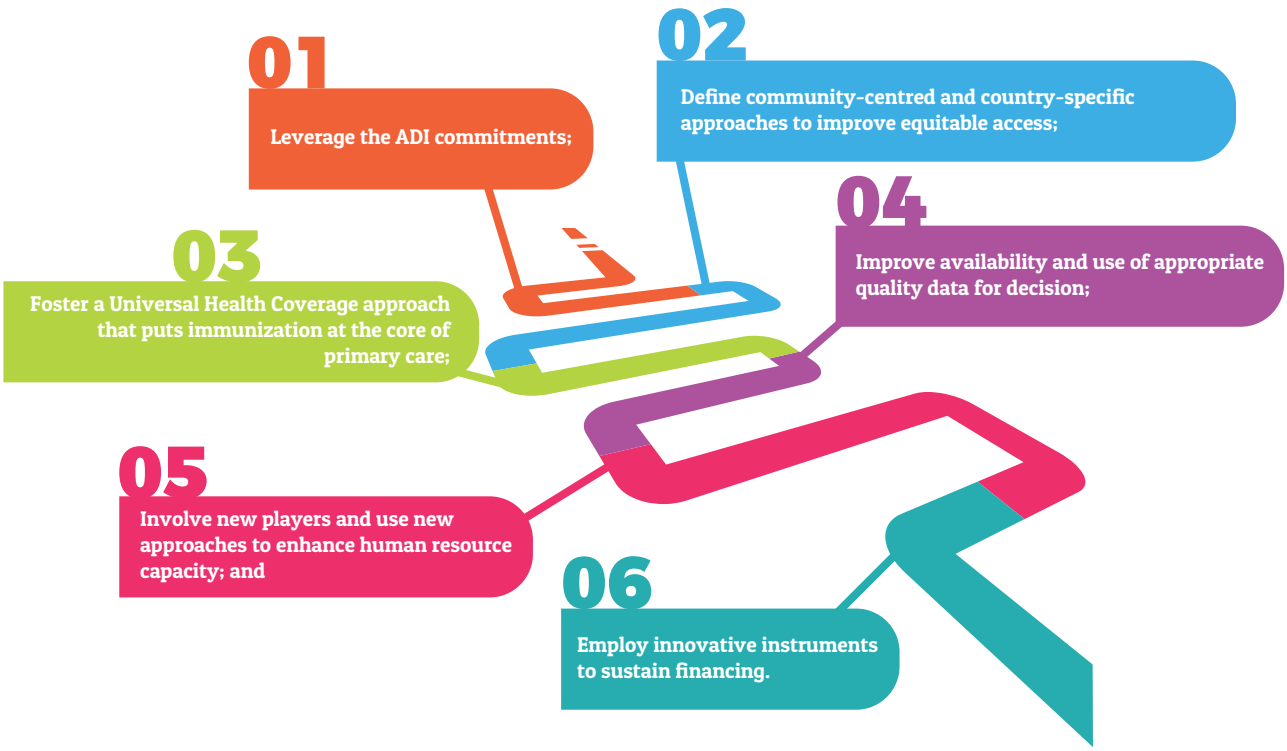
6

CONCLUSION

Success in the African region is critical to the success of global immunization gains. The elimination and control of diseases relies on each region to attain and maintain coverage targets. The African mortality rate for VPDs is still more than twice the global average mortality rate and some regional specific VPDs are disproportionately present in the African region, hence much work remains to be done in the region.

This report has outlined the successes and challenges in the region against the RSPI Strategic Objectives and Directions. As the Decade of Vaccines draws to a close, a surge effort is required to achieve the RSPI goals or sufficiently close the remaining gaps. To do so the coordinated effort of all partners is required. It is imperative that all stakeholders align to the recommendations presented in this report. With teamwork, focus, determination and sufficient resources, it is possible to reach many of the objectives as laid out in the RSPI and succeed in reaching coverage targets, eliminating polio, progressing towards the elimination of measles, and containing other VPDs.

The panel recommends countries and partners implement the six key recommendations presented herein:



Two more areas of recommendation were discussed by the panel that, while they may only have limited immediate impact on the achievement of the 2020 RSPI targets, should be given adequate attention to ensure that progress continues and longer term strategic goals are achievable.

The panel recommends enhanced investments into research. Research capacity strengthening needs bold actions in African countries which should strive towards greater regional reliance in research and fair and balanced alliances with external partners. This includes countries fully implementing the Algiers Declaration on Narrowing the Knowledge Gap to Improve Africa's Health; partners providing high-quality technical assistance for basic and operational research focused on the implementation of research results into action and policy; and WHO and partners preparing an investment case for regional vaccine manufacturing in alignment with the ADI commitments, particularly for an affordable polyvalent conjugate meningitis vaccine. Research agendas should be defined relevant to a country's burden of disease and health and immunization services capacity and ongoing social science research should be expanded to include behavioural and economic issues, and extended across the region.

Further, whilst vaccine safety control measures are not included in the six priority recommendations, the panel recommends, where appropriate, countries should establish fully capacitated AEFI committees and AEFI databases; countries should develop Standard Operating Procedures (SOPs) on detection and reporting of signals of breaches of safety under the oversight of NRAs; and, where not in place, countries should establish standard vaccine safety processes. WHO is to assist countries to become a part of global pharmacovigilance systems.

Additionally, the MTR review panel recommends that partners have a particular focus on large and/or fragile countries and humanitarian emergencies. Ethiopia, DRC and Nigeria, all have excessively low coverage rates, and are responsible for more than one third of the total regional birth cohort. Targeted support to these three countries, with intense tailoring of the interventions at subnational level, will greatly improve progress in the region and the panel recommends partners provide exhaustive support to these countries. Alongside there is an increasing number of outbreaks and humanitarian emergencies of various nature which the region faces at different times and in different places. Preparedness for immunization in such situations should receive specific attention and resource provision in close collaboration with governmental and non-governmental partners engaged in humanitarian emergency mitigation.

The MTR review panel further recommends that a tailored approach be implemented with countries recognising the huge variances within the region, and the fact that blanket recommendations are not always appropriate, e.g. some countries are in a humanitarian crisis, whilst other countries have strong and robust immunization and governance systems. Support to countries should be systematically tailored depending on a country's capacity and maturity of its health and immunization system.

Many countries are innovatively and effectively delivering, and financing, vaccines and are constantly improving their immunization systems. The panel recommends that WHO strengthens the process for the documentation and dissemination of best practice sharing within the region, and across regions.

Finally, the MTR review panel found that progress against some of the Strategic Directions was difficult to quantify. These are largely process indicators, hence adequate assessment of progress against these is limited and difficult to translate into actions. The panel recommends that the Strategic Direction indicators be reviewed. Consideration should be given to data required to support consistent assessments of progress e.g. through more relevant and sensitive indicators, improved data quality and integrated systems. These indicators should be specific, measurable, achievable, realistic and time-bound.

Global Vaccine Action Plan – Annex to the GVAP Secretariat Annual Report 2016: Progress Report for the African Region Meningitis A, Yellow Fever, Cholera

"...countries should establish fully capacitated AEFI committees and AEFI databases; countries should develop Standard Operating Procedures (SOPs) on detection and reporting of signals of breaches of safety under the oversight of NRAs; and, where not in place, countries should establish standard vaccine safety processes.

WHO is to assist countries to become a part of global pharmacovigilance systems."

RECOMMENDED ACTIONS

Only three years remain before the close of the Decade of Vaccines and much work remains to be done in the region. A focus on the three large countries, Nigeria, DRC and Ethiopia, responsible for 38% of the region's birth cohort will greatly improve the regions progress against RSPI objectives. It is the responsibility of each stakeholder and partner to implement the actions recommended by the RSPI mid-term review panel in order to promote and protect the health of the one billion people who call the African region home.

In order to achieve the six recommended priority areas, the panel recommends the following actions are implemented by the relevant stakeholders. These actions should be reviewed alongside Annex B which states the suggested timelines, roles and responsibilities for each action item.

Recommendation 1:

Leverage the Addis Declaration on Immunization commitments

a. **WHO to establish an ADI Secretariat to monitor implementation of the ADI roadmap.**

The MTR panel strongly supports the implementation of the ADI roadmap, with a strong focus on advocacy, communications and monitoring.

Timeline for implementation of ADI roadmap: Ongoing
Responsible: All

The panel re-affirms the ADI recommendation to establish an ADI Secretariat, responsible for monitoring the implementation of the ADI roadmap and reporting on the status of implementation to Heads of State every two years. The roles, responsibilities, and terms of reference of the secretariat will be defined by WHO AFRO, WHO EMRO and the AU Commission, with input from Member States. This secretariat should have the authority and ability to generate political influence.

Timeline for establishment of ADI Secretariat: Q2 2018
Responsible: WHO

b. **WHO to convene annually the African Regional stakeholder Meeting to be jointly accountable for the RSPI MTR recommendations.**

The alignment of all stakeholders' investments and activities with the RSPI objectives and priorities is key to success. The ADI roadmap acknowledges the national, regional and global monitoring and accountability frameworks that exist. The African Regional Stakeholder group will be jointly responsible for the implementation of the recommendations and timelines contained in this review, and the related outcomes against the RSPI milestones. Taking lessons from ALMA, the immunization stakeholders will be assessed against a scorecard which measures effectiveness of stakeholder engagement (to be designed) and will work strategically with the African Union Commission (AUC) on an annual basis to define what needs to be done to finance the RSPI. The stakeholders should formally recognise improvements made in countries in order to incentivize progress.

Timeline for convening of ADI stakeholder group: Q2 2018
Responsible: WHO

c. **WHO to identify a regional "face" of immunization.**

Strategy 1 of the ADI calls for the identification, development and engagement of immunization champions, particularly at national and sub-national levels. The MTR panel extends this recommendation to identify a regional "face" of immunization. The "face" of immunization should be a trusted champion whose efforts will drive demand and coverage and the integrated delivery of quality health services.

Timeline for identifying regional "face" of immunization: Q2 2018
Responsible: WHO

d. **Countries to strengthen Interagency Coordinating Committees (ICCs) or similar mechanisms and expand to include partners beyond the health sector to regularly review implementation of policies and plans.**

Immunization is a cornerstone of primary health care, and provides opportunities to access communities for a number of issues beyond immunization. In this way, it can contribute greatly to the achievement of the UHC goals. Accessing communities does however require integrated approaches to ensure that communities trust frontline workers, irrespective of sector and agency, minimizing duplication and ensuring effective delivery of services that meet the needs of a community. The role of ICCs or other country forums is to coordinate the efforts of domestic agencies and international stakeholders for the efficient and effective use of resources. These coordination mechanisms should include partners beyond the health sector (e.g. parliamentarians, religious leaders, CSOs) who will facilitate access to communities and other stakeholders, review implementation of policies and plans, and monitor progress against targets. At the same time, the ongoing approaches to strengthening NITAGs should be continued and their links to ICCs reinforced. These mechanisms can also work to build an enabling policy environment for the review and revision of policies, laws and regulations.

Timeline to expand ICCs to include partners beyond the health sector: Q2 2018
Responsible: Countries

e. **All partners to ensure alignment of plans and investments with RSPI MTR objectives and recommendations.**

Without an aligned focus on the RSPI immunization priorities, RSPI targets will not be met and one in five children on the continent will continue to be without access to life-saving vaccines. The RSPI highlights the roles and responsibilities of key stakeholder groups i.e. government; health professionals; communities; civil society; UN and other global agencies; Gavi; other development partners; academia, vaccine manufacturers, media, private sector vaccination providers; and corporate philanthropic partners. All of these stakeholders should review their plans and investments against the RSPI, factoring-in the RSPI MTR recommendations and ensure that their activities and budgets support the RSPI objectives and the resulting actions presented in this review.

Timeline to ensure plans and investments aligned with MTR recommendations: Q2 2018
Responsible: All partners

Recommendation 2:

Define community-centred and country-specific approaches to improve equitable access

a. **WHO, alongside partners, to finalize an approach to supporting and managing immunization programs according to their "level of maturity".**

Given that countries face very different challenges related to their geo-political conditions and the strength of their health and immunization systems, one-size-fits-all approaches will likely result in inequitable and ineffective allocation of resources. The WHO Regional Office has initiated an effort to develop a support framework that defines the appropriate level of support based on a country's progress and capacity. The panel recommends that this approach is finalised, validated with countries and swiftly rolled-out.

Timeline: Q1 2018
Responsibility: WHO

b. **Countries to strengthen implementation and monitoring of all five pillars of RED at the community level with targets to be included in country plans.**

'Reaching Every District' (RED) is a strategy of district capacity building to address common obstacles to increasing immunization coverage and equity, with a focus on planning and monitoring. The RED guidance has recently been revised and updated guidelines will be available end 2017. It emphasizes five important and evolving areas for the delivery of immunization programs in the region: (1) reducing inequity in immunization coverage, (2) integration of health services, (3) delivering vaccines beyond infancy using a life course approach; and conducting immunization in the wake of (4) increasing urbanization, and (5) insecurity and conflict. Thorough implementation of the RED approach in all districts below 90% coverage is recommended. Specific prominence is to be given to the RED implementation in the three large underperforming countries Nigeria, DRC and Ethiopia while continuing to provide adequate support to fragile and conflict-affected countries.

Timeline to strengthen implementation and monitoring of RED: Ongoing
Responsible: Countries

c. **Countries to further engage CSOs and community-based organizations to encourage social accountability and focus on demand creation.**

CSOs, community-based organizations, youth groups, women's groups, organizations working with out-of-school youth, religious groups etc. all play a pivotal role in influencing community behaviours and can assist in generating demand for the provision of quality immunization services. New vaccine delivery technologies, e.g. the TT-Uniject (an injection device prefilled with a single dose of TT vaccine) or microarray vaccine patches can be key to enabling lower cadre health workers including community health workers to administer vaccines, particularly in areas with poor access to health care facilities. The activities proposed in the ADI, including the need for state accountability, and the potential impact of national level leaders, are reinforced here.

Timeline to further engage CSOs and CBOs: Ongoing
Responsible: Countries

d. **Countries to re-design or strengthen vaccine management in light of root-cause assessments performed during Effective Vaccine Management (EVM) assessments.**

Health care facilities and programs rely on efficient and effective supply chain systems to store, transport and distribute health care products and commodities. An effective supply chain is a critical element of an immunization program. It is recommended that countries with EVMs which are older than 3 years, repeat these before 2019, and all countries fully implement the recommendations of the resultant EVM Improvement Plans (EVM IPs). These plans should ensure that cold chain and logistics systems are maintained and sustained beyond the ramp-down of the polio program.

Timeline to re-design/strengthen EVM: 2018/9
Timeline to implement EVMIP: 2019/2020
Responsible: Countries

e. **WHO, alongside partners, to ensure immunization is part of emergency coordinating mechanisms and to ensure access to Gavi prices for populations affected by emergencies.**

Existing guidance should be used to ensure that immunization is an integral part of emergency response mechanisms in crisis settings and that the post-crisis recovery period is carefully planned and integrated in the overall health systems re-building efforts. Emergency preparedness and response efforts should be supported by negotiating the extension of access to preferential vaccine prices for populations in emergency and conflict settings irrespective of their Gavi eligibility status.

Timeline: 2018
Responsible: WHO/Gavi

Recommendation 3:

Foster a Universal Health Coverage approach that puts immunization at the core of primary care

a. **Countries to adopt a life-course approach**

Countries with a sufficient degree of maturity of their health and immunization systems are to adopt a life-course approach, advocating for integration beyond the health system, e.g. including education, water and sanitation, nutrition, agriculture and social development. Individual and/or family records should be designed, spanning across periods of the life-course, with a pre-defined calendar of scheduled health visits and interventions, including vaccinations as well as other health services. Financial and human resources should be pooled to ensure more efficient utilisation of resources and strengthened service provision. Integration can occur between the health sector and other sectors, for example by prioritizing timely birth registrations, as well as within the health sector between programs, e.g. by using specific coverage data to highlight integration with antenatal care and maternal health programs. To support integration within the health sector, the WHO draft guidelines for "Establishing a 2YL Healthy Child Visit" are to be finalised by 2018 and implemented by countries.

Timeline: 2018 for finalization of 2YL guidelines; 2019 for adoption of 2YL approach
Responsible: WHO; Countries with sufficient level of health systems and immunization systems maturity

b. **Countries to perform missed opportunity assessments and to implement resulting plans.**

Missed opportunity assessments are a useful tool for an efficient and effective increase in immunization coverage, providing practical data for decision making to improve coverage. Countries are encouraged to perform such assessments and include the findings in the development of RED microplans (see recommendation 2b), thus better aligning health services provision across programs.

Timeline: 2018 - 2019
Responsible: Countries

Recommendation 4:

Improve availability and use of appropriate quality data for decision

a. **WHO to support countries in defining their national information requirements.**

Data informs decisions and ensures that programs focus their activities on areas of need. At the same time there are reporting requirements serving regional and global reporting and analytical activities. Information requirements vary country by country. For example, countries with low coverage and weak systems may need to focus on measuring the absolute number of children vaccinated without estimating a denominator, while countries with stronger systems will need more precise disaggregated data at the district level with both accurate numerators and denominators. Countries with support from WHO should define these information requirements per user profile and per country, and including process indicators allowing for 'real-time' insights, to better inform decision making, yet without overburdening country data systems and resources.

Timeline: 2018
Responsible: WHO

b. **Countries to establish Data Quality Teams**

The creation of Data Quality Teams (DQT) should be considered whenever Data Quality Self-Assessment (DQA) indicates the need for improvements. The DQA toolbox is used to evaluate different aspects of an immunization monitoring system at district and health unit levels. The DQT responsibilities should include conducting DQAs and coverage surveys (where necessary) every 3 – 5 years; providing tools to improve data quality and reporting; conducting annual data desk reviews and periodic in-depth data quality reviews; inputting into cMYPs, EPI Plans of Action, and microplans; ensuring implementation of data quality improvement plans and alignment with broader health information management systems (e.g. DHIS2); and ensuring that data is being appropriately interpreted and used for decision making.

Timeline: 2019
Responsible: Countries (where appropriate)

c. **Countries to develop SOPs for implementation of interoperable data systems**

Interoperability, the ability of different information systems to communicate, exchange relevant data, and use the information that has been exchanged, is a critical opportunity to strengthen data collection and use in health systems with the aim of improving service delivery and identifying opportunities for integration. Countries whose immunization and health systems have the appropriate level of maturity are encouraged to further explore ways in which their data systems can become interoperable e.g. between EPI data systems and DHIS2.

Timeline: 2019
Responsible: Countries (where appropriate)

d. **Countries to strengthen surveillance systems to ensure that policy and programmatic decisions are based on up-to-date data to optimize performance and impact.**

Countries are to evaluate the strength of surveillance systems and, where necessary, re-establish surveillance in a more coordinated way. In-country surveillance should be built-on the Integrated Disease Surveillance and Response (IDSR) framework and should have strong links with VPD surveillance. Synergies between surveillance systems should be established including human resources, reporting sites, data reporting and management systems, laboratory networks, tools and methods. Further, the polio post certification strategy to define critical surveillance functions will need to be fully implemented. Attempts to increase the diagnostic laboratory capacity in the region should be strengthened. Surveillance systems should further be advanced by using new technologies e.g. smartphones and Geographic Information Systems (GIS) tools to verify and validate data using geocoding.

Timeline: 2019
Responsible: Countries (where appropriate)

e. **Countries to perform costing / needs analysis for VPD surveillance - and ensure sufficient domestic budget.**

Types of surveillance for Vaccine Preventable Diseases (VPD) vary depending on the attributes of the diseases that need to be monitored and the immunization program's objectives. WHO and partners are to devise a conceptual framework putting sensitive disease surveillance at the centre of VPD control and certification of elimination, and detail the budget required to support the surveillance activities needed to maintain and sustain a rapid response to priority public health threats in the post-polio eradication era, including the increasing threats of anti-microbial resistance. A key element of the assessment is the detailed understanding of the current contributions of GPEI to the financing of VPD surveillance activities. Countries should perform an in-depth surveillance needs analysis in light of WHO recommended VPD surveillance standards, and ensure that sufficient domestic budget can be made available, particularly for strengthened community-based and active health-facility based VPD surveillance, supportive laboratory capacity and the adoption of new technologies.

Timeline: 2019
Responsible: Countries

Birth registration, the official recording of a child's birth by the government, is considered as the "first rights" of a child, as enshrined in both the UN Convention on the Rights of the Child and the African Charter on the Rights and Welfare of the Child.

Recommendation 5:

Involve new players and use new approaches to enhance human resource capacity

a. **WHO, alongside partners, to provide guidance on defining competency models, assessing and developing training curricula and using a variety of learning approaches in partnership with academic institutions.**

A number of stakeholders are in the process of developing competency models for immunization positions and assessing and developing training curricula, including the draft Immunization Competencies Initiative, supported by US CDC. These activities can assist countries in identifying potential gaps in competencies of their immunization staff. WHO, and other stakeholders and institutions are to support these work streams at regional and country level. Further, WHO is to partner with regional and global academic institutions to establish regional and sub-regional vaccinology training courses.

Timeline: 2018
Responsible: WHO

b. **WHO to develop guidelines for a system of exchange secondments which countries are to implement, based on their specific needs.**

In order to foster an exchange of experience, encourage sharing of best practices and to be able to deploy additional trained resources where most in need, WHO is to develop guidelines for an exchange secondments program for EPI staff. These secondments should include structured mentorship programs for on-the-job and peer learning.

Timeline: 2018 for development of program; 2019 for country implementation
Responsible: WHO; Countries (where appropriate)

c. **Countries to implement or scale-up accountability frameworks for health workers**

The Global Polio Eradication Initiative (GPEI) developed and successfully piloted accountability frameworks for health workers in specific countries. These frameworks serve to supervise and support front line workers in efforts to build capacity and could be used as a blueprint across national immunization programs.

Timeline: 2019
Responsible: Countries (where appropriate)

Recommendation 6:

Employ innovative instruments to sustain financing

a. **Countries to establish fully budgeted GPEI and Gavi transition plans**

The ADI provides clear guidelines to support the transition process, as proposed by the GPEI. The polio ramp-down should be used as a catalyst for increasing government support for immunization, including improved collaboration between Ministries of Health and Finance. The GPEI, Gavi, WHO, UNICEF and other partners are providing support to ensure sustainable financing and technical capacity for immunization programs. With a long-term financial and programmatic sustainability goal in mind, countries should leverage off this support, to start estimating the total cost of immunization activities and identifying potential domestic sources of financing that can replace diminishing external financing. The plans should provide a reasonable trajectory towards a full autonomy of the country immunization programs. In doing so, countries should consider a variety of financing mechanisms including support from philanthropists, the private sector, voluntary funding, special taxes on activities that are harmful to health, fundraising during special events and launching health or immunization funds.

Timeline: 2018
Responsible: Countries transitioning out of Gavi support or where GPEI support is ramped down

In order for countries to accurately estimate the total cost of their immunization activities, the panel recommends that the cMYP costing tool is revisited and simplified. Further, countries should improve tracking of expenditure and strengthen the JRF and the System of Health Accounts (SHA) Framework.

Timeline for revising cMYP costing tool: 2018
Responsible: WHO

b. **World Bank / African Development Bank and/or other financial institutions to identify short-term grants and/or bridging loans solutions**

World Bank, African Development Bank and/or other financial institutions should make available short-term bridging loan solutions to assist countries to cover financing gaps in emergency situations, or in planned agreements linked to Gavi transition and the GPEI ramp-down. This should provide countries sufficient time to cover temporary short-term budgetary gaps while not derogating from the principle of self-financing, since countries will have to reimburse these loans. A results-based mechanism can be designed whereby achievements of specific coverage targets at national and subnational level may result in reductions of the debt.

Timeline: 2018
Responsible: World Bank / African Development Bank

c. **World Bank / African Development Bank and/or other financial institutions to identify financial instruments to ensure cash-flow stability**

Often procurement issues are triggered by problems with short-term cash availability. In order to minimise such transitory issues, the World Bank, African Development Bank and/or other financial institutions should assist Ministries of Finance in countries to mitigate procurement issues linked with cash-availability at the country level. This includes ensuring cash-flow stability and, where necessary, underwriting country expenditure to ensure the continuous availability of vaccines and supplies. Pooled-procurement mechanisms for sub-sets of countries should be further explored and aligned e.g. with the ongoing Southern African Development Community procurement of drugs discussion in order to provide additional and sustainable opportunities to access supply.

Timeline: 2018
Responsible: World Bank / African Development Bank

ANNEXES

Annex A: Summary of country progress against Strategic Objectives and Strategic Directions

STRATEGIC OBJECTIVES:

Strategic Objective 1: To improve immunization coverage beyond the current levels

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SO 1.1	Coverage of Pentavalent 3 and MCV1 vaccines will have reached 90% nationally in at least 25 countries.	16/25	Algeria, Botswana, Burundi, Cabo Verde, Comores, Eritrea, Gambia, Lesotho, Mauritius, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Tanzania, Zambia, Zimbabwe
SO 1.2	40 countries will have introduced the pneumococcal conjugate vaccine (PCV)	39/40	Countries not yet introduced: Cabo Verde, Chad, Comores, Equatorial Guinea, Seychelles, South Sudan
SO 1.3	30 countries will have introduced the rotavirus vaccine	32/30	Countries not yet introduced: Algeria, Benin, Cabo Verde, CAR, Chad, Comores, DRC, Equatorial Guinea, Gabon, Guinea, Lesotho, Nigeria, Seychelles, South Sudan, Uganda
SO 1.4	25 countries will have introduced the HPV vaccine	6/25	Botswana, Mauritius, Rwanda, Seychelles, South Africa, Uganda
SO 1.5	25 countries will regularly report AEFI of at least 10/100,000 surviving infants, and at least 50% of these events will be investigated and reported to national authorities within 2 weeks of occurrence	22/25	Algeria, Botswana, Burkina, Faso, Cameroon, CAR, Comores, Côte d'Ivoire, Eritrea, Gambia, Ghana, Guinea-Bissau, Namibia, Nigeria, DRC, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Togo
SO 1.6	Fewer than 10 countries will be reporting one or more stock-outs of vaccines or supplies lasting more than one week	16/47	Angola, Burkina Faso, Chad, DRC, Swaziland, Togo, Tanzania, Zimbabwe, Mali, Mauritius, South Africa, Botswana, Lesotho, Kenya
SO 1.7	40 countries will have a NITAG	23/40	Algeria, Benin, Burkina Faso, Cameroon, Côte d'Ivoire, DRC, Eritrea, Ethiopia, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Senegal, South Africa, South Sudan, Swaziland, Togo, Uganda, Tanzania, Zambia, Zimbabwe
SO 1.8	At least 25 countries will have a functioning NRA	N/A	

Strategic Objective 2: To complete the interruption of wild poliovirus transmission and ensure virus containment

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SO 2.1	All countries will have implemented measures for containment of wild polioviruses and cVDPVs	40/47	Countries which have not reported satisfactorily on containment: Mauritania, Chad, Niger, Nigeria, Cameroon, CAR, Mozambique
SO 2.2	All countries using OPV will have introduced at least one dose of IPV	34/47	Countries which have not introduced: Angola, Burkina Faso, Cabo Verde, Eritrea, Ghana, Liberia, Malawi, Rwanda, Sierra Leone, Togo, Tanzania, Zambia, Zimbabwe
SO 2.3	OPV type 2 will have been withdrawn	47/47	All
SO 2.4	At least 10% annual increase in DTP3 coverage will be achieved in 80% of the high-risk districts for all 6 focus countries	0/6	Focus countries: Angola, Chad, DRC, Ethiopia, Nigeria and South Sudan

Strategic Objective 3: To eliminate measles and advocate for the elimination of rubella and congenital rubella syndrome

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SO 3.1	MCV1 coverage will have reached at least 95% nationally in at least 25 countries	6/25	Botswana, Comores, Gambia, Rwanda, Seychelles, Zimbabwe
SO 3.2	MCV1 SIA coverage will be at least 95% in every district	4/42 SIAs	Burkina Faso, Malawi, Sao Tome and Principe, Zimbabwe
SO 3.3	At least 15 countries will have introduced the rubella-containing vaccine in routine EPI	20/15	Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Eritrea, Gambia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Namibia, Rwanda, Senegal, Seychelles, Swaziland, Tanzania, Zambia, Zimbabwe
SO 3.4	At least 28 countries will have introduced the MCV2 vaccine in routine EPI	26/28	Algeria, Angola, Botswana, Burkina Faso, Burundi, Cabo Verde, Eritrea, Gambia, Ghana, Kenya, Lesotho Malawi Mauritius, Mozambique, Namibia, Niger, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe

Strategic Objective 4: To attain and maintain elimination/control of other vaccine preventable diseases

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SO 4.1	42 countries will have achieved and validated the elimination of maternal and neonatal tetanus	38/42	Countries which have not achieved milestone: Angola, CAR, Chad, DRC, Guinea, Kenya, Mali, Nigeria, South Sudan
SO 4.2	31 countries at risk for yellow fever will have introduced the yellow fever vaccine, and 10 countries will have achieved more than 90% coverage with the vaccine	22/31 introduced 1/10 >90% coverage	Angola, Benin, Burkina Faso, Cameroon, CAR, Chad, Congo, Côte d'Ivoire, DRC, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Mali, Niger, Senegal, Sierra Leone, Togo
SO 4.3	All countries within the meningitis belt will have introduced MenAfriVAC© through campaings and 5 of them will have introduced through routine immunization	20/25 4/5	*Campaign:* Benin, Burkina Faso, Cameroon, CAR, Chad, Côte d'Ivoire, DRC, Ethiopia, Mali, Niger, Nigeria, Gambia, Guinea, Guinea-Bissau, Ghana, Mauritania, Uganda, Senegal, South Sudan and Togo *Routine:* Burkina Faso, CAR, Chad, Ghana, Mali, Niger
SO 4.4	Sero-prevalence of HbsAg among children under five will not be higher than 2% in at least 20 countries	Data not available	

STRATEGIC DIRECTIONS:

Strategic Direction 1: All countries commit to Immunization as a priority

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SD 1.1	Population-based surveys will indicate the public perception of the value of immunization as positive for 70% of those surveyed	On track	Nigeria, Angola, Kenya, sub-Saharan Africa, Malawi, Chad, DRC
SD 1.2	25 countries will have completed a review of their policies, laws, and regulations in support of immunization	15/25	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Comores, Guinea, Malawi, Niger, Nigeria, Madagascar, Seychelles, Swaziland, Uganda
SD 1.3	At least 35 countries will have constituted a national stakeholder consultation forum on immunization	3/35	Benin, Guinea, Niger
SD 1.4	All countries will have conducted a mid-term review of their accomplishments, shortcomings, and evolving needs and capacity, and adjusted their multi-year plans accordingly.	41/47	Chad, CAR, Gabon, DRC, Burundi, Cameroon, Sao Tome, Ghana, Guinea, Liberia, Togo, Comores, Uganda, Madagascar, Mauritius, Angola, Congo, Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Mauritania, Niger, Rwanda, Tanzania, Malawi, Lesotho, Zambia, Equatorial Guinea, Mali, Senegal, Guinea Bissau, Botswana, Eritrea, Mozambique, Namibia, Seychelles, Swaziland, South Sudan, Zimbabwe

Strategic Direction 2: Individuals and communities understand the value of vaccines and demand immunization as both their right and responsibility

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SD 2.1	A strategy for stimulating community demand for immunization will have been developed, implemented and tested in 10 countries	9/10	Chad, Cape Verde, CAR, DRC, Equatorial Guinea, Guinea Bissau, Mali, Niger, Sierra Leone
SD 2.2	Trends in community demand for immunization will have been evaluated in at least 10 countries where focused projects will have been implemented	No data	

Strategic Direction 3: The benefits of immunization are equitably extended to all people

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SD 3.1	35 countries will have developed and implemented a microplanning approach to reach every community and every individual eligible for immunization	34 countries have microplans in all districts; 5 countries with microplans in <50% of districts	Countries which did not reach milestone: Benin, Equatorial Guinea, Gabon, Guinea-Bissau, Kenya, Mauritius, Mozambique, Namibia, Niger, South Africa, South Sudan, Uganda, Tanzania
SD 3.2	Immunization strategies in 35 countries will have incorporated specific approaches to reach new eligible populations such as older children, adolescents, young adults and the elderly	Possibly on track in terms of process with 26 MCV2, 20 MenA, 6 HPV introductions	*MCV:* Algeria, Angola, Botswana, Burkina Faso, Burundi, Cabo Verde, Eritrea, Gambia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Niger, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe *MenA:* Benin, Burkina Faso, Cameroon, CAR, Chad, Côte d'Ivoire, DRC, Ethiopia, Mali, Niger, Nigeria, Gambia, Guinea, Guinea-Bissau, Ghana, Mauritania, Uganda, Senegal, South Sudan and Togo *HPV:* Botswana, Mauritius, Namibia, Seychelles, South Africa, Uganda

Strategic Direction 4: Strong immunization systems are an integral part of a well-functioning health system

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SD 4.1	20 countries will have formulated plans to curb the burden of disease through comprehensive approaches in which immunization will or will be expected to soon play a pivotal role	No data	
SD 4.2	On the basis of experience and lessons learned, 20 countries will have developed and adopted microplanning for integrated services supporting primary health care, including outreach options and the deployment of appropriate human, financial and logistic resources	No data	
SD 4.3	All countries will have conducted a mid-term assessment of their surveillance systems, including the ease of access to and performance of laboratory services, and taken corrective action as appropriate	27/47	Angola, Benin, Botswana, Cabo Verde, Cameroon, Côte d'Ivoire, Equatorial Guinea, Eritrea, Gambia, Ghana, Guinea-Bissau, Lesotho, Liberia, Malawi, Mali, Namibia, Nigeria, Rwanda, Seychelles, Sierra Leone, South Africa, South Sudan, Togo, Uganda, Tanzania, Zambia, Zimbabwe
SD 4.4	30 countries will have established an effective case-based surveillance system for vaccine preventable diseases	36/30	Angola, Benin, Botswana, Burundi, Cameroon, CAR, Chad, Comores, Congo, Côte d'Ivoire, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, South Sudan, Swaziland, Togo, Uganda, Tanzania, Zambia, Zimbabwe

Strategic Direction 5: Immunization programs have sustainable access to long-term funding and quality supplies

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SD 5.1	All countries will have re-examined their expenditures, projected financial needs and funding prospects and adjusted their plans accordingly	41/47	Chad, CAR, Gabon, DRC, Burundi, Cameroon, Sao Tome, Ghana, Guinea, Liberia, Togo, Comores, Uganda, Madagascar, Mauritius, Angola, Congo, Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Mauritania, Niger, Rwanda, Tanzania, Malawi, Lesotho, Zambia, Equatorial Guinea, Mali, Senegal, Guinea-Bissau, Botswana, Eritrea, Mozambique, Namibia, Seychelles, Swaziland, South Sudan, Zimbabwe
SD 5.2	35 countries will have conducted a supply management assessment for the procurement of vaccines and other supplies; the capacity and performance of the cold chain; the needs, availability, deployment and maintenance of transportation equipment; and communication means	32/35	Countries which did not conduct assessment: Algeria, Benin, Burkina Faso, Cameroon, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Kenya, Mauritius, Seychelles, Sierra Leone, South Africa, South Sudan, Swaziland

No.	2016 - 2017 milestone	Status	Countries which have achieved milestone
SD 6.1	At least 35 countries will have incorporated in their cMYPs an agenda for implementation research on immunization drawn up in consultation with national scientific and technical professionals, health practitioners, academics, partner organizations and members of civil society	2/35	Swaziland, Uganda
SD 6.2	Outcomes in 10 countries from assessment and implementation research on methods to improve the quality and timely use of administrative and epidemiological data, and the expanded use of communication, monitoring and evaluation methods and technology will have resulted in a plan for improving data quality in those countries and regionally	10/10	Benin, Burkina Faso, Cameroon, Ghana, Kenya, Mali, Nigeria, Swaziland, Tanzania, Zimbabwe

Annex B: Summary of recommendations including timelines & responsibilities

Rec.	Action	Responsible	2018 Q1 - Q2	2018 Q3 - Q4	2019	2020
1 a.	WHO to establish an ADI Secretariat to monitor implementation of the ADI roadmap	WHO	■			
	ADI Secretariat to report on status of implementation to Heads of State every 2 years	ADI Secretariat		■	■	■
1 b.	WHO to convene an ADI stakeholder group	WHO	■			
	ADI stakeholder scorecard designed	ADI Secretariat	■			
	ADI stakeholder group to be jointly accountable for the RSPI MTR recommendations	ADI Stakeholder Group		■	■	■
1 c.	WHO to identify a regional 'face' of immunization	WHO	■			
	"Face" of immunization launched throughout the region	WHO		■	■	■
1 d.	Country ICC mechanisms to expand to include partners beyond the health sector	Country	■			
1 e.	Partners to review plans and investments to ensure alignment with RSPI MTR recommendations	All Partners	■			
2 a.	WHO to finalize an approach to supporting and managing immunization programs according to their "level of maturity"	WHO	■			
2 b.	Countries to strengthen implementation and monitoring of all five pillars of RED at the community level with targets to be included in country plans	Country	■	■	■	■
2 c.	Countries to further engage CSOs and community-based organizations to encourage social accountability and focus on demand creation	Country	■	■	■	■
2 d.	Countries to re-design/strengthen EVM	Country	■	■	■	■
	Countries to implement EVMIP	Country	■	■	■	■
2 e.	WHO to ensure immunization is part of emergency coordinating mechanisms	WHO	■	■		
	WHO to ensure Gavi vaccine prices for populations affected by emergencies	WHO, Gavi	■	■	■	■
3 a.	WHO to finalise "Establishing a 2YL Healthy Child Visit" guidelines	WHO	■	■		
	Individual/family health records, across the life-course, to be designed and implemented	WHO	■	■		
	Countries to adopt a life-course approach	Country			■	■
3 b.	Countries to conduct missed opportunity assessments and implement resulting improvement plans	Country	■	■	■	■
4 a.	WHO to define information requirements per country	WHO	■	■		
4 b.	Countries to establish Data Quality Teams	Country			■	■
4 c.	Countries to perform DQAs	Country	■			
	Countries to develop SOPs for implementation of interoperable data systems	Country			■	■
4 d.	Countries to strengthen surveillance systems	Country			■	■
4 e.	Countries to perform costing/needs analysis for VPD surveillance and ensure sufficient domestic budget.	Country			■	■
4 f.	WHO to strengthen the process for documentation and dissemination of best practice sharing and peer review across multiple areas including decision support technologies	WHO			■	■
5 a.	WHO to provide guidance on defining competency models, assessing and developing training curricula and using a variety of learning approaches in partnership with academic institutions	WHO	■	■		
	WHO to schedule sub-regional vaccinology trainings	WHO	■			
5 b.	WHO to develop guidelines for a system of exchange secondments	WHO	■	■		
5 c.	Countries to implement the system of exchange secondments	Country			■	■
5 d.	Countries to implement or scale-up accountability frameworks for health workers	Country			■	■
6 a.	Countries to establish fully budgeted transitions plans (from Gavi and GPEI)	Country	■	■		
	WHO to simplify cMYP	WHO	■	■		
6 b.	World Bank/African Development Bank to identify short-term bridging loans solutions	World Bank/ADB	■	■		
6 c.	World Bank/African Development Bank to identify financial instruments to ensure cash flow stability	World Bank/ADB	■	■		

Annex C: Root Cause Analysis

Available at http://www.afro.who.int/health-topics/immunization-and-vaccines development

Annex D: Desk review of RSPI and related data as presented to MTR panel

Available at http://www.afro.who.int/health-topics/immunization-and-vaccines development