MEETING REPORT

REGIONAL IMMUNIZATION TECHNICAL ADVISORY GROUP (RITAG)

KIGALI, RWANDA
29TH AND 30TH JUNE, 2018

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ACRONYMS

ADI	*Addis Ababa Declaration on Immunization in Africa*
AFRO	*African Regional Office*
AFP	*Acute flaccid paralysis*
AGE	*Acute Gastroenteritis*
ANC	Ante-natal care
AVAREF	*African Vaccine Regulatory Forum*
BMGF	*Bill and Melinda Gates Foundation*
bOPV	*Bivalent oral polio vaccine*
CDC	*US Centers for Disease Control and Prevention*
cMYP	Comprehensive multiyear plans for immunization
CRS	Congenital Rubella Syndrome
CSF	Cerebrospinal Fluid
CSO	Civil society organizations
CTC	Controlled Temperature Chain
cVDPV	*Circulating vaccine-derived poliovirus*
DHF	*Dengue Hemorrhagic Fevers*
DHS	Demographic and Health Surveys
DOPV	Directly Observed Polio Vaccination
DQS	Data quality self-assessment
DQWG	Data Quality Working Group
DTP	Diphtheria-tetanus-pertussis [vaccine]
EPI	Expanded Programme on Immunization
EYE	Elimination of Yellow Fever Epidemics
FRH	Family and Reproductive Health
Gavi	Global Alliance for Vaccines & Immunization
GIS	Geographic Information systems
GPEI	*Global Polio Eradication Initiative*
GPS	Geospatial positioning system
GVAP	Global Vaccine Action Plan
HPV	Human Papilloma Virus Vaccine
HR	High Risk
HSS	Health systems strengthening
ICC	Inter-Agency Coordinating Committee
IDSR	Integrated Disease Surveillance & Response
IMCI	Integrated Management of Childhood Illness
LMIC	Low and middle income countries
LQA	Lot Quality Assurance
MCIA	Ministerial Conference on Immunization in Africa
MCH	Maternal and Child Health
MCV	Measles-containing vaccine
MCV1	First dose of MCV
MCV2	Second dose of MCV
MNT	maternal and neonatal tetanus
MOF	Ministry of Finance
MOH	Ministry of Health
mOPV	*Monovalent oral polio vaccine*
MOV	Missed Opportunity for Vaccination
MR	Measles-rubella [vaccine]
MSF	Médecins sans Frontiers
NGO	*Non-governmental organization*
NIDs	*National Immunization Days*
NITAG	*National Immunization Technical Advisory Group*
NNT	*Neonatal tetanus*
NRA	*National Regulatory Authority*
OPV	*Oral polio vaccine*
PAB	Protection at birth
PAHO	Pan American Health Organization
PCR	Polymerase Chain Reaction
PCV	Pneumococcal conjugate vaccine
PID	Pneumococcal invasive disease
PIVI	Partnership for Influenza Vaccine Introduction
RCV	Rubella-containing vaccine
RED	Reaching Every District Approach
RITAG	Regional Immunization Technical Advisory Group
RV	Rotavirus Vaccine
SAGE	Strategic Advisory Group of Experts on immunization
SIAs	Supplementary Immunization Activities
tOPV	*Trivalent oral polio vaccine*
RITAG	Task force for Immunization
TBA	Traditional Birth Attendants
TT	Tetanus toxoid
VCMs	*V*olunteer community mobilizers
VHF	*Viral Hemorrhagic Fevers*

JRF	The WHO UNICEF Joint Reporting Form
UNICEF	United Nations Children's Fund
LGA	*Local Government Area*
VPD	*Vaccine Preventable Disease*
YF	*Yellow Fever*
WHA	*World Health Assembly*
WHO	World Health Organization
WPV	*Wild poliovirus*

EXECUTIVE SUMMARY

The Regional Immunization Technical Advisory Group (RITAG) met in Kigali Conference Centre, Kigali, Rwanda from 29th to 30th June 2017 for its first ordinary meeting of the year. Dr Felicitas Zawaira, Director, Family and Reproductive Health, WHO AFRO, welcomed the participants on behalf of the Regional Director, Dr Matshidiso Moeti. She also declared the meeting open. Present at the opening was the Honorable Minister for Health, Rwanda, the WHO Country Representative for Rwanda and representatives of other UN agencies and immunization partners in Rwanda. In the subsequent sessions were immunization partners and donors as well as representatives of civil society organizations, immunization staff from the countries and various levels of WHO (ISTs, Regional Office and Immunization and Polio Directors from HQ).

The primary goals of the meeting were to update the RITAG members on progress made in the programme, current priorities as well as levels of achievement of the recommendations from the previous RITAG meetings and to seek their advice and guidance on current specific challenges and programme plans and activities. Some of the recent priority areas in immunization in the African Region were discussed in sessions of the meeting after the brief presentations made by the secretariat. In these sessions, the progress made was summarized, challenges highlighted and the RITAG members given the opportunity to discuss and to provide advice. At the end, a number of key recommendations were made.

Recommendations

TYPHOID:

Preamble

The global estimates of typhoid fever burden are very high with South/South East Asia and Sub-Sahara Africa bearing the highest disease burden including deaths. Studies have shown that children are disproportionally affected with a peak incidence between 5 and 15 years of age. Risk of dying is highest among children reaching up to 20% where antimicrobial resistance (AMR) to S. Typhi exists or where antibiotics are not available. The risk factors for this disease include lack of safe water, inadequate sanitation and hygiene especially among food handlers and overcrowding. In addition to affected communities, at risk groups include health care workers and laboratory staff. WHO recommends that typhoid vaccination should be implemented in the context of other control strategies including improved access to safe water, adequate sanitation and appropriate personal and food hygiene.

Emergence of AMR to S. Typhi is a security threat with resistance to ampicillin, chloramphenicol, cotrimoxazole, fluoroquinolones, cephalosporins having been reported in Sub Sahara Africa thus requiring serious consideration of additional interventions such as typhoid vaccination.

RITAG, in providing the recommendations below, considered also the following;

- the magnitude of typhoid and other enteric fevers in the African region where the burden of disease is one of the highest
- the WHO/SAGE position and recommendations on the typhoid vaccine and vaccination
- the GAVI board decision to provide support

RITAG Recommendations

1. WHO AFRO to prioritise the development of a comprehensive multi-sectoral plan for control of typhoid and other water-borne/faeco-oral diseases (including safe water and sanitation).

2. Countries to implement comprehensive, multi-sectoral approaches to typhoid control including food safety, provision of safe water, promotion of improved hygiene and sanitation especially among food handlers.

3. For countries with data indicating a high disease burden or a high burden of AMR:
    a. Introduction of TCV 0.5ml, single dose, intramuscular into the routine immunization programme along with measles vaccine at 9 months or in the second year of life, with possibility of catch-up campaigns up to 15 years.
        i. Countries should consider sub-national introductions in the highest risk areas with or without catch-up campaigns.
        ii. Post TCV introduction, countries should strengthen post-marketing surveillance monitoring and safety in special groups, such as malnourished children.

4. For countries with inadequate data/potentially large disease burdens
    a. To prioritize strengthening surveillance and research on disease burden (including but not limited to data on geographical distribution, drug resistance, and risk factors) to make the case for vaccine introduction.
    b. WHO AFRO should support the use of the WHO surveillance standards for typhoid fever and other invasive salmonella diseases (press here) to generate better quality data on disease burden and antimicrobial resistance.

5. In outbreak situations
    a. The use of vaccination in response to confirmed outbreaks of typhoid fever

6. In emergency situations
    a. Countries to prioritize provision of safe water and promotion of improved hygiene and sanitation especially among food handlers. Typhoid vaccination may be considered within the framework of implementation research. Countries are encouraged to use the "WHO framework for decision making in the use of vaccines in humanitarian settings" as a guide for risk assessment.

7. Evidence gaps/Research
    a. WHO AFRO to guide and support priority research on TCV to generate evidence:
        i. of vaccine effectiveness and impact in Africa including mathematical modelling and cost effectiveness analyses
        ii. on safety and immunogenicity in special populations such as malnourished children, immunocompromised individuals and co-administration with other vaccines
        iii. on use of typhoid vaccines for outbreak control and assess the effectiveness of preventive and reactive vaccination campaigns including duration of protection and need for revaccination for outbreak control and emergency settings

8. RITAG will follow up on results of ongoing impact studies in Malawi, Nepal and Bangladesh when they become available and may review these recommendations should the need arise.

INFLUENZA:

Preamble

Influenza occurs globally with an annual attack rate estimated at 5-10% in adults and 20-30% in children. Seasonal epidemics occur mainly during winter in temperate climates and year-round in tropical regions. The mortality rate of seasonal flu in sub-Saharan Africa of 2.8 -16.5/100 000 is similar to that in other regions. Influenza A viruses may also cause worldwide pandemics at intervals of 10 - 40 years. The last pandemic occurred in 2009.

Influenza disease is not considered a priority by most African countries. Only three countries have a policy for influenza vaccination. Less than one percent of global seasonal influenza vaccines produced is used in Africa.

Although many countries may depend on regional/sub-regional data to assess the overall epidemiological situation, individual national decisions on influenza vaccine use will be determined by national capacity and resources. Country-specific information about risk groups, disease burden and cost-effectiveness are important for national policy makers and health programme planners to make informed decisions.

For countries considering the initiation or expansion of programmes for seasonal influenza vaccination, WHO recommends that pregnant women should have the highest priority. Additional risk groups to be considered for vaccination are children aged 6–59 months, the elderly (>65 years), individuals with specific chronic medical conditions (such as HIV, asthma, and chronic heart or lung diseases), and health-care workers.

Influenza surveillance platforms are critical for monitoring and communicating the impact of introducing seasonal influenza vaccination. In the AFRO region, 31 countries currently have capacity for influenza PCR surveillance.

Strengthening of seasonal influenza vaccination programmes may assist in programmatic preparedness for pandemic vaccine introduction and should be considered by countries.

The Partnership on Influenza Vaccine Introduction (PIVI) is a public-private programme supporting the introduction sustainable, routine, seasonal influenza vaccination programmes in low- and middle-income countries.

RITAG Recommendations:

Noting the 2012 WHO/SAGE recommendation on Seasonal Influenza vaccination, RITAG recommends that AFRO countries who:

1. Are not using the current Pandemic Influenza Preparedness framework, should consider adopting this approach to frame their response to the threat of pandemic influenza.

2. Have introduced the seasonal influenza vaccine, should also use the opportunity to prepare programmatically for pandemic influenza.

3. Have introduced or are considering the introduction of seasonal influenza vaccine should prioritize the vaccination of pregnant women. Extension to additional high-risk groups such as HIV positive individuals is encouraged and should be based on local evidence where available and priority setting.

4. Have local epidemiologic data on influenza but have not introduced seasonal influenza vaccine should be supported by WHO to analyze the data, and use local data to advocate and communicate the need for the vaccine to policy-makers.

5. Are currently not collecting epidemiologic data on influenza should consider standardized data collection on seasonal influenza within the context of an integrated surveillance system.

General

6. Noting that NITAG strengthening for influenza vaccine introduction is being offered in some countries, we encourage this initiative to extend their support to NITAGs in a holistic manner beyond influenza vaccine alone to overall strengthening of NITAG's capacity to efficiently support other vaccine introductions.

7. WHO should ensure effective community engagement as part of influenza vaccine introduction and as an integral component of managing future outbreak response.

Possible Research Questions

8. How can service delivery of influenza vaccine in difficult to reach high risk groups, e.g., the elderly, best be managed?

9. How can vaccine hesitancy in health care workers be overcome?

EBOLA

Preamble

Disease outbreaks are occurring more frequently in the region and constitute a major public health problem requiring a major emergency response from countries with the support of WHO and partners. During the large outbreak of ebola in west Africa, efforts were made to develop and to test vaccines and therapies against the disease. One of the candidate vaccines, rVSV, was successfully tested in a phase II clinical trial in Guinea using a ring vaccination design. In the recent outbreak in Equateur Province of the DRC, the same vaccine was deployed under the SAGE recommendation of experimental compassionate use. Given that neighboring countries, especially those at risk, have requested the use of the vaccine and noting the operational challenges associated with its use, RITAG recommends the following:

RITAG Recommendations

WHO/AFRO to:

1. Using the current Pandemic Influenza Preparedness framework, develop regional response procedures and guidelines for oversight and use of vaccines and therapies in the event of Ebola outbreaks. Similar procedures and guidelines to be developed for Chikungunya, Lassa, Marburg, etc.

2. Assist high risk AFR countries to develop national regulatory preparedness response plans that includes timely requests for Ebola vaccines and WHO emergency funds. Priority should be given to endemic countries, and second priority for countries neighbouring endemic countries.

3. Compile and analyze lessons from recent outbreaks (West Africa, DRC) in order to develop guidance concerning:
    - regulatory preparedness for vaccine use utilising the African Vaccine Regulatory Forum (AVAREF);
    - community involvement and response;
    - implementing containment vaccination;
    - on-going vaccine safety monitoring.

4. Encourage countries where vaccine has been deployed to use residual stocks before expiry to vaccinate more HCWs and incorporate them fully into the clinical protocol.

5. Explore ways to strengthen AVAREF both technically and with additional resources to expand its capacity to provide increased support to NRAs and national Ethics Committees throughout the AFR region.

6. Communicate with industry the urgent need to secure licensure (and eventually seek WHO prequalification) of the Ebola candidate vaccines for which clinical data are available.

POLIO

Preamble:

Wild poliovirus remains endemic in three countries – Afghanistan, Pakistan and Nigeria. Until poliovirus transmission is interrupted in these countries, all countries remain at risk of importation of polio, especially vulnerable countries with weak public health and immunization services. In Africa the latest wild poliovirus (WPV) case was reported in August 2016 in north eastern state of Borno in Nigeria. Access to the Lake Chad region and the islands in Lake Chad remain a concern despite some inroads being made by the Nigerian military. The tOPV-bOPV switch was carried out in the region from April-May 2016. Unfortunately, after this switch, circulating vaccine derived poliovirus type 2 (cVDPV2) cases have been reported in Nigeria from the environment in 2016 for which monovalent OPV type 2 (mOPV2) was used for the response. In 2017, DR Congo reported 35 cVDPV cases from 3 provinces. By 10 September 2018, DR Congo reported 17 cVDPV2 cases in 5 provinces while Nigeria reported 8 cases in 3 states. From environmental surveillance, 34 cVDPV2s where detected in Nigeria as well as one cVDPV2 detection in Kenya. In responding to these cVDPV2 cases in these countries, mOPV2 has been used. The poor quality of the response campaigns in DR Congo and low routine

immunization coverage has contributed towards the continuous spread of the outbreak since early 2017. It is important to note that these polio outbreaks and responses are occurring at a time when polio ramp down is being implemented and transition plans are being finalized. Having presented the above context, the RITAG formulated the following recommendations:

Country specific recommendations:

The RITAG has noted with great concern the geographically diverse outbreaks of cVDPV that are ongoing in **DR Congo**, the lack of quality in SIAs, and lack of financing for some response activities. The RITAG further noted the weakness of the RI and the surveillance systems in the country. The RITAG therefore request:

1. The WHO/AFRO RD to consider whether high level intervention (RD to President) could strengthen country commitment toward quality outbreak response.

2. The WHO/AFRO RD to advocate for stronger partners coordination, to ensure timely release of funds by both partners and government for outbreak response activities including strengthening RI.

3. The Country to improve the quality of the outbreak response (scope, microplanning, implementation and monitoring).

4. WHO to consider whether operational research might assist the country in understanding why multiple cVDPV outbreaks are occurring in the region.

Lake Chad Region:

5. Noting the weakness of surveillance and immunization coverage in the Lake Chad region, Nigeria should be asked about timelines for access to all islands in Lake Chad on the Nigeria side.

GPEI extension plan (2020-2022) and Transition plans:

At the global level GPEI is applying for funds to cover transitional activities from 2020 – 2022. The 7 priority countries, except Nigeria, have completed polio transition planning. However, the implementation requires clear guidance on next steps, and the commitment of governments to the required activities and to co-funding before raising fund from donors.

1. Frame both the Extension Planning and Transition plans within the context of RI strengthening and integrated PHC services.

2. Develop a high-level advocacy programme driven by the WHO Regional Director to mobilize country and donor resources, and a communication strategy informed by all stakeholders including CSOs on what ending polio means.

3. Ensure that transition plans focus on RI and VPD surveillance as well as essential polio functions.

4. Guide and advocate to the 6 countries that have completed their polio transition planning to ensure that the plan has senior level oversight in the MoH and beyond and is implemented with a clear commitment of phased in domestic resources within the next six months.

5. Present an update of the implementation of transition plans using the monitoring dashboard to every RITAG meeting to monitor progress and make recommendations that address bottlenecks.

OPERATIONAL RESEARCH

Preamble:

Research is increasingly assuming position of centrality in the delivery of public health interventions globally. However, in the African Region there have been low research activities in immunization due to a number of constraints, including low research interests and capacity. Consequently, the RITAG called for a Strategic Framework for Research on Immunization (SFRI) in the African Region that will provide immunization stakeholders with guidance to facilitate scientifically rigorous, coordinated research that addresses immunization priorities of the African countries.

A draft SFRI was presented, discussed and endorsed with the following recommendations:

WHO AFRO to:

1. Promote immunization research capacity strengthening in the African Region.
2. Promote linkage between research institutions, the AFRO office and immunization programmes in the African Region, and through this activity keep an audit of ongoing and completed research undertaken in the region.
3. Advocate for adequate immunization research financing in the African Region.
4. Encourage partners and governments to organize biennial conferences on immunization research in Africa to:

    - Celebrate immunization research in Africa;
    - Share and exchange research findings and ideas;
    - Facilitate collaboration among researchers;
    - Stimulate immunization research among young researchers: and
    - Attract potential donor interested in funding research in Africa

1.0 BACKGROUND

This is the first of the two scheduled regular meetings of the Regional Technical Advisory Group (RITAG) on immunization in the African Region in 2018. The goal of this meeting was to appraise the performance of the immunization programme since the last meeting in December 2017, which held in Johannesburg South Africa. Consequently, the status of implementation of the action points from the last meeting was among the item scheduled to be reviewed along with the review of other programme implementation activities. The level of progress and challenges were also marked for review with suggestions given for remedial actions where necessary.

Specifically, the meeting was called to among others things apprise RITAG members on level of successes in implementation of the recommendations from the last meeting. The broad topics discussed include polio eradication and endgame strategy in the African Region. This has been a standing agenda item for the RITAG in the recent past, given the timeline for the eradication of polio in the Region. Other topic discussed included vaccines issues for influenza, typhoid and Ebola. The RITAG also received the final version of the strategic framework for research on immunization in the African Region. This was first presented to the RITAG in the December 2017 meeting, where suggestions were made for its finalization. The RITAG endorsed it for use after this presentation.

This report presents a detailed account of the meeting and its key achievements.

2.0 OPENING CEREMONIES

Dr Felicitas Zawaira, Director, FRH, WHO/AFRO

Dr Zawaira welcome remarks on behalf of Dr Matshidiso Moeti, WHO Regional Director for Africa. In her welcome remarks, Dr Zawaira highlighted the immeasurable value that immunization brings to children, families, communities and economies stating that, by vaccinating children, we go beyond saving lives – we also protect their education, return precious time and money to their families, a make critical investments in future prosperity.

She emphasized that immunization is an important building block of strong primary health care and universal health coverage and that if Africa curbs 4 major vaccine preventable diseases by 2030, we will avert more than 167 million cases of disease and generate US$58 billion in economic benefits.

Dr Zawaira also informed participants that the *Business case for WHO immunization activities on the African continent 2018-2030* was recently launched in May 2018 at the World Health Assembly in Geneva, which maps out how WHO will better support countries to strengthen their national immunization programmes.

In her closing statement, Dr Zawaira urged immunization stakeholders to continue to strengthen linkages between immunization funding and national priorities, and formulate policies that support immunization and health system development. She also advised RITAG members to place emphasis on integration of activities to support the overall strengthening of the health system which, in the long-run, will sustain regional immunization targets.

Introductory Remarks by Helen Rees, RITAG Chair

In her introductory remarks, Professor Rees welcomed RITAG members and immunization stakeholders to the RITAG meeting and thanked everyone for taking time to attend the RITAG meeting – especially given the meeting took place over the weekend to accommodate the Global Immunization Meeting.

Prof Helen Rees, Chair of RITAG

Professor Rees emphasized the importance of ensuring the RITAG remains beneficial to the Region and requested RITAG members to review past SAGE recommendations and ensure to interpret them to be significant to the WHO African Region. She also requested RITAG members to play an active role in being regional immunization advocates under the umbrella of the Global Health Security Agenda and Universal Health Coverage.

Professor Rees highlighted key outcomes of the recently concluded Global Immunization Meeting which focused on post-2020 immunization priorities, with the theme of navigating transitions – particularly polio and Gavi transitions. She expressed the importance

of emphasizing the success of the immunization programme to date and linking this success to protecting children, families and communities under the Global Health Security Agenda.

In her closing remarks, Professor Rees walked participants through the 2-day RITAG agenda stating: the need to strengthen influenza surveillance in the African region as well as NITAG capacities for influenza vaccines decision-making; steps that need to be taken to ensure countries are readily prepared to introduce the typhoid-conjugate vaccine; the remaining risks within the region to attain polio eradication status; and learn of the Ebola vaccine candidates under clinical development and the outbreak experience of using rVSV ZEBOV in ring vaccinations in Guinea and DRCongo.

Opening Remarks by Minister of Health, Rwanda

The Minister opened the meeting by welcoming all participants to Rwanda on behalf of the Government of Rwanda. She emphasized the importance of taking an integrated multi-sectoral approach to immunization stating that strengthening the routine immunization programme will bolster the overall health system and accelerate progress towards Universal Health Coverage.

Honourable Minister of Health, Rwanda

The Minister highlighted 3 key factors that have continued to Rwanda attaining and sustaining their immunization coverage level – namely: strong political commitment for all levels of government; the fundamental role that community health workers play in attaining health development goals; and using mobile technology to attain public health targets – including immunization. All three factors assisted the Government of Rwanda in sustaining their immunization coverage to over 95%, assisted in successfully introducing new vaccines into their routine immunization programme; and reducing the overall burden of vaccine-preventable diseases in Rwanda.

The Minister concluded her opening remarks by urging all immunization stakeholders to redouble efforts to attain universal immunization coverage by developing a sustainable immunization programme in each country.

Dr Richard Mihigo, Coordinator, IVD Programme, WHO/AFRO

On his part, Dr Richard Mihigo took participants through the programme of work for the two days. He noted that the work will extend into Saturday. At this point, he acknowledged the tremendous sense of responsibility on the part of the RITAG members and their commitment to the immunization programme in the African Region

He expressed his hope that with this commitment on the part of the RITAG members and the Secretariat, the meeting objectives will be reached as planned.

Participants at the June 2018 RITAG Meeting in Kigali, Rwanda

3.0 TECHNICAL SESSIONS

3.1 Overview

The meeting assessed the epidemiology of selected vaccines preventable diseases and the capacity of the immunization programme in the African Region to delivering products and services to protect the populations of Africa, and indeed the world against these diseases. It also provided opportunities to discuss challenges and seek expert orientation, from the RITAG members, on how to better deliver on WHO mandate to the people of the region and the world. Of particular interest were broad issues like polio eradication and endgame strategy in the African Region as well as building resilient vaccine preventable disease surveillance in the African Region. Others issues focused vaccines for influenza, typhoid and Ebola. The meeting also received and endorsed the strategic framework for research on immunization in the African Region. about immunization coverage and introduction of the human papillomavirus vaccine (HPV) in the African Region.

A total of 16 technical presentations were made. One of these, on the status of implementation of RITAG recommendations was for information while 15 were made for RITAG decision and recommendations. The presentations provided participants with the necessary background information on the status of immunization and key vaccine preventable diseases (VPDs) in the African Region. Some of the presentations were from colleagues from the WHO/HQ which were on plans to improve on issues concerning VPD, globally, including the African Region as well as colleagues from WHO Regional Emergencies.

The presentations were followed with discussions leading to actionable recommendations. The presentations, highlights of subsequent discussions and the recommendations are summarized below.

3.2 Information

Update on Status of implementation of RITAG Recommendations

Dr Masresha Balcha, WHO/AFRO

There were 42 actions in 10 domains (see Figure 1). Of these, 25 were fully achieved. Another 14 were in progress, being actions to be taken on a continuous basis. Three other actions were not done at these. The three unimplemented actions are in the areas of VPD surveillance, HPV and MICs. Specifically, for HPV, The WHO recommendation for 3 doses of HPV vaccine for HIV infected girls should be implemented has not started. However, discussions started between Global Fund and Gavi to implement the 3 dose schedule for HIV positive girls. On VPD surveillance, WHO/AFRO is yet to convene a consultative platform to discuss future VPD surveillance priorities and funding needs with diverse stakeholders. However, this has been scheduled for October – November 2018, once the investment case is in an advanced stage. And on immunization and vaccine access in the Middle Income Countries (MICs), the recommended consultative study to explore the potential of pooled vaccine procurement; and identify and address potential barriers to the development of such mechanisms and potential solutions is yet to be implemented.

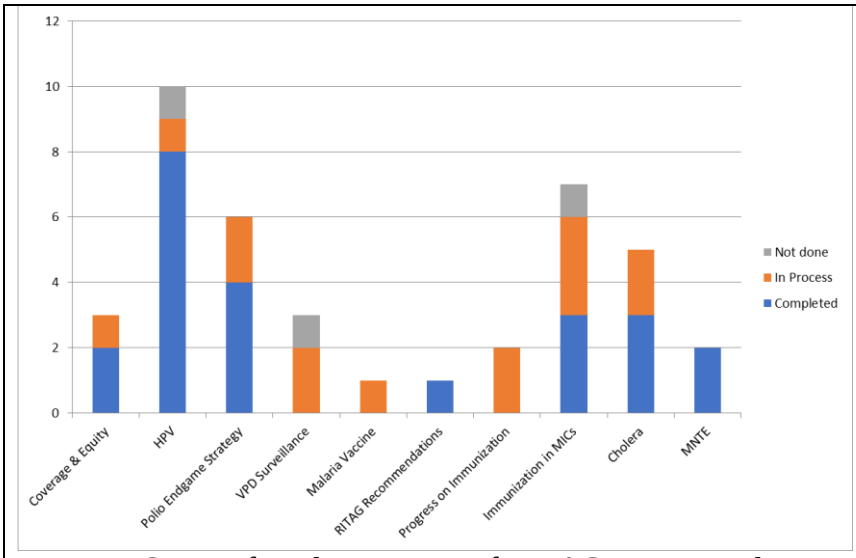

Figure 1: Status of implementation of RITAG recommendations from December 2017

Discussing this, RITAG members commended the steps taken in the implementation of the recommendation. They noted that it is almost feasible to quantify the activities and measure progress. However, it was still suggested that RITAG members make recommendation with identifiable and measurable indicators for future assessment.

3.3 For Discussion and Decision

3.3.1 Influenza vaccines

Influenza burden and surveillance in the WHO African Region

Belinda Herring, WHO/WHE

Influenza occurs globally with an annual attack rate estimated at 5-10% in adults and 20-30% in children. Seasonal epidemics occur mainly during winter in temperate climates and year-round in tropical regions. The mortality rate of seasonal flu in sub-Saharan Africa of 2.8 -16.5/100 000 is similar to that in other regions. Influenza A viruses may also cause worldwide pandemics at intervals of 10 - 40 years. The last pandemic occurred in 2009.

The WHO Pandemic Influenza Preparedness Framework is an international arrangement that aims to improve global pandemic influenza preparedness and response. The Framework brings together Member States, industry, civil society, member states and other stakeholders.

Delivery strategies for influenza vaccines

Joachim Hombach, WHO/HQ

Influenza vaccine introduction and routine use remains an important component of influenza pandemic preparedness. Unfortunately, influenza disease is not considered a priority by most African countries. The use of influenza vaccine is highly biased to three regions, and reflects availability of national policies. Only three countries have a policy for influenza vaccination. Less than one percent of global seasonal influenza vaccine produced is used in Africa. As of 2015, only 115 of 194 countries had influenza vaccine introduced into their national immunization programs. The Seasonal influenza vaccine dose distribution (2015) is more than 250 per 1000 population in the Americas but less than 10 per 1000 in Africa.

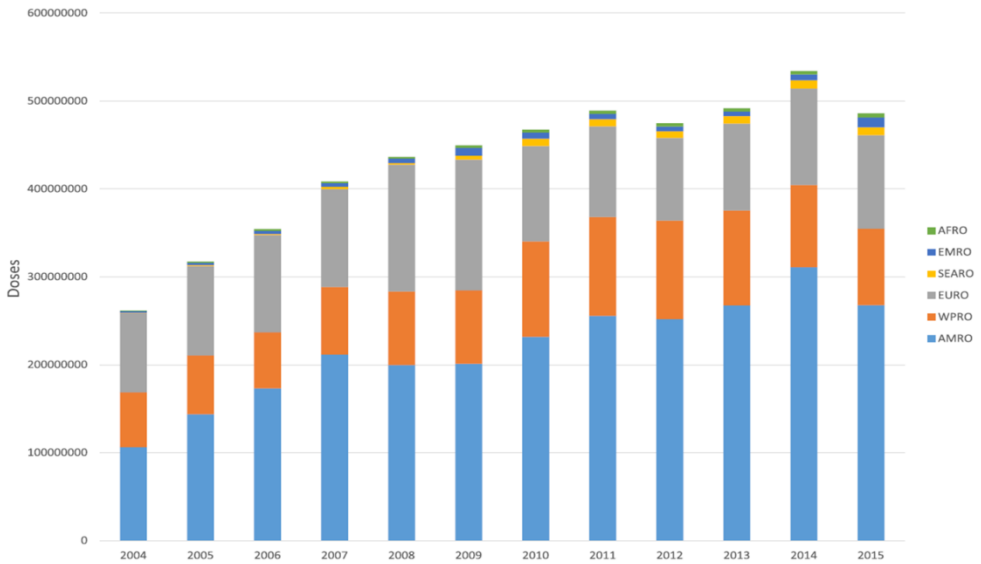

Figure 2: Vaccine doses distributed by WHO regiona 2004-2015
Source: A Palache et al, Vaccine 2017

WHO recommends that pregnant women should have the highest priority in countries considering the initiation or expansion of programmes for seasonal influenza vaccination,. Additional risk groups to be considered for vaccination are children aged 6–59 months, the elderly (>65 years), individuals with specific chronic medical conditions (such as HIV, asthma, and chronic heart or lung diseases), and health-care workers. Risk groups for influenza in low- and middle-income countries are less well defined.

The vaccination of specific risk population, especially pregnant women and HCWs seem to offer particular benefits with regards to vaccine efficacy and feasibility of delivery. Maternal influenza immunization project of WHO has provided a set of tools and guidance's to specifically support vaccine introduction in low resource settings. Evaluations following the introduction of influenza vaccine helped identify challenges including: the need for clarifying the roles and responsibilities of all the actors involved in the planning and management of influenza vaccination; the need for appropriately defining target denominators, for triangulating coverage data with the number of vaccine doses distributed and for including vaccine doses administered in the private sector; and the need to strengthen AEFI surveillance mechanisms

Influenza surveillance platforms are critical for monitoring and communicating the impact of introducing seasonal influenza vaccination. In the AFRO region, 31 countries currently have capacity for influenza PCR surveillance.

Strengthening NITAG capacities for influenza vaccines decision-making

Blanche Anya - AFRO

Detailed information was provided on the 3 countries (Mauritius, South Africa and Cote d'Ivoire) that reported having policies on Influenza vaccination, as well as on the training conducted in Cote d'Ivoire to strengthen capacity of their NITAG. The Partnership for Influenza Vaccine Introduction (PIVI) was presented as an opportunity to strengthen NITAG in Cote d'Ivoire and to support KAP studies in 3 countries (Cote d'Ivoire, Kenya and Uganda) to assess acceptability of the influenza vaccines.

During the discussion, RITAG members noted the huge gap in the uptake of influenza vaccines in the continent, there is a need for more advocacies and for the RITAG to prioritize its uptake in the African Region. The strategy for prioritization should be agreed upon (regional vs country by country prioritization). They requested to understand better the burden of the disease to make the case and through implementation of integrated surveillance around IDSR.

RITAG appreciated the opportunity of the PIVI to strengthen NITAG, however, they noted this was a missed opportunity if the NITAG capacity building activities conducted by PIVI was focused on the single influenza disease and recommended a more holistic approach taking into account other diseases, among others.

3.3.2 TYPHOID

Global & regional typhoid fever disease burden

Kashmira Date, CDC

This highlighted the causes of Typhoid and Paratyphoid (Enteric) fevers whose diagnosis is by bacterial culture with the gold standard being bone marrow culture but not feasible in most settings. Currently, blood culture is the primary diagnostic standard and Widal test, although used in several settings, is not a recommended diagnostic measure. The presentation also highlighted the global burden of typhoid fever as well as various studies in Africa that have underscored the high disease burden of Typhoid in the region.

Year	Global	Sub-Saharan Africa
1986	12.5 million	-
2004	21.65 million typhoid cases 5.41 million paratyphoid cases 216,500 typhoid deaths	409,000 typhoid cases 102,000 paratyphoid cases 4,100 typhoid deaths
2010	Adjusted Estimates 11.9 million typhoid cases, 129,000 typhoid deaths	Adjusted Estimates 3.1 million typhoid cases 33,500 typhoid deaths
2014	17.8 million cases in LMICs Incidence: 283/100,000/yr	7.2 million cases Incidence: 762/100,000/yr
2016	15.5 million cases of typhoid and paratyphoid 153,400 deaths	1.8 million cases of typhoid and paratyphoid 21,500 deaths

Figure 3: Global versus Africa – Enteric Fever Disease Burden Estimates, 1986-2016

Typhoid conjugate vaccines: updated recommendations and policy implications

Adwoa Bentsi-Enchill, WHO/HQ

This presentation gave a background of the various licensed typhoid vaccines and the recently WHO pre-qualified Vi-TT typhoid conjugate vaccine (Typbar-TCV™) manufactured by Bharat Biotech, India. WHO recommendations for the use of typhoid conjugate vaccine, published in a WHO Position Paper in March 2018, include the recommendation for primary vaccination with a single IM dose for infants and children from 6 months of age and adults up to 45 years in typhoid endemic regions. Routine programmatic use at 9 months of age, or in the 2nd year of life is feasible given that co-administration of Typbar-TCV with measles and MMR has shown non-interference of anti-Vi IgG and anti-measles IgG. Catch up vaccination to 15 years of age is also recommended when feasible and supported by epidemiological data.

Figure 4: Vi-TT (Typhar – TCV™ by Bharat Biotech)

The introduction of TCV is to be prioritized in countries with the highest burden of typhoid disease or a high burden of antimicrobial resistant *Salmonella* Typhi. Vaccination has also been recommended in response to confirmed outbreaks and in the context of an outbreak response countries should consider introduction/strengthening of routine immunization.

Update on considerations for TCV introduction and Gavi support to eligible countries ***Pascal Bijleveld, Gavi***

Figure 5: One product that received WHO Prequalification
Source BMGF/Sam Reinders; Bharat Biotech Ltd

The Gavi Board approved the opening of a funding window for typhoid conjugate vaccines in December 2017. Given the heterogeneous nature of typhoid, countries will have the option to choose the most feasible vaccination strategy. However, Gavi will provide support for 1 dose delivered in the routine immunization programme and a one-time single dose catch-up of children up to 15 years of age. Gavi will also finance relevant grants to ensure successful implementation (Vaccine Introduction Grant and operational costs). Gavi will not finance a vaccination strategy based only on catch-up and a routine immunization strategy must be pursued at minimum.

It is also important to note that countries have an option to pursue a risk-based (sub-national) introduction; however, this should be carefully evaluated on risks / benefits and supported by epidemiological, operational and other considerations as per the WHO Position Paper..

Country preparedness for typhoid conjugate vaccines

Aziza Mwisongo, PATH

The Typhoid Vaccine Acceleration Consortium (TyVAC) is led by the Center for Vaccine Development at the University Of Maryland School Of Medicine, the Oxford Vaccine Group at the University of Oxford, and PATH and funded by the Bill & Melinda Gates Foundation.

TyVAC is working to;

- Identify countries for possible early introduction of TCVs in Africa.
- Support existing country decision-making and program preparation processes to secure a positive policy decision.
- Support preparation activities for TCV introduction following policy decision

Figure 6: TyVAC's multidisciplinary strategy to combat typhoid

During the discussion that followed, RITAG members underscored the importance of availability of blood-culture based surveillance data and country-specific burden data prior to vaccine introduction.

3.3.3 Immunization Research

Strategic framework for research on immunization in the WHO African region: Report from the RITAG Working Group

Joseph C. Okeibunor, WHO/AFRO

The presenter gave a brief recap of the development of the framework. A significant point was that following the presentation of the draft framework in December 2017, the RITAG made a number of recommendations. Furthermore, he also noted that a RITAG WORK Group was set up to finalize the framework.


Figure 7: RITAG Working Group on Completion of the SFRI

He proceeded to enumerate the comments and recommendations of the RITAG on the Framework during its December 2017 meeting in Johannesburg, South Africa.

He also showed the steps taken by the RITAG Working Group on the SFRI to address the comments and recommendations in the revised version. Every concern raised by the RITAG was carefully addressed and the group futher introduced new elements to improve on the usefulness of the document.

Proposed recommendation on the SFRI from the RITAG working group

Rose Kambarami, RITAG Member

The presenter called for the endorsement of the Strategic framework, with its three thematic areas of priority researches, in view of the efforts for the working group to effectively address the concerns of the RITAG. She also highlighted the further improvements made on the SFRI as well as recommendations for the consideration of the RITAG members. These recommendations from the RITAG working group on the SFRI were group under two main area, namely research financing and coordination. On research financing, she noted that countries should, in addition to complying with the Abuja, Algiers and Bamako declarations on research funding, explore other financing mechanisms for research. It also called for strong partnership to address and fund research priorities.

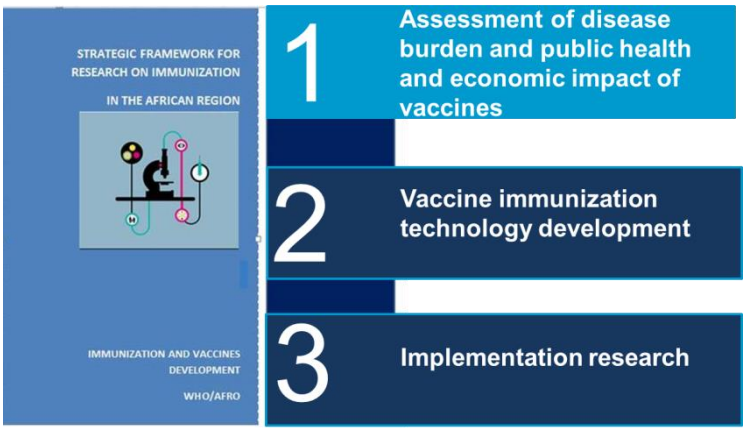

Figure 8: The three thematic areas of research in the SFRI

With regards, to research coordination, she noted that the working group recommended the following:

- Clearing house for immunization research in the African Region
- Immunization Research Committee
- Biennial meeting on immunization research in Africa
    - Celebrating immunization research in Africa;
    - Exchanging ideas;
    - Facilitating collaboration among researchers; and
    - Attracting potential donor interested in funding research in Africa

Following the discussing both presentations, the RITAG requested for a clearer formulation of the Clearing House concept for easy implementation. The RITAG also advised that rather than having another committee just for immunization research, the Regional Director should be encouraged to ensure that the existing advisory committee on research on the Region give sufficient attention to immunization research. It also stressed the need for WHO to advocate to partners and funders to take on the responsibility of organizing the biennial meeting on immunization in Africa. It finally endorsed the SFRI and recommended for its wide circulation.

3.3.4 Ebola Vaccines

Ebola vaccine candidate under clinical development and current SAGE recommendation for the use of rVSV, Ana-Maria Henao-Restrepo, WHO/HQ

The presentation discussed the development of the vaccine, and the details on the clinical trial that is on-going. The results add weight to the interim assessment that rVSV-ZEBOV offers substantial protection against Ebola virus disease EVD), with no cases among vaccinated individuals from day 10 after vaccination in both randomised and non-randomised clusters.

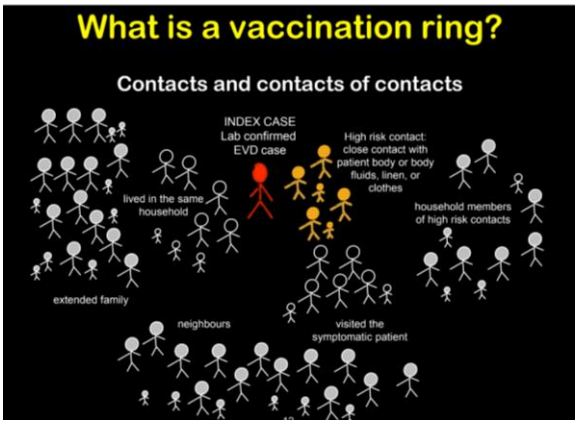

Figure 9: Demonstration on ring vaccination against EVD

Regulatory pathway preparedness for Ebola vaccine

B Akanmori- AFRO/AFRO

The use of the EUAL procedure Product development has become complex driven by situations where there are no counter measures for disease situations. Clinical trials of the vaccines performed much better than those of therapeutics. Pre-qualification (PQ) of products is used to ensure that licensed products are assessed for suitability, safety and efficacy.

The normal regulatory pathway for vaccines shows that risk-benefit assessment is done prior to licensures. National registration by government then assures that importation by country can be done. In some cases the normal pathway is not taken given the situation on ground. WHO developed the emergency use assessment listing (EUAL) to address the gap. One of the criteria to use EUAL is that there is public health emergency of emergency of international concern or country declared emergency. However, some principles discussed in the use of EULA include the following:

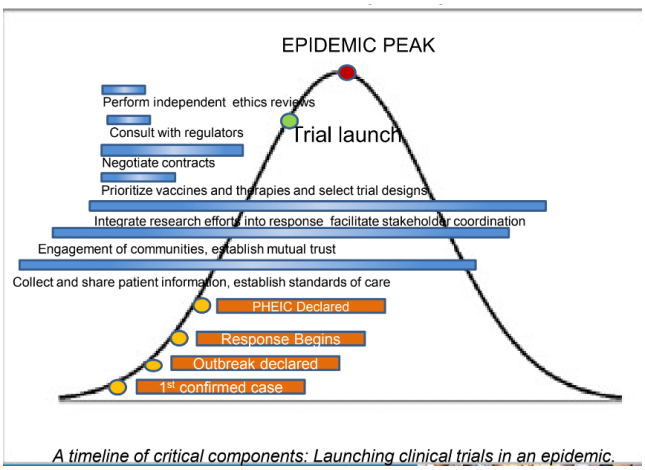

Figure 10: Clinaitrials in Ebola epidemic: Timelines of critical components 2014-2015

- EUAL is not prequalification , but rather a procedure to assess and list products in development (or registered for a different use) for public health emergencies
- Listing under EUAL based on eligibility criteria; a set of quality, safety and efficacy data ; benefit-risk assessment
- Inclusion in the EUAL should not compromise the clinical development of the product

The validity of an emergency EUAL in the context of a public health emergency will generally be for 12 months, following which all decisions for an emergency use listing will be reassessed.

The AVAREF discussed the EUAL and national regulatory frameworks and agreed on the revision of EUAL to adequately address experimental products , and agreed on the need for AVAREF to support countries to utilize outcome of EUAL for implementation of rVSV in public health emergencies.

Ring vaccination with rVSV ZEBOV

Alejandro Costa, WHO/HQ

Trials were conducted in Guinea, one of the countries most affected by an outbreak of Ebola that ended this year, show it offers 100% protection. The vaccine is now being fast-tracked for regulatory approval. Merck has made 300,000 doses of the rVSV-ZEBOV vaccine available for use should Ebola strike. The trial took place in Equateur and Kinshasa provinces in DR Congo. Preliminary results show that 1673 were vaccinated, including first line health workers, contact, and contacts of contacts. Participants were monitored for adverse event for 30 minutes. Challenges include regulatory and ethical approvals. There were also issues in communication, daily reporting of data.

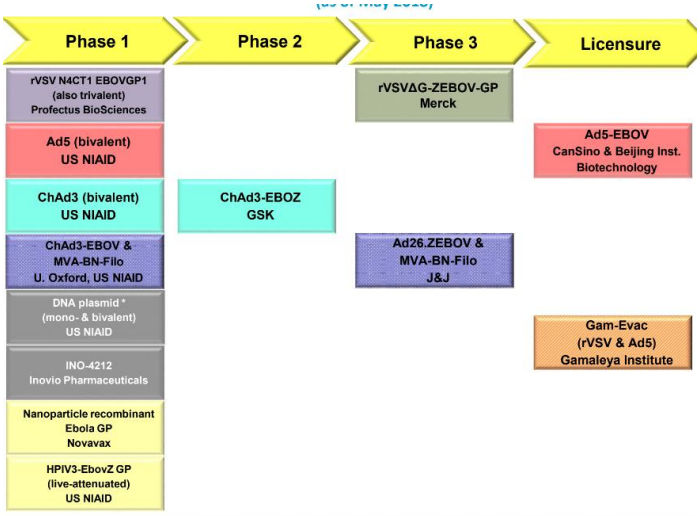

Figure 11: Candidate Ebola vaccines in clinical development (as of May 2018)

Discussions that followed focused essentially on four key issues. These included the PIP framework, which the RITAG considered ripe for review with a view to including issues on Ebola outbreaks. Other had to do with the level of assistance given to countries to develop their respective response plans for vaccines and ways AVAREF could be strengthened to support regulatory authorities in countries. Members noted the need to make recommendations that will make countries to in a perpetual state of readiness.

3.3.5 Polio Eradication and End-Game Strategy

Polio eradication in the African Region: updates and way forward

Ticha Johnson, WHO/AFRO

The Polio Endgame Strategy (2013-18) has the following objectives: Poliovirus detection and interruption; Immunization systems strengthening and introduction of inactivated polio vaccine (IPV); Containment/certification and Transition planning are used to measure progress towards certification of eradication and closure of the program.

As of June 2018, the Polio endemic countries are Afghanistan, Pakistan and Nigeria (with 11 WPV in Afghanistan and Pakistan in the calendar year). In the African Region, Nigeria reported 16 cVDPVs. Outside of Nigeria, 22 cVDPVs (2017-2018) were reported and response was done using mOPV2 in Lake Chad, HOA and DRC.

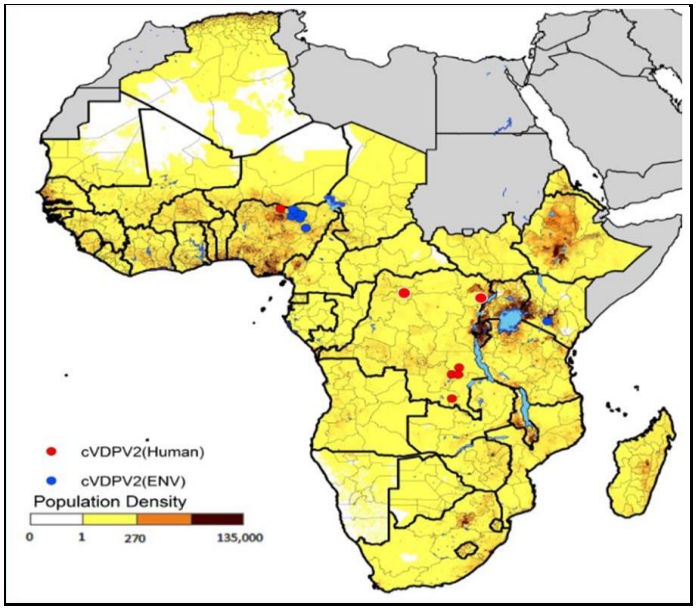

Figure 12: Distribution of cVDPV cases Jan-June 2018

Source: AFP and Environmental Surveillance

There are still sub-national surveillance and immunity gaps in some parts of the region (particularly in Southern and east Africa subregion). Other challenges include insecurity; gaps in Government ownership/support; High staff turnover and Staff accountability. The challenges in Lake Chad basin, HOA and DRC deal with competing outbreaks (Ebola, measles, cholera); Insecurity; Hard to reach areas / logistics; Micro planning, Mobile populations and Refusals. However, the confounding factor specifically in DRC is weak surveillance system, low population immunity from type 2; Low IPV Coverage; Continued use of mOPV type 2.

In order to alleviate surveillance and response challenges, the WHO African Region has initiated GIS and mobile technology based innovations and accountability frameworks. These are now mandatory for all member states as implementation has been linked with country technical and financial support. These innovations include AVADAR Sierra-Leone, Liberia, Nigeria and DRC; ISS Mandatory in all countries; eSURV in Chad in 2108 and Environmental surveillance to supplement the traditional AFP surveillance in identified 22 high risk countries.

MOH DR Congo

The DRC has had several outbreaks due to the importation of WPV type 1 from 2006 – 2010 and a case of cVDPV2 in Kabondo area in 2009. In May 2017, 2 confirmed separate outbreaks of cVDPV2 were detected in the Kunda (Maniema Province) and Butumba (Haut-Lomami Province) areas. In February 2018, DRC declared polio of Public health national emergency, following the notifications of 2 cVDPV in Tanganyika and HK. Five mOPV2 SIAs rounds were planned, but the SIAs were not of high quality, particularly with challenges of access to HTR, risking spreading of cVDPV2 to other countries.

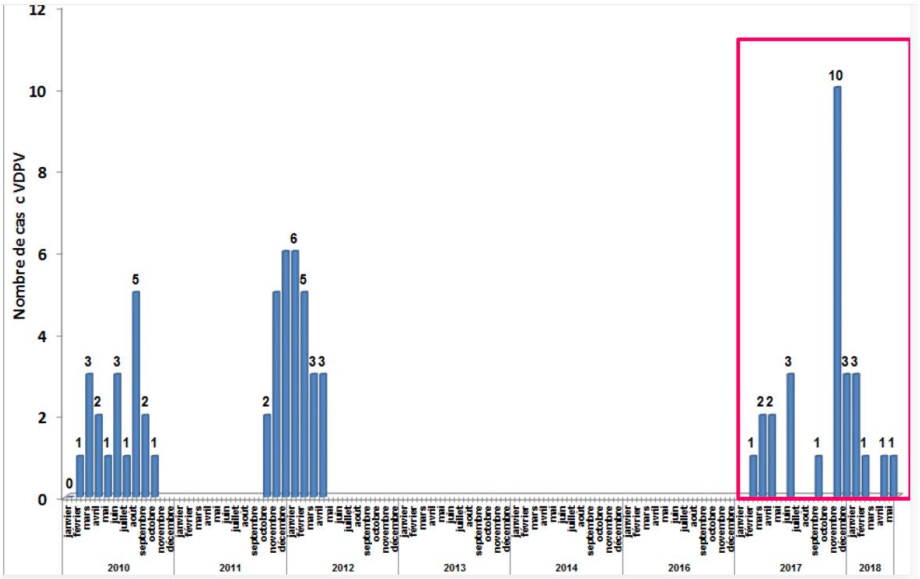

Figure 13: History of notifications of cVDPV2 cases in the DRC (1Jan-28 June, 2018)

With satellite mapping, over 100 villages were identified. There are remaining logistical challenges including natural obstacles as well as roads in bad condition; limited geographic accessibility; areas of insecurity; ongoing Ebola outbreak in Equateur Province ; and the the ongoing polio program ramp down which affected DR Congo in 2017 which in turn decreased capacity for response and surveillance.

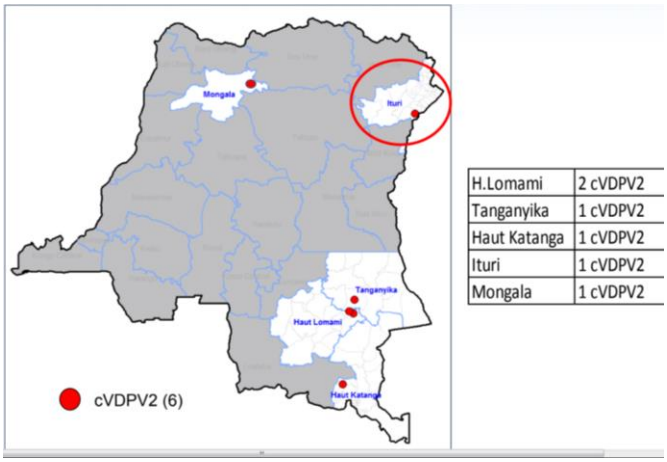

Figure 14: Localization of cVDPV2 cases in DRC, 2018

The priority is to interrupt the cVDPV2 transmission in the country; to Strengthen AFP and environmental surveillance and laboratory monitoring; to strengthen cross-border activities and; strengthening routine immunization using IPV.

Polio Transition planning: Update

Ebru Ekeman, WHO HQ

Polio Transition and development of plan focused on 16 countries with large polio infrastructure. While Nigeria, South Sudan and Somalia are yet to develop plan, 6 other countries have finalized plans of which 5 were endorsed by the respective ICCs. The challenge is to adequately finance and implement the plans (commitments from countries and expectation from donors) as the fragile counties like Somalia, S Sudan and DRC have very little domestic funding to enable critical functions are implemented.

The WHO Global framework for transition defines the needs and has three components: Sustain polio free status with all functions to continue; strengthening support to RI and VPD surveillance. The estimated cost and financing options have also been defined. For surveillance, lab, core functions and Technical Assistance, the cost is estimated to be about US$ 667 million for 5 years. The African region portion has been reflected in the WHO business case for the African Continent. These funds are expected to be covered by GPEI until certification by 2022; bilateral funding and advocacy for domestic funding; any remaining Gap to be mobilized by WHO within the new GPW framework. Within this context, the main pillars are Immunization systems; new comprehensive VPD surveillance Partnership (avoiding dependence of VPD on Polio funding and fragmentations of VPD surveillance); streamlining of polio essential functions into immunization. Thus in conclusion there is a need to manage the transition so that critical functions are maintained.

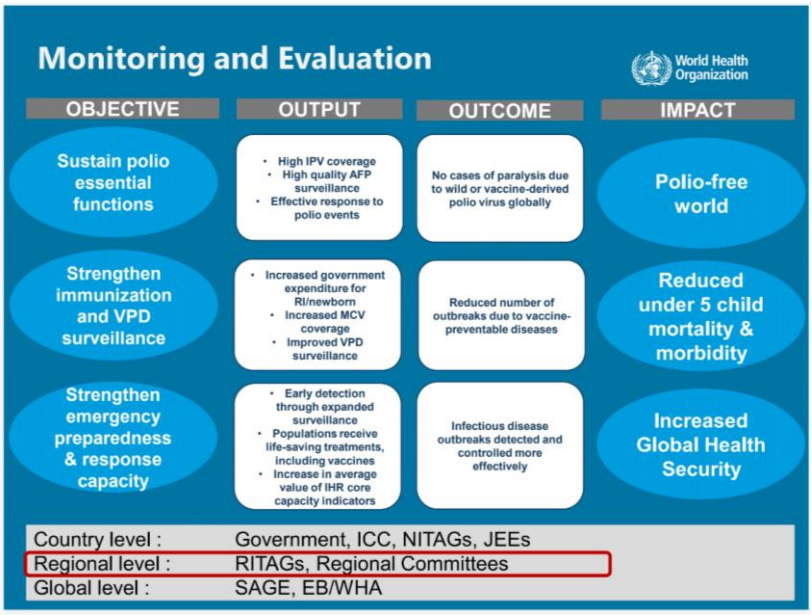

Figure 15: Process for monitoring and evaluating the polio transition framework

During the meeting briefing was provided by audio call by DR Michel Zafran (Polio Director/HQ) and DR Pascal Mkanda (PEP/RO) on challenges in the region particularly in the Lake Chad Basin. In the just concluded Lake Chad meeting, issues were raised with regards to how to reach the hard-to-reach areas. The progress on access to these areas was noted, since all islands were accessed and are doing immunization and surveillance activities. However, some islands in Cameroon territory were not reached. The activities are done by the military. It is thought that surveillance is good but when looking closely, there are some transmissions missed indicating gaps in quality of SIAs. One of the major concerns is also that vaccine management is not accounted for as expected. Operations of outbreak response goes for 18 months and it is reasonable for countries to take over ownership as the program cannot continue as such there is a need to look at how quickly to transition responsibility/ownership back to countries. In addition there anxiety in DRC as there is not enough engagement by the country to stop transmission though there is a promise to do so.

The subsequent discussion included the need to continue to meet funding for critical functions post certification in 2022. For priority countries, WHO will try to help to maintain essential functions to continue till certification and beyond. Other issues raised included the Polio program support to RI, Polio asset mapping, advocacy needs, environmental surveillance , mobile and cross border strategies in DR Congo. It was clarified that transition plans are not WHO plans and they are developed by Government with WHO and UNICEF support. Advocacy for the transition plan advocacy was done at WHA and also at grass root level through WRs. There is a need for transition to be linked with Gavi post-2020 strategy and with accountability and country financing. In the case of DR Congo, the need to strengthen Routine immunization was reiterated along with the need to intensify communication around cVDPV and for countries with no polio cases. Developing an advocacy strategy and engaging of civil society is important.

ANNEX: RITAG Meeting Agenda

Regional Immunization Technical Advisory Group (RITAG) Meeting			
Kigali, Rwanda - 29 & 30 June 2018			
Programme of Work (as of 27 June 2018)			
Friday, 29 June 2018			
Time	**Session**	**Presenter**	**RITAG Lead(s)**
07:30-08h30	Closed-Door Breakfast Session with RITAG Members		
08:00-09:00	Registration		
SESSION 1: OPENING SESSION			
09:00 - 09:10	Welcome remarks	Felicitas Zawaira, WHO	n/a
09:10 - 09:20	Introductory remarks	Helen Rees, RITAG Chair	
09:20 - 09:30	Opening remarks	MoH/Rwanda	
09:30 - 10:30	Update on status of implementation of RITAG recommendations	Balcha Masresha, WHO	
10:30 - 11:00	Group Photo + Refreshment Break		
SESSION 2: INFLUENZA VACCINES			
11:00-13:00	(1) Influenza burden and surveillance in the WHO African Region	Belinda Herring, WHO	Clarisse Loe Loumou, Haroon Saloojee + Folake Olayinka
	(2) Delivery strategies for influenza vaccines	Joachim Hombach, WHO	
	(3) Strengthening NITAG capacities for influenza vaccines decision-making	Blanche Anya, WHO	
13:00 - 14:00	*Lunch*		
SESSION 3: TYPHOID VACCINES			
14:00 - 16:00	(1) Global & regional typhoid fever disease burden	Kashmira Date, CDC	Mohamed-Mahmoud Hacen & Rose Kambarani
	(2) Typhoid conjugate vaccines: updated recommendations and policy implications	Adwoa Bentsi-Enchill, WHO	
	(3) Update on considerations for TCV inroduction and Gavi support to eligible countries	Pascal Bijleveld, Gavi	
	(4) Country preparedness for typhoid conjugate vaccines	Aziza Mwisongo, PATH	
16:00 - 16:15	*Refreshment Break*		
SESSION 4: IMMUNIZATION RESEARCH			
16:15-17:30	(1) Strategic framework for research on immunization in the WHO African region: Report from the RITAG Working Group	Joseph Okeibunor, WHO	Robb Linkins & Ekoe Tetanye
	(2) Proposed recommendation from the RITAG working group	Rose Kambarani, RITAG Member	
17:30	Wrap-Up Day 1	RITAG Chair	
19:00	*Cocktail reception*		
Saturday, 30 June 2018			
Time	**Session**	**Presenter**	**RITAG Lead(s)**
07:30 - 08:45	Closed-Door Breakfast Session with RITAG Members		
SESSION 5: EBOLA VACCINES			
09:00-11:00	(1) Ebola vaccine candidates under clinical development, and current SAGE recommendations for the use of rVSV ZEBOV unlicensed vaccine for Ebola outbreak control	Ana-Maria Henao-Restrepo, WHO	Bill Brieger & Robin Biellik
	(2) Regulatory pathway for Ebola vaccine: the use of the EUAL procedure	Dicky Akanmori, WHO	
	(3) Ring vaccination with rVSV ZEBOV - Guinea & DRCongo outbreak experiences	Alejandro Costa, WHO	
11:00 -11:30	*Refreshment Break*		
SESSION 6: POLIO ERADICATION & END-GAME STRATEGY			
11:30 - 13:30	(1) Polio eradication in the African Region: updates and way forward	Ticha Johnson, WHO	Ephrem Lemango
	(2) cVDPV outbreak in DRCongo - lessons learnt	MoH/DRCongo	
	(3) Polio transition planning update	Ebru Ekeman, WHO	
13:30 - 14:30	*Lunch*		
SESSION 7: DRAFTING RITAG RECOMMENDATIONS (CLOSED DOOR SESSION)*			
14:30 - 16:00	RITAG members to draft recommendations	n/a	All RITAG Members
SESSION 8: WRAP-UP & WAY FORWARD			
16:00 - 16:30	Reporting back at plenary on RITAG draft recommendations	RITAG Chair	n/a
16:30 - 17:00	Setting agenda & dates for next RITAG meeting	RITAG Chair	n/a
17:00	Wrap-up & closure		