



***TECHNICAL ADVISORY GROUP ON
POLIO ERADICATION FOR THE
HORN OF AFRICA COUNTRIES
17TH MEETING REPORT***

2nd to 4th of May 2018
Nairobi, Kenya

POLIO | GLOBAL
ERADICATION
INITIATIVE

CONTENTS

EXECUTIVE SUMMARY	4
PREAMBLE AND OBJECTIVES	7
FINDINGS	8
CONCLUSIONS	12
KEY RECOMMENDATIONS	12
1. Coordination – countries/ region/ partners.....	12
2. Re-build HOA coordination office, support countries	13
3. Supplementary immunization response – cVDPV2.....	14
4. Supplementary immunization response – cVDPV3.....	14
5. AFP surveillance	15
6. Environmental surveillance	16
7. Laboratory surveillance.....	16
8. Data management.....	17
9. Communication for development	17
10. Tracking implementation of TAG recommendations	17
11. Next TAG meeting.....	18
ANNEX 19	
Annex A: Questions to the TAG.....	19
Annex B: Country Summaries.....	21
Annex C: List of participants.....	40

List of Acronyms

AFP	Acute flaccid paralysis
bOPV	Bivalent oral polio vaccine
CDC	Centers for Disease Control and Prevention
cVDPV2	Circulating Vaccine Derived Polio Virus type 2
cVDPV3	Circulating Vaccine Derived Polio Virus type 3
ES	Environmental Sampling
GPEI	Global Polio Eradication Initiative
GPLN	Global Polio Lab Network
HF	Health Facility
HOA	Horn of Africa
ICC	Interagency Coordination Committee
IPV	Inactivated poliovirus vaccine
IGAD	Inter Governmental Authority on Development
IM	Independent Monitoring
ISS	Integrated Supportive Supervision
IST	Intercountry Support Team
LQAS	Lot Quality Assurance Sampling
NGO	Non-governmental organization
NID	National Immunization Days
NPEV	Non Polio Enterovirus
ODK	Open data kit
OBRA	Outbreak Response Assessment
POSE	Polio Outbreak Simulation Exercise
RI	Routine immunization
SIA	Supplementary immunization activity
SNID	Sub-National Immunization Days
SOP	Standard operating procedure
TAG	Technical Advisory Group
UNICEF	United Nations Children's Fund
VDPV	Vaccine Derived Polio Virus
WHO	World Health Organization
WPV	Wild Polio Virus

EXECUTIVE SUMMARY

The 17th meeting of the HOA TAG was held from the 2nd to the 4th of May, 2018 in Nairobi, Kenya under the chairmanship of Dr. Jean-Marc Olivé.

Since the last meeting of the TAG in May 2017, the HOA has experienced an outbreak of circulating Vaccine Derived Poliovirus Type 2 (cVDPV2). Nine isolates of cVDPV2 have been detected in environmental samples in Mogadishu, Somalia and Nairobi, Kenya. The eight environmental surveillance (ES) samples positive for cVDPV2 from Mogadishu were collected between 22nd October 2017 and 22nd February 2018, and the single Nairobi sample was collected on 21st March 2018. Sequencing showed that the virus was circulating undetected several years. **In this context, the TAG considers the outbreak is a Horn of Africa regional outbreak and a public health threat of international concern.** In addition, four circulating Vaccine Derived Poliovirus Type 3 (cVDPV3) were also detected in Mogadishu, Somalia from ES collected in March 2018.

Findings

The TAG noted with regret the cVDPV2s described above, while observing that this current evidence is completely based on environmental surveillance (ES). While the isolates so far are confined to Somalia and Kenya, the TAG considered zones in Ethiopia bordering Somalia as particularly high risk, thus requiring an immediate, coordinated immunization response in all the high risk parts of Somalia, Kenya, and Ethiopia. The TAG is also concerned by the separate emergence of cVDPV3 (so far, a total of 4 isolates) in Mogadishu.

The TAG sees the ongoing presence of unreached children with polio vaccine in pockets of inaccessible areas, as a continued source of major risk for the programme. There are an estimated 2 million children missed, often multiple times, in the HoA's four access-compromised countries (Sudan, South Sudan, Yemen and Somalia).

The TAG is concerned about the slow response by the GPEI to the outbreak (with the exception of Somalia) and the lack of adherence to outbreak response protocols in place regarding a Grade 3 outbreak.

The TAG was encouraged by the interest and involvement of the Inter-Governmental Authority for Development (IGAD) and sees the IGAD platform as a potentially valuable avenue to set up immediate high-level coordination mechanisms for member states.

TAG is deeply concerned with the quality of surveillance in Kenya, Ethiopia and Uganda and the slow steps being taken by the countries to address persistent sub-national surveillance gaps, including in areas with high-risk populations.

TAG noted with concern the persistent underperformance in routine immunization in the Afar and Somali regions of Ethiopia, which continues to lag far behind the rest of the country. TAG also remained concerned by the continuing accumulation of unimmunized and under-immunized children across the HoA due to poor RI especially in South Sudan, Somalia, Yemen, and parts of Ethiopia and Kenya.

The TAG cautioned that the implementation of transition plans should not infringe on country capacity to implement necessary activities to close-out the outbreak.

While noting the need to respond to the cVDPV3 outbreak, the TAG agreed that the response to cVDPV2 should take priority. Accordingly the TAG wishes to send a strong **message of urgency and emergency** to GPEI, to all governments and to development partners and all other stakeholders **to conduct a coordinated and effective regional outbreak response.**

Conclusions

The TAG concluded that considering the prolonged circulation, the exact geographic extent of circulation of the cVDPV2 was very difficult to pinpoint. Similar outbreaks with confirmed cases had previously crossed multiple borders within a short-time. While TAG concluded the current cVDPV2 outbreak is a Horn of Africa outbreak, in addition, it concluded that there was a need to respond to the simultaneously occurring cVDPV3 in the region. However, considering the operational difficulties, agreed, for now, with countries that response to cVDPV2 be prioritized over cVDPV3.

Recommendations

1. Develop a joint outbreak response plan for the HoA, with a declaration of a public health emergency and joint endorsement of regional outbreak response measures by Somalia, Kenya and Ethiopia.
2. The HoA Coordination Office should explore with IGAD the possibility of high level coordination to increase awareness of risk among decision makers.
3. GPEI leadership should use every opportunity to sensitize the highest levels of Governments on the risks associated with the cVDPV2 outbreak.
4. GPEI should immediately rebuild and fully operationalize the HoA Coordination office team.
5. GPEI should immediately deploy short- to medium-term technical support for SIA operational planning, SIA monitoring and implementation, and surveillance improvements, to the three countries conducting the mOPV2 campaigns. In addition, GPEI field staff should be redeployed to the Somali region of Ethiopia and the North Eastern counties of Kenya.
6. Ethiopia should conduct two mOPV2 rounds in all zones bordering the immediate response zone in South-Central Somalia and Northern Kenya, and these rounds should be synchronized with Kenya and Somalia.
7. Countries should immediately develop an AFP surveillance strengthening plan that focuses on the revitalization of active and passive surveillance, starting with the highest priority health facilities (HF). Priority should be given to all low performing districts.
8. Considering the high proportion of either “scheduled but not collected” or “negative” ES sites, conduct an external review of all currently operational environmental surveillance sites in Kenya, Ethiopia, and Uganda with special attention to the processes and procedures of ensuring quality site selection, and adherence to sample collection schedules and procedures.
9. Considering the additional requirements of enhanced AFP surveillance and expanded ES network, the GPLN should review the current laboratory capacities within the region and ensure a plan is in place to meet the emerging needs.

10. Countries outbreak response plans should have a dedicated section that reflects social and communication indicators, including the percentage of missed children and refusals, and clearly defines communication strategies.
11. All countries bordering the Democratic Republic of Congo should develop cross-border coordination plans.
12. Taking into consideration the current outbreak and outbreak response activities and the follow up of recommendations, the TAG should reconvene before the end of the year to review progress.

PREAMBLE AND OBJECTIVES

The 17th meeting of the HOA TAG was held from the 2nd to the 4th of May, 2018 in Nairobi, Kenya under the chairmanship of Dr. Jean-Marc Olivé. The meeting was opened by Dr Jackson Kioko, Director Medical Health Services on behalf of the Cabinet Secretary for Health, Kenya. In attendance were delegations from Ethiopia, Kenya, Sudan, South Sudan, Somalia, Tanzania, Uganda, Zambia and representatives of BMGF, CDC, CORE group, IGAD, Red Cross, Rotary, UNICEF, USAID and WHO.

The last (16th) HOA TAG meeting was held from the 11th to the 12th of May, 2017 in Nairobi, Kenya. The 16th TAG made 3 strategic recommendations, given the risk of importation of virus through out the HOA. First, to maintain population immunity at the highest possible level. Second, to maintain or increase surveillance sensitivity to enable rapid virus detection in case of importation. And third, to develop robust outbreak response plans, tested annually by POSEs.

Since the last meeting of the TAG, the HOA has experienced a regional polio outbreak of circulating Vaccine Derived Poliovirus Type 2 (cVDPV2). A total of eight isolates of cVDPV2 have been detected in environmental samples in Mogadishu Somalia beginning October 2017. Sequencing showed that the virus may have been circulating undetected for several years. On 06 April 2018, another cVDPV2 was isolated in Nairobi Kenya from environmental samples genetically linked with the Somalia outbreak. **In this context, the outbreak is considered a regional outbreak and a public health threat of international concern to the entire HOA region.** In addition, four circulating Vaccine Derived Poliovirus Type 3 (cVDPV3) were also detected in March 2018 in environmental samples in Mogadishu Somalia, providing further evidence of gaps in population immunity, most likely linked to children in security and access compromised areas not being reached with vaccination. To date, all VDPV isolates have been detected through environmental sampling, none from AFP cases or their contacts.

Within the above context the 17th HOA TAG meeting was called with the following objectives:

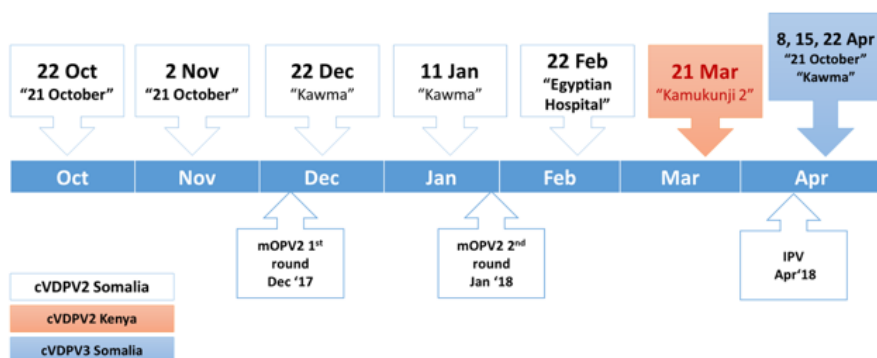
1. To review the cVDPV outbreak situation in Somalia and Kenya, including the implemented and planned response in those and other HOA countries, and provide recommendations as required.
2. To review the following with particular reference to Somalia, Kenya, Yemen, Ethiopia, and South Sudan, and make recommendations as appropriate, concerning:
 - a. The sensitivity of surveillance in countries, particularly with reference to access compromised, high risk, and mobile populations;
 - b. The risks of outbreak following WPV importation/cVDPV emergence, as well as outbreak response preparedness, and risk mitigation strategies;
 - c. Plans for strengthening basic immunization services in the context of polio transition;
 - d. Communication strategies focusing on building and sustaining demand for immunization, particularly in high risk groups.
3. To make recommendations as required to strengthen surveillance and mitigate risks with respect to other HoA countries.

FINDINGS

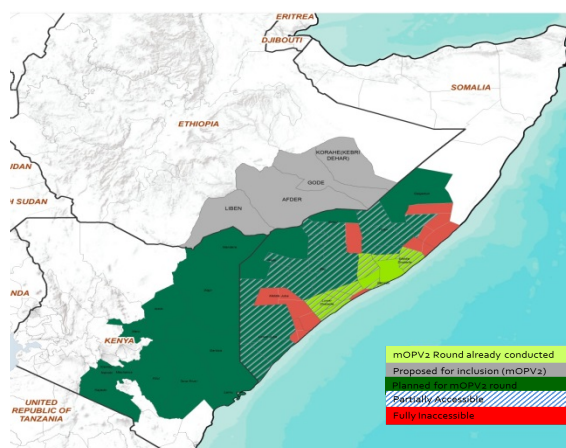
Horn of Africa cVDPV2 outbreak

The TAG noted with regret the detection of circulating VDPV2s in Nairobi, Kenya and Mogadishu, Somalia. (See figure 1 below). Unlike previous outbreaks of WPV and cVDPV2 which were detected quickly through the AFP surveillance system, the TAG noted that this current evidence is completely based on environmental surveillance (ES).

Timeline of isolations and response activities in Somalia and Kenya, 2017 – 2018.



Considering all available epidemiological, virological, population movement and interaction information, the TAG considers the current cVDPV2 outbreak as a Horn of Africa-wide outbreak that requires immediate, coordinated, immunization response in all high risk parts of Somalia, Kenya and Ethiopia (See figure below).



TAG was encouraged by Somalia's speedy response to the outbreak, targeting high risk areas; and by the immediate decision by Kenya to respond. The TAG also considered zones in Ethiopia bordering Somalia as particularly high-risk and should be included in the synchronized response with Somalia and Kenya (June/ July).

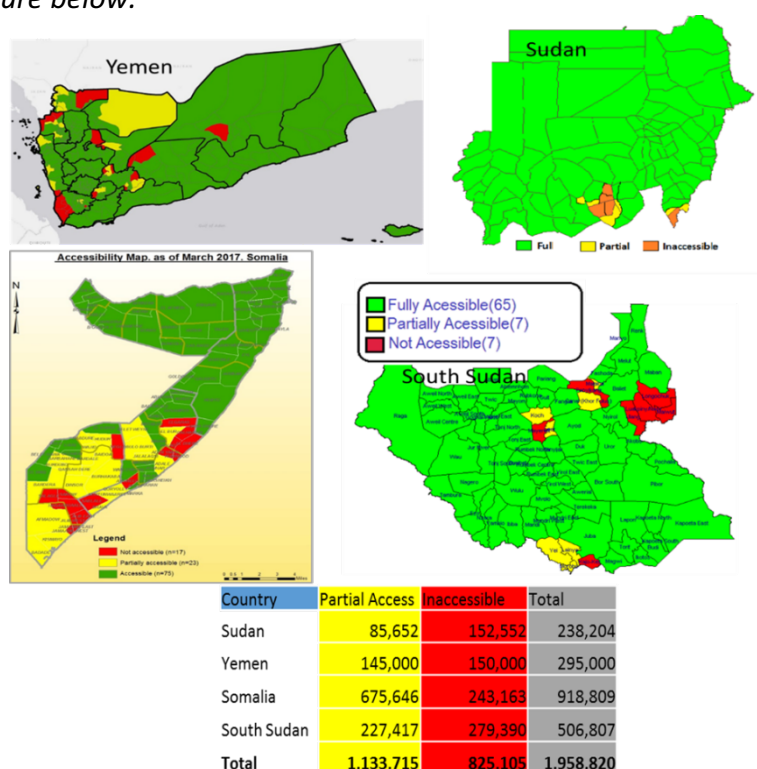
Finally, the TAG sees the DRC cVDPV2 outbreak as a high-risk situation for all countries bordering DRC.

Horn of Africa cVDPV3 outbreak

The TAG is also concerned by the separate emergence of cVDPV3 in Mogadishu, Somalia, notified on 13 April 2018; total of four isolates genetically linked from 2 different environmental sites. This further highlights the risk posed by the on-going presence of inaccessible and under immunized populations especially in South-Central Somalia.

Unreached populations in conflict areas - major source of risk

The TAG continues to see the ongoing presence of children unreached with polio vaccine in pockets of inaccessible areas, as a continued source of major risk for the programme. As shown in the chart below, there are an estimated 2 million children missed, often multiple times, in the HoA's four access-compromised countries (Sudan, South Sudan, Yemen and Somalia). See figure below.



GPEI Coordination, and high-level advocacy

The TAG noted with concern the increasing volume of mobile populations from under immunized areas in DRC to neighbouring countries.

The TAG is concerned about the slow response by the GPEI to the outbreak (with the exception of Somalia) and the lack of adherence to outbreak response protocols in place regarding a Grade 3 outbreak.

The TAG also noted that the programme had already begun to ramp down the Horn of Africa coordination office prior to the outbreak, and the programme is now forced to “reboot” the coordination centre all over again.

The TAG was encouraged by the interest and involvement of the Inter-Governmental Authority for Development (IGAD) and the contribution to the meeting by the IGAD

representative. The TAG sees the IGAD platform as a potentially valuable avenue to set up immediate high-level coordination mechanisms for member states.

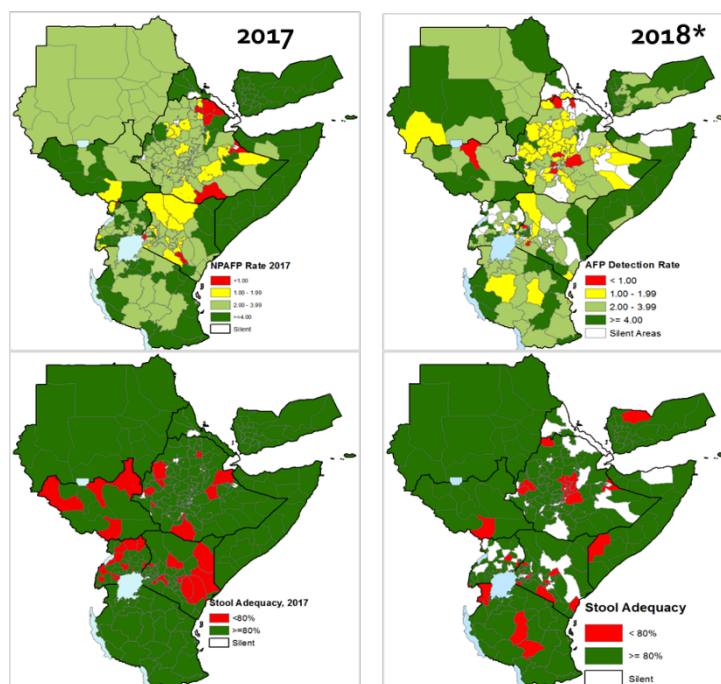
Administrative bottlenecks hindering performance

The TAG regretted the ongoing reports – for the last 2 years – of the difficulties reported by Kenya in the disbursement/allocation of funds to support field work, including collection of environmental surveillance, hiring of field workers and timely provision of logistical support.

The TAG also noted with concern the missed rounds in Sudan (due to unavailability of fuel in the country), South Sudan (due to unavailability of banking/ money agents for operational fund transfer).

Surveillance

TAG is deeply concerned with the quality of surveillance in Kenya, Ethiopia and Uganda and the slow steps been taken by the countries to address persistent sub-national surveillance gaps, including in areas with high-risk populations. TAG is especially concerned about the weak surveillance in major population centres including Nairobi in Kenya, Dire Dawa and Addis Ababa in Ethiopia, and parts of Uganda. *See figure below - AFP Surveillance indicators - HOA.* TAG also notes that the persistent high proportion of AFP cases with unknown immunization status remains an issue in Ethiopia (9%) and Uganda (11%) – 2018 data.



The TAG was encouraged by the added value that the expansion of environmental surveillance has brought to the Horn of Africa.

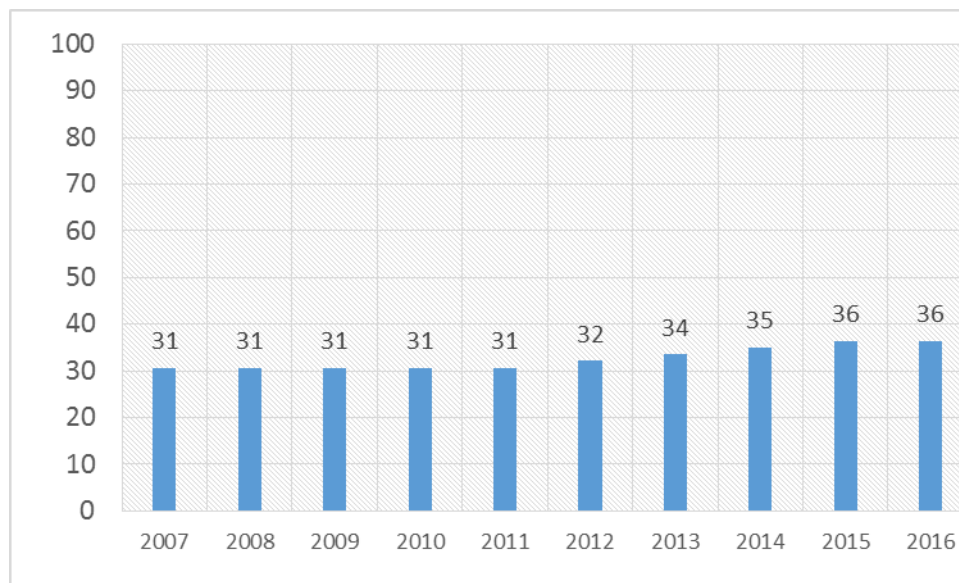
The TAG noted that in Kenya there are simple operational issues that can be addressed by the country programme, that are preventing scheduled collection of ES samples. The TAG is pleased with the growing use of innovative technology to monitor and evaluate performance across the Horn of Africa, and is encouraged by increasing availability of rich data for action from multiple sources.

Through the broader implementation of Integrated Supportive Supervision (ISS) and other mobile data collection systems, the programme now has access to a new set of data including for surveillance, vaccine management and routine immunization (RI).

Weak Routine Immunization

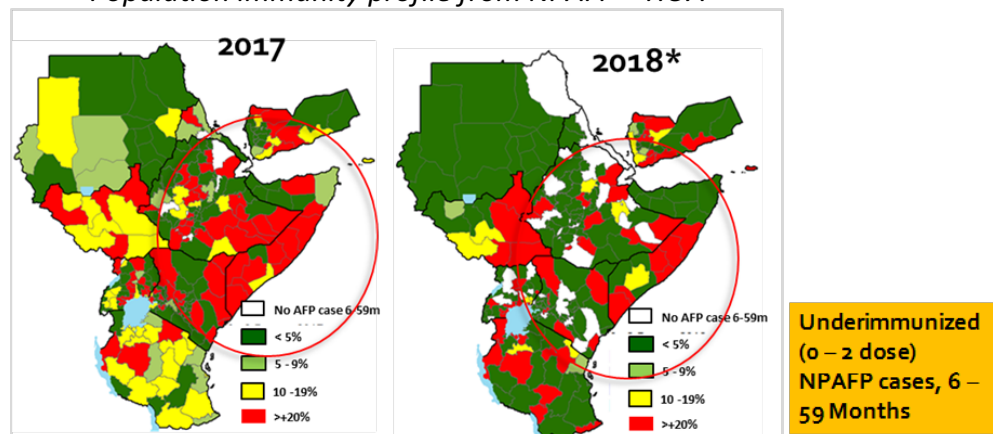
TAG noted with concern the persistent underperformance in routine immunization in the Afar and Somali regions of Ethiopia, which continues to lag far behind the rest of the country. This poor performance continues to pose major risk to the country as whole. *See figure below.*

OPV 3 coverage Somali Region, WHO-UNICEF estimate, 2007-2016



TAG also remained concerned by the continuing accumulation of unimmunized and under-immunized children across the HoA due to poor RI especially in Somalia, South Sudan, Yemen, and parts of Ethiopia and Kenya. Also sub-national immunity gap is observed in many areas. *See figure below.*

Population immunity profile from NPAFP – HOA



Finally, the TAG was concerned about the cumulative number of susceptible for type 2, due to delayed introduction of IPV and low IPV coverage in RI.

Social data and communication strategy

TAG members acknowledge the current focus of community engagement / communication for development interventions in highest risk areas, including conflict, hard-to-reach and inaccessible populations. However, the TAG was disappointed that country presentations often did not describe the use of communication data for strategic decision making.

Polio Transition Plan

Given the imperative for robust outbreak response to the regional polio outbreak, and the need for actions to achieve risk reduction in Horn of Africa countries, **the TAG cautioned that the implementation of transition plans should not infringe on country capacity to implement necessary activities to close-out the outbreak.**

CONCLUSIONS

The TAG considers the cVDPV2 outbreak as a regional Horn of Africa outbreak. The TAG also concludes that there is a need to respond to the cVDPV3 outbreak. Considering the operational difficulties, for now the TAG agrees with countries that response to cVDPV2 should be prioritized over cVDPV3.

Large numbers of missed children, due to inaccessibility and the high population mobility, significantly heighten the risks of cVDPV spread and/ or importation.

Persisting subnational surveillance gaps pose a serious constraint in rapid identification of virus, hence the need for expansion of environmental surveillance and innovation in surveillance and monitoring.

Weak routine immunization also continues to hinder the achievement of interruption of all transmission.

TAG hereby wishes to send a strong **message of urgency and emergency** to GPEI, to all governments and to development partners and all other stakeholders **to conduct a coordinated and effective regional outbreak response.**

KEY RECOMMENDATIONS

1. Coordination – countries/ region/ partners

TAG recommends the development of a Horn of Africa joint outbreak response plan that reinvigorates surveillance, delivers on high-quality response, and mitigates medium- to longer-term risk (*Responsible: HoA Coordination by mid May 2018*)

Considering the risk of cVDPV2 circulation to the countries in the Region and beyond, the TAG recommends a declaration of a public health emergency and joint endorsement of regional outbreak response measures (*Responsible: Kenya, Ethiopia, Somalia by mid-May 2018*)

The TAG requests the Horn of Africa Coordination office to discuss with IGAD representatives the potential for high-level coordination to increase awareness of risk among decision makers, and enhance response at all levels of government (*Responsible: HoA Coordination by mid-May 2018*)

The TAG recommends a concerted effort be made by GPEI leadership to sensitize the highest-levels of government on the risks associated with the cVDPV2 outbreak, and the opportunity of this month's World Health Assembly should not be missed. (*Responsible: GPEI Strategy Committee*)

Considering the difficulties in fully adhering to the outbreak response protocols outlined in the SOPs for the response to events and outbreaks, the TAG recommends a careful review and necessary adjustments to current procedures (*Responsible: GPEI EOMG by mid-July 2018*).

2. Re-build HOA coordination office, support countries

The programme should immediately rebuild and fully operationalize the Horn of Africa coordination office team by 1st June. All GPEI partners should post, at least to the end of the year, strong complementary and senior technical staff (including a senior C4D officer) and support officers to assist in the coordination and response efforts (*Responsible: GPEI EOMG by end June*).

The programme should deploy short- to medium-term technical support for SIA operational planning, SIA monitoring and implementation and surveillance improvements to countries conducting mOPV2 campaign (*Responsible: GPEI EOMG by 1st June 2018*).

Considering the high-risk situation currently faced, the TAG recommends the identification, training and deployment of field staff capable of working: (1) in the high-risk areas of the Somali regional administration in Ethiopia, and (2) in counties in Kenya bordering Somalia (*Responsible: Kenya and Ethiopia by mid-June 2018*)

The TAG recommends prioritizing redeployment of GPEI field staff to the Somali region of Ethiopia and North Eastern counties of Kenya (*Responsible: HoA Coordination office by mid-June 2018*).

The TAG recommends convening a joint mid-level coordination and planning meeting of field operational staff from (1) border regions of Somalia, (2) counties of Kenya conducting mOPV2 SIAs in June and July, and (3) the four southernmost zones of the Somali region of Ethiopia (*Responsible: Horn of Africa Coordination by end-May 2018*)

TAG requests an urgent solution be found to address the difficulties reported by Kenya in the disbursement/allocation of funds to support field work (*Responsible: Kenya by end June*).

3. Supplementary immunization response – cVDPV2

To reiterate, the TAG considers the cVDPV2 outbreak as a Horn of Africa regional outbreak with particular risk for Ethiopia, Kenya and Somalia. The TAG endorses the plan presented by Somalia and Kenya for mOPV2 response campaigns and **strongly recommends that Ethiopia conduct 2 mOPV2 rounds in all zones bordering the immediate response zone in South-Central Somalia and Northern Kenya.** These rounds should be synchronized among Kenya, Somalia and Ethiopia. The Horn of Africa Coordination office is requested to facilitate coordination among countries and assist in the finalization of the targeted area for all involved countries. Adjustments may be made as necessary depending on evolving epidemiology. *(Responsible: Ethiopia, Horn of Africa Coordination).*

Speed of response is extremely important; implement all planned and recommended SIAs as scheduled *(See figure below).* *(Responsible: Kenya, Ethiopia, and Somalia).*

Synchronized mOPV2 response planned and proposed - HOA (2018)

Country	Planned and recommended SIA Activities in 2018 - cVDPV2 Outbreak Response - HOA											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ETHIOPIA						SNID Round 1: mOPV2 - borders	SNID Round 2: mOPV2 - borders					
KENYA					SNID Round 0: mOPV2 - 1 County	SNID Round 1: mOPV2 - 12 County	SNID Round 2: mOPV2 - 12 County					
SOMALIA					SNID: mOPV2 - Banadir, M Shabelle, L Shabelle	SNID Round 1: mOPV2 - South- Central*	SNID Round 2: mOPV2 South- Central*					

*SOMALIA:
SNID Round 1: All South and Central except Banadir, M Shabelle and L Shabelle

TAG advocates increasing IPV coverage in RI (all countries) and securing the prompt catch-up of the missed cohort with IPV *(Tanzania and Zambia)*

4. Supplementary immunization response – cVDPV3

The TAG endorses the Somalia plan for the response to cVDPV3.

To further mitigate risk, in addition to the approved and budgeted bOPV rounds, the TAG recommends a synchronized additional bOPV SNID with Somalia, in the Somali region of Ethiopia and the high-risk counties of Kenya. The Horn of Africa coordination office is requested to ensure the additional rounds are separately flagged as “outbreak rounds” and communicated accordingly. *(See figure below).* *(Responsible: Kenya, Ethiopia, Horn of Africa Coordination).*

SIA bOPV ACTIVITIES PLANNED AND PROPOSED- HOA (2018)

Country	Planned and Proposed bOPV SIAs Activities in 2018							
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ETHIOPIA				SNID bOPV 13%		SNID bOPV 13%		
KENYA				SNID bOPV 15%		SNID bOPV 15%		
SOMALIA		NID bOPV*		SNID bOPV*		NID bOPV		
S/SUDAN							NID bOPV	
SUDAN	SNID bOPV 50%						SNID bOPV 50%	
UGANDA								
YEMEN	NID bOPV					NID bOPV		

*SOMALIA:

NID bOPV – excluding Banadir, M Shabelle and L Shabelle (that will conduct MOPV2 response in these regions)

SNID Somalia – only in Banadir, M Shabelle and L Shabelle



The TAG endorses the approved SIA plans for the remaining countries (*Responsible: Sudan, South Sudan, and Yemen*).

The TAG recommends to AFRO and the IST:

- The development of cross-border coordination plan by all countries bordering DRC
- In Zambia, considering the recent detection of a case in Likasi, special attention should be placed on the Copper belt. (*Responsible: WHO IST/ESA, WHO AFRO*)

5. AFP surveillance

The TAG is extremely concerned by the weak surveillance quality especially in parts of Somalia, Kenya, Uganda and Ethiopia. TAG recommends the immediate development of a 'back to basics' AFP surveillance strengthening plan that focuses on the revitalization of active and passive surveillance, starting with the highest priority health facilities (HF). Priority should be given to all low performing districts. The long standing issue of AFP cases with unknown immunization status in Ethiopia and Uganda should be addressed through this effort. (*Responsible: Somalia, Uganda, Kenya and Ethiopia*).

The TAG endorses plans for the systematic review of facility-based active and passive surveillance, starting from Banadir region, and covering all Somalia (*Responsible: Somalia*)

The TAG encourages the expanded use of integrated supportive surveillance (ISS) and other mobile phone based tools to enhance active surveillance. (*Responsible: all countries*).

The TAG is concerned with the limited geographic extent of ISS visits in Northern Uganda and Northern Kenya, and recommends enhanced supervision and validation of active surveillance in bordering areas with South Sudan and DRC (*Responsible: Kenya, Uganda*).

The TAG feels the prolonged stool sample shipment delays in Yemen pose a new challenge to the programme; out-of-the-box solutions to urgently address this recurring crisis should be sought (*Responsible: WHO EMRO, Yemen*)

To support the enhancement of AFP reporting in areas with high-risk populations, the TAG recommends the full utilization of all available human resources including those of the more than 400 community volunteers in the Core Group working along the border of Kenya and Ethiopia with Somalia (*Responsible: Kenya and Ethiopia*).

The TAG recommends a review for potential reasons of low isolation of NPEV including assessment of reverse cold-chain processes. Special focus be given to those sub-national levels that have reported “0% NPEV” in both 2016 and 2017 (*Responsible: all countries*).

6. Environmental surveillance

Considering the high proportion of either “scheduled but not collected” or “negative” sites, the TAG recommends the external review of all currently operational environmental surveillance sites in Kenya, Ethiopia, and Uganda with special attention to the processes and procedures of ensuring quality site selection and adherence to sample collection schedules and procedures (*Responsible: HoA Coordination*)

The TAG is concerned about the persistent interruption of collection of samples in Garissa, Mombasa and Kisumu Kenya and recommends procedures including accountability action be taken to address this operational problem (*Responsible: Kenya*)

The TAG recommends the expansion of ES network in Kenya and Ethiopia particularly to areas with high-risk populations in Dire Dawa and Addis Ababa, Ethiopia, and Nairobi and other major towns of Kenya. In considering expansion needs, the TAG recommends limiting the frequency of collection to not more than biweekly in all countries (*Responsible: Ethiopia and Kenya*)

The TAG recommends, with close coordination with the GPLN and AFRO, the expansion of environmental surveillance to Tanzania (*Responsible: HoA Coordination and Tanzania*)

7. Laboratory surveillance

Considering the observed phenomenon of low-incidence of paralytic polio from the current HoA cVDPV2, the programme should explore all possible avenues to identify the areas of primary circulation and the geographic extent of the current outbreak. In this regard, the TAG considers the role of the laboratory to be especially critical. Considering the additional requirements of enhanced AFP surveillance and expanded ES network, the GPLN should review the current laboratory capacities within the region and ensure a plan is in place to meet the emerging needs. (*Responsible: GPLN by 1st July 2018*).

TAG notes the progress made by Ethiopia in enhancing lab capacity and recommends immediate steps be taken to minimize risk of contamination, particularly to ensure that ES and AFP samples are processed in appropriate laboratory infrastructure (*Responsible: GPLN, AFRO and Ethiopia by 1st July 2018*).

8. Data management

Populations inaccessible to vaccinators pose the greatest persistent risk to the programme. The TAG appreciated the disaggregated analysis of programme data by accessibility status conducted by the Somalia team. All countries facing accessibility issues should review their demographic, surveillance and immunization data and provide analysis by access status (*Responsible: HoA Coordination, Somalia, South Sudan, Sudan, and Yemen*).

All zero dose and/or confirmed cases must have joint investigation (epidemiological **and** social investigations). (*Responsible: HoA coordination*)

9. Communication for development

OUTBREAK COUNTRIES

Countries outbreak response plans should have a dedicated section that reflects social and communication indicators, including the percentage of missed children and refusals; and clearly defines communication strategies to enhance skills of mobilizers and vaccinators; and update microplans with social mobilization information.

Somalia: Systematically collect standardized information on communication indicators through existing monitoring mechanisms such as IM or LQAS, where possible

Kenya: As part of pre-campaign activities for June and July rounds, collect information on C4D indicators, including vaccine hesitancy, and then conduct post-campaign, rapid assessment on indicators after each round.

SURROUNDING COUNTRIES/AT RISK: Ethiopia, South Sudan, Yemen

TAG members call upon all neighboring countries of the outbreak to immediately update C4D outbreak preparedness plans and preposition resources/materials that could be used in an outbreak response (e.g. drafting plans, budget preparation, media landscape analysis, integrate polio-related social/behavioural data questions into current studies, research and evaluation opportunities).

OTHER COUNTRIES: Sudan, Tanzania, Uganda, Zambia,

Review current C4D-related (communication, behaviour change) data already being collected and incorporate potential questions that would be relevant to developing outbreak preparedness responses. Incorporate C4D information in detailed epidemiological investigations.

10. Tracking implementation of TAG recommendations

On a monthly basis, report on the status of the implementation of TAG recommendations (*Responsible: HoA Coordination*).

Quarterly meetings of the Horn of Africa GPEI partners to review progress on outbreak response and surveillance enhancement measures (*Responsible: HoA Coordination*).

11. Next TAG meeting

Taking into consideration the current outbreak and outbreak response activities and the follow up of recommendations, the TAG should reconvene before the end of the year to review progress. (*Responsible: AFRO & EMRO*).

ANNEXES

Annex A: Questions to the TAG

Q&A – TAG – HOA

1. Question:

From the information and risk presented, what will be the TAG assessment of the possibility of spread throughout other Horn of Africa countries?

Answer:

The origin of the virus is unknown and the risk of further circulation exists. All HOA countries should be in high alert and with preparedness OB plans ready for action.

2. Question:

Surveillance gaps across many countries are apparent, addressing them quickly requires major, focused, coordinated support from all levels to the countries and the coordinating units. Does the TAG think there's need to do more reviews and POSE's until gaps already identified are addressed?

Answer:

Priority should be to have a functional multi-partner team in the HOA to address the existing known gaps and focus on outbreak response with full implementation of OB response plan and high quality interventions. Prioritize OB response training and SOP training in all HOA countries. Consider POSE in the HOA countries that did not conduct any POSE last year.

3. Question:

Environmental surveillance expansion?

Answer:

ES expansion needs to take into account the country and laboratory capacity. New Env Sites should be selected in suitable high risk areas.

4. Question:

In light of the cVDPV3 outbreak in Somalia and the low routine immunization in many high-risk areas, is the way forward, including the 2018 EOMG proposed SIA calendar for HOA appropriate?

Answer:

Based on previous SIA cancellations, bOPV SIA calendar should be updated (accomplished during the TAG meeting).

Q&A – TAG – ETHIOPIA

1. Question:

In the presence of weak RI system, generally low population immunity and other contextual risk factors for emergence and circulation of VDPV,

What is the stand of TAG on use of mOPV2 in high risk areas of Ethiopia? If yes, what is the recommended extent of mOPV2 campaign

Answer:

Due to the current outbreak in Somalia, it is a Public Health Emergency in the all HOA region. The bordering areas with Somalia and Kenya due to high population movement and low immunity should be covered with mOPV2 rounds in coordination/synchronized with Somalia and Kenya.

2. Question:

With limited capacity in Somali and other under developed regions, what is your reflection on the consensus of accelerating the implementation of polio transition and ramp down to Ethiopia?

Answer:

In the bordering areas with outbreak countries, focus on response and surveillance should continue. Polio staff from other regions outside the OB zone can support the bordering areas – reallocation and better use of resources at country level.

Q&A – TAG – SOUTH SUDAN

1. Question:

Given the current situation of PEI in the HOA, challenging situations in South Sudan (low RI coverage, unreached counties, data quality /denominator problems, accessibility) and polio transition, how will the Country maintain a Polio free status?

Answer:

Workforce assigned to surveillance activities is an essential component of the country human resources. If polio funding has to be reduced, other partners should ensure that the surveillance function remains.

Q&A – TAG – TANZANIA

1. Question:

Given the risk of importation of cVDPV2 from countries with on going circulation (DRC and Kenya)

- The delayed IPV introduction after switch of tOPV to bOPV (May, 2016)
- Free movement of refugees across the long western border

We need HoA -TAG to advise and recommend on what action could be appropriate for Tanzania.

Answer: TAG recommendations have addressed this question.

Annex B: Country Summaries

Country Summary: Ethiopia

Background: Ethiopia is administratively divided into nine regions and 2 city administrations, 100 zones and over 16,000 Kebeles (smallest administrative units). The total population of Ethiopia is estimated at 95.5 Million (CSA, 2017) and 80% of the population lives in rural areas. Agro and mobile pastoralist constitutes 13,238,535 (14%). People live in 134 border woredas is estimated at 12 million and are mostly included in pastoralist community. In addition, about 812,000 refugees distributed in camps and close to 1 million IDPs as a result of ongoing drought and minor communal clashes in some part of the country. Moreover, urban poor, migratory and marginalized communities are also included in special population.

AFP surveillance: In 2017, the non-polio AFP rate and stool adequacy rate was 2.6 and 92% respectively. As of epidemiological Week 17, 2018, Ethiopia reported 284 AFP cases. Non-polio AFP rate (annualized) 1.9/100,000 less than 15 years of old children age while the stool adequacy rate 94%. About 83% of stools have arrived in good condition and the NPENT isolation rate is 5.7%. No polio compatibles case reported in 2018. Fifteen zones are yet to report AFP cases in 2018. About half (46%) of zones have achieved both non-polio AFP and stool adequacy rates while 28% are silent.

Out of the 35 high risk zones (35% of the total), 18 zones (51%) have achieved the two key AFP surveillance indicators while 7 (20%) and 7(28%) of the zones did not meet one of the key indicators and are silent, respectively. Of the silent zones, two are from Somali, three from Afar, two each from Oromia and Gambella, and one each from Benishangul Gumuz. OPV status of non-polio AFP cases age 6 to 59 months indicates that 74% have received three or more doses, 5% are with '0' OPV doses and 10 % are with unknown OPV doses. The OPV status of non-polio AFP cases aged 6 to 59 months in Somali Region shows that only 44% have received 3 or more doses while 17% are not received any OPV dose.

Routine Immunization: National OPV 3 coverage for the last three years (2015-2017) was 94%, 89% and 92.5%, respectively. Though data quality issues are still a challenge, OPV3 coverage in Afar in 2017 was 82% and five (14%) woredas reported <50% while 15(42%) reported between 50-79% and the remaining woredas reported >80%. Regional coverage in Somali Region was 76% and 15 (23%) reported <50%, 20 (31%) between 50-79% while the remaining achieved >80%. Regional coverage in Gambella Region was 77% and 2 (13%) reported <50%, 5(33%) between 50-79% while the remaining achieved >80%. Routine Immunization coverage in Benishangul Gumuz is one of the highest in the country.

Polio Supplemental Immunization Activities: Two rounds (September and December 2017) of sub national SIAs targeting high risk Zones (33%) of the population were conducted in 2017, targeting 5, 047,326 children less than five years old. The coverage as indicated by IM was

95% and 96%. Only one Zone each in September & December 2017 reported between 80-89% and four zones in September and one Zone in December 2017 round reported between 90-94%.

Communication for Development (C4D): The communication team supported the implementation of polio campaign which was conducted in August and December 2017. National Communication Working Group (CWG) developed a communication plan and followed up implementations. Relevant messages developed and disseminated using various channels. Advocacy visit was made to selected regions' sector bureau heads to foster support for the SIAs. The community structures such as health development/women development armies and other networks were engaged to mobilize the community. Moreover, health workers were also trained on polio communication strategy and key messages during SIAs.

Cold chain capacity and vaccine management: Significant actions were taken in cold chain during the previous years including installation of 34 cold rooms at central and sub-national hubs, procurement of 20 refrigerated trucks, 376 ILR, 2,244 SDD refrigerators, 8,000 vaccine carriers and 3,000 cold boxes. A total of 8,134 SDD refrigerators are also in the process of procurement. With these, cold chain storage spaces available at national and regional hubs and health facility levels are more or less adequate to support both RI and SIAs.

Preparedness for Outbreak Response: The National Polio Outbreak Preparedness and Response Plan was developed so that the country would be prepared for a possible outbreak of wild poliovirus (WPV) or vaccine derived polio virus (VDPV). The plan was prepared in line with the global standard Operating Procedure (SOP) and endorsed by the ICC.

Polio Transition Plan: Ethiopia has developed Polio Transition plan for 2018-2022. From January 2021 the government will take full responsibility to conduct and mainstream them to national health system. The challenges in Polio Transition Plan will be inadequate resource mobilization, government technical and financial readiness to take-over and mainstream polio functions to national health priorities, and the losing well experienced polio funded officers could affect quality of post-polio certification strategic plan. The polio transition plan was endorsed by ICC and a date for the donors' round table set for early June 2018.

Challenges: Challenges include sub-optimal immunization coverage with wide variation in coverage and quality among regions; sub-optimal surveillance, particularly in border and high risk areas of the country; existing circulation of Vaccine Derived Polio Virus in Somalia; and increased population movement within Ethiopia as well as across its international borders (refugees, IDPs), increasing the risk for importation of polio virus. Polio ramp down also affected the operations and workforce moral and job security.

Technical and financial support required: Technical support is also required for Environmental Surveillance sites review and expand in Somali region. POSE training and

exercise are also tentatively planned. Financial support is required for (i) re-deploying local STOP in hard to reach zones in Somali and Gambella regions, (ii) training /sensitization of communities, informal and private practitioners, health workers in government and refugee camps, (iii) Quarterly review meeting at zonal levels, (iv) active case search visits by government counterparts, (v) Routine Immunization strengthening at borders and permanent crossing points, (vi) Supporting implementation of RIIP in Somali Region and (vii) PHEM system strengthening activities in relation to Emergency Response and Resilience.

Country Summary: Kenya

Background: Kenya's last indigenous case of wild poliovirus was reported in 1984. The country presented its documentation to the Africa Regional Certification Commission in 2005 which was accepted. Since then the country has had several imported WPV1 outbreaks in 2006, 2009, 2011 and 2013. The last confirmed case of WPV1 had onset of paralysis on 14 July 2013. Following the 2013 outbreak, 14 rounds of SIAs were conducted in 2013-2014. The outbreak was declared closed in June 2015 and since then 7 preventive SIAs have been conducted in 2015-2017.

Environmental Surveillance was established in Kenya from 2013 to complement AFP surveillance. Currently, the country has 9 collection sites located in 4 cities namely; Nairobi, Mombasa, Kisumu and Garissa. A sample collected in October 12th 2013 in Eastleigh, Kamukunji sub-county, Nairobi County yielded WPV1. In April 2016, VDPV2 was isolated from a sample collected in December 2015 from the same site in Nairobi County. The VDPV2 had no genetic linkage to other VDPVs and no evidence of circulation.

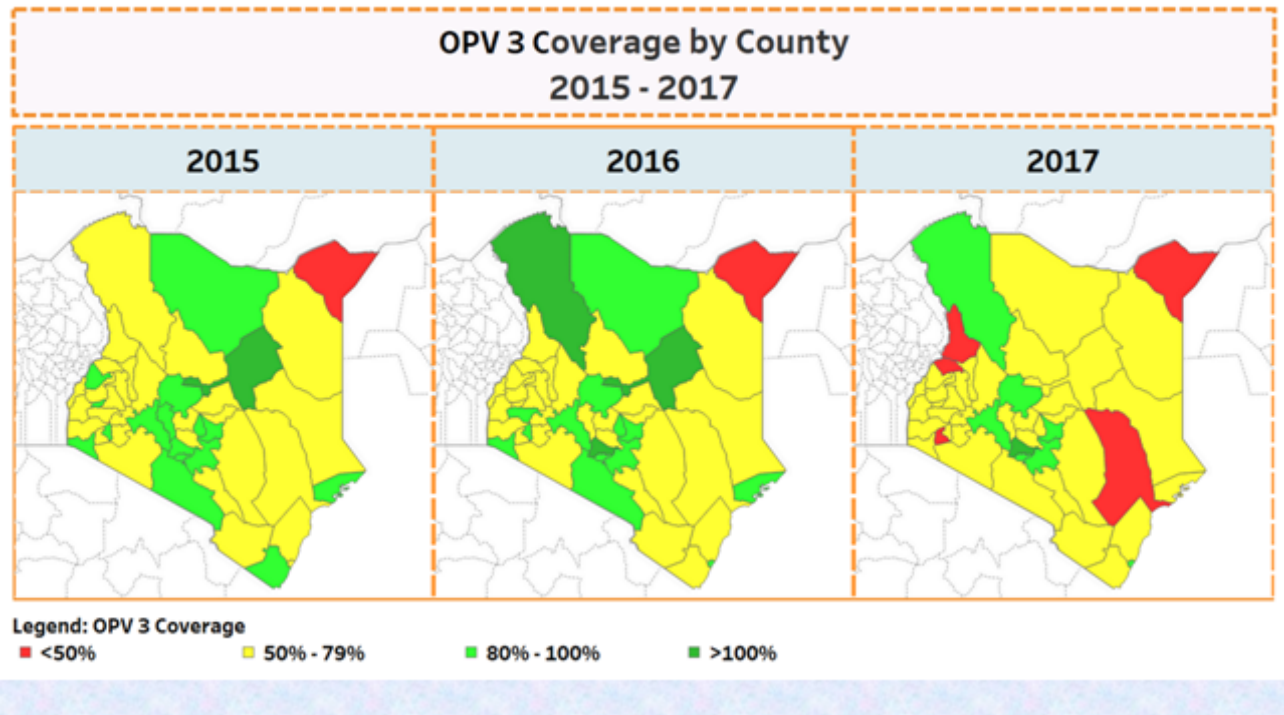
A VDPV type 2 was isolated from an environmental sample collected on 21 March 2018 in Kamukunji Site 2 in Nairobi. Sequencing results showed 47 nucleotide changes from parent Sabin 2 closely related to cVDPV2 isolated in Somalia ES in Oct & Nov 2017. The KEMRI polio laboratory reported the initial results on 6 April 2018 and the sequencing results were received on 11 April 2018 from the CDC Lab, Atlanta.

The health sector in Kenya has suffered from industrial action with a nationwide doctors' strike between December 2016 and March 2017. Between January and June 2017, nurses took industrial action in various counties; the situation worsened after June with a nationwide nurses' strike that lasted until October 2017. The successive industrial action by the various cadres of health workers took its toll on performance of the health system and is reflected in the decline of performance indicators for both AFP surveillance and routine immunization.

AFP surveillance: As of the epidemiological week 15 of 2018, 153 AFP cases have been reported in from 42/47 counties cf. 164 cases during the similar period in 2017. The national non-polio AFP rate is currently at 2.51 and stool adequacy of 90%. 30 counties (68%) have met the minimum required non-polio AFP rate of $\geq 2/100,000$, while 32 (68%) have stool adequacy of $\geq 80\%$ in 2018. 90% AFP cases had 3+ doses of OPV in 2018 cf. 85% during similar period in 2017. Unknown vaccination history in 2018 is 0%, similar to same period in 2017.

Immunization campaigns: No vaccination campaigns have been conducted since the last TAG meeting.

Routine immunization coverage:



Country Summary: Somalia

Overview: Somalia is currently responding to concurrent cVDPV2 and cVDPV3 outbreaks. While the country had great success in eliminating wild poliovirus, the newly declared outbreaks of vaccine derived poliovirus detected in environmental surveillance highlight that there are still vulnerabilities in the population immunity and high risk of polio transmission.

Somalia has celebrated more than 3 years and 8 months since the last case of wildpolio paralysis was reported in Mudug region in August 11, 2014. Most of the recommendations made by the 16th HoA TAG are being implemented accordingly, and the implementation progress of these recommendations is monitored and reported in the Monthly SITREP (until Dec 2017). Despite these significant successes, the country now faces new challenges to respond to the concurrent cVDPV outbreaks in a challenging context with issues of security and accessibility.

Outbreaks and Response: cVDPV2 Outbreak: Environmental surveillance was established in late 2017, PV2 was first isolated from '21 October' site in Waberi district in Banadir region on 22nd October 2017. Sequencing results identified the isolate as VDPV2 with 38 nucleotide differences from Sabin 2. The VP1 sequence for the isolate was not genetically linked to any known VDPVs. Another positive sample was collected from the same site on 2nd November with two different viruses - two with 36 nucleotide differences and one with 37 nucleotide differences. The initial characterization indicated a small level of diversity among the four viruses and as per the guidelines, the isolations were initially classified as an "Event". With subsequent isolations of VDPV2 from the 'Kwama' site, and later the Egyptian Hospital site, the "Event" was re-classified as a "cVDPV2 outbreak."

cVDPV3 Outbreak: VDPV type 3 was isolated from 4 ES samples collected from Kawma and 21October ES sites in Banadir region. Samples were collected 08, 15 and 22 April 2018. The 2 sites are 4KM far from each other with no link of catchment areas. According to the GPEI guideline the 4 VDPV3s are classified as cVDPV3.

Outbreak response:

Consistent with global guidance, the country is prioritized response to the cVDPV2 outbreak. The country has already rapidly engaged in a vaccination response consisting of two mOPV2 campaigns and one IPV campaign in the affected area of Banadir region. Post discovery of the most recent isolate from the Egyptian Hospital on Feb 22nd, the decision was made to add a third round of mOPV2 will be conducted from 5th-8th May 2018 in all affected regions. Till date, no positive AFP cases with cVDPV2 have been found.

There is presently an ongoing NID using bOPV (excluding Banadir, Middle and Lower Shabelle due to mOPV2 SIA), with plans for subsequent sNID to cover the central regions (July 2018), special sNID for accessibility challenged areas (Aug 2018), and second NID (Oct 2018).

Plan for strengthened surveillance developed that will encompass aspects such as refresher training and sensitization for focal points, review and update of reporting sites for AFP surveillance, and increased frequency and expansion of ES sampling. Special enhancements including contact and health child stool sampling are also included in certain high risk populations (e.g. 5 children per week from the Egyptian Hospital, a major tertiary referral centre and site of one cVDPV2 isolation through ES in February 22, 2018)

AFP surveillance: There are 933 active AFP reporting sites distributed across Somalia, 80% of them are health facilities where majority are operated by partners (NGOs and private institutions). The calculated national and zonal AFP surveillance indicators are above the recommended international standards. From January 1, 2018 to date 101 AFP cases were reported. The number of reported AFP cases at the same time in 2017 was 102. Of the 101 AFP cases, 87 are discarded and 14 are pending laboratory PCR result. Case detection rate within 7 days is 96%, AFP case investigation within 48 hours is 100%, stool adequacy is 98% and the annualized non-polio AFP rate is 5.7. The non-polio enterovirus and sabin like virus isolation are 5% and 9% which is lower than last year which was 12% and 11% respectively.

In 2018, 79/115 districts and all regions of Somalia have reported at least one AFP case. The surveillance system has been strengthened through innovative strategies including community surveillance, AFP case validation, zero dose investigation, contact and healthy children sampling, geocoding of AFP cases and surveillance training and surveillance review.

Immunization campaigns: Since the last TAG, the program has conducted 1 NID which is NID-3 of 2017 in December, 2 HtRs in July and August, 2 sNIDs using mOPV2 in December and January and the last one was sNID using IPV in April. In addition, Somalia is providing permanent transit points vaccination sites. There are 419 Transit point vaccination teams who are strategically placed to capture children on the move mainly from inaccessible areas to accessible areas as well as at ports of entry in Mogadishu, Berabera, Bosaso among others. Over 2 million under 10 years old children were given OPV at these transit points since the past 12 months. Of these over 26,000 (1.3%) had no history of previous vaccination (zero dose). There are 43 new transit point sites located inside the completely inaccessible areas, since the first week of 2017, a total of 131,116 <10 years children were reached through this newly established permanent vaccination sites in fully inaccessible area in South and Central zones. 43.0% of the children are vaccinated for the first time.

Monitoring the quality of SIAs:

Electronic data collection tool was developed using ODK and all SIA questioners including campaign preparation, DFA and Team level daily data compilation, intra-campaign

independent monitoring, post campaign independent monitoring and LQAS were converted to ODK and successfully used in the mOPV2 and IPV campaign. Following initial pilot in Banadir, the use of the tools has been expanded in Lower Shabelle and Middle Shabelle, with plans for further expansion in the upcoming NIDs and sNIDs including subsequent response campaigns.

Post campaign independent monitoring coverage data shows 97% and 93% coverage for round 1 and round 2 mOPV2 campaigns and 94% for the recent IPV campaign in Banadir, Lower Shabelle and Middle Shabelle. Post campaign Communication Assessment was conducted with the following key results. Awareness is 88% and main source of information was the community mobilizers (91%).

Routine immunization: Routine immunization coverage is low in Somalia. Efforts to strengthen routine EPI in all zones of the country were discussed and outlined in the 6-month and annual work plans. Measles immunization was conducted in some parts of Somalia to respond to ongoing a measles outbreak. The program is focusing on improving RI in this regard, to improve the population immunity. The country is receiving support from GAVI for 25 districts. There is funding gap for the remaining districts.

Communication for Development (C4D): The Somalia program is using a combination of C4D strategies including, high level advocacy with stakeholders, ministries, religious leaders, MoE, and community mobilization through radio/TV, megaphone announcements and house to house community mobilization in all the campaigns conducted. Continuous special emphasis is laid upon the sensitization of mobile nomadic populations and IDPs, concentrated in the largest communities. Polio IEC materials are widely disseminated, with a special focus on polio surveillance. Pre-tested FAQ leaflets and posters have been disseminated to all 3 zones.

Accessibility: Accessibility challenges continue particularly in the South and Central zones. As of April 2018, 17 districts were inaccessible and 23 partially accessible and there is no significant change in terms of accessibility of new areas in the past 12 months. As of January 2018, 459537 (15% of total under 5 children) remain inaccessible, of whom approximately 236,000 have never been accessed since 2013. In order to ensure that SIADs are being carried out without any delays, the program has developed preparedness micro-plan for all inaccessible districts.

Cold chain capacity and vaccine management: There are more than 500 ILRs and 250 Deep Freezers in good working condition in Somalia. The Country has migrated from the manual temperature control systems to the electronic versions (fridge tag 2 for all HFs and central temperature monitoring systems - CTM for cold rooms) to improve vaccine quality and safety. Vaccine data visibility and stock management has been improved through introduction of both manual and electronic stock management tools at all supply chain levels. Much focus

was on the procurement and management (trainings and management guidelines) of mOPV2 for campaigns in response to the cVDPV2 isolates in Banadir, Middle and Lower Shabelle regions. We successfully disposed off 75,631 empty vials of mOPV2 for round 1&2 in Mogadishu. Cold chain cascade training for frontline health workers has started (Puntland has completed while Somaliland and South Central regions will complete in May 2018). The next 4-year CCEOP application has been approved by GAVI and the deployment plans are finalized.

Preparedness for outbreak response: The outbreak preparedness plan was revised in April 2017 and shared with the zones. Each zone then developed their own tailored preparedness and response plans. These plans were fine-tuned with additional inputs from the polio outbreak simulation exercise (POSE) organized in October 2017 in Hargeisa and attended by all Somalia polio teams. The zonal plans have been very useful in the cVDPV2 outbreak response. FLW training on global toolkit outbreak module was conducted in response to cVDPV2 outbreak.

Transition Planning: Somalia has conducted transition planning workshop and the plan is in process. The priority at present of the program is to respond to the concurrent cVDPV2 and 3 outbreaks. There will be ongoing work to identify staff and resources that may be transitioned to other programs.

Remaining challenges: Large number of unreached children, inadequate supervision of active surveillance sites, low routine Immunization and risk importation of WPV from endemic country.

Way forward: Improve micro-planning for immunization activities by using the digital maps and electronic data collection tools for SIAs and Surveillance. Consider innovations to establish geographic coverage by vaccinators. Establish additional permanent immunization sites in the inaccessible districts. Utilize the developed electronic supervision checklist for active sites visits, and bolster quality of geo-coding for AFP cases. Strengthen and leverage partnerships to improve RI, reach all children for vaccination, and developed integrated Polio/EPI activities plan.

Country Summary: South Sudan

Background: In 2011 South Sudan gained independence, however, soon after, the country involved in a conflict, this has been going on since 2013.

The population estimated at 12.8 million (projection of 2008 census), and over 80% of the total population level in rural area. Administratively the country is divided into 10 states and 80 counties.

Ongoing conflict; ethnic violence and disrupted health service delivery system mainly in conflict affected states including some counties in stable states, and as of 31st August 2017; 6.5million affected with 3.9 million displaced of which 2million are in neighboring countries and multiple disease outbreaks occurring including Cholera, Measles.

AFP surveillance: Certification level surveillance has been maintained at national level for years, and in 2017 the NP-AFP rate was 4.71, and stool adequacy of 87%. As of week 15, 2018 the national NP-AFP rate and stool adequacy rate is at 4.3 and 89% respectively. All states have achieved a NP_AFP rate of above 2/100000 except Unity, while 7 states have achieved stool adequacy rate. In the conflict affected states only Unity state has not achieved the accepted detection rate, while stool adequacy was not met by only Jonglei state.

Activities done to improve surveillance include: Inclusion of surveillance benchmarks as part of Job performance evaluation for Field Supervisor/EPI staff. 71 Field Supervisors currently paid by WHO fill the human resource gap at the county level.

Contact sampling continued, and three contact samples have been collected from 83% of index cases as of week 15, 2018.

Immunization

Routine Immunization - National, sub national (Region and Districts), coverage status in the inaccessible areas and special population.

The national immunization coverage for OPV3 in 2017 is at 58%, while there is a disparity among states and it ranges from 13% in Jonglei to 124% in Lakes. In the three conflicts affected states, the administrative coverage for 2017 on average is 20%, while it ranges from 13% in Jonglei to 29% in Unity.

SIA: The country conducted 4 rounds of NIDs in 2017, and 2 rounds in 2018, in the conflict affected and security compromised states. The admin coverage in conflict affected state in 2017 ranges from 22% in upper Nile to 100% in Jonglei, while the average for four rounds in 2017 was 24.5% in Upper Nile, 89.5% in Unity and 98% in Jonglei. Due to security, currency inflation and geographical inaccessibility a total of 10 counties have not been reached for supplemental immunization activities. In all rounds, LQA and independent monitoring also

conducted in the conflict affected states. The result shows that among 32 counties LQA have been conducted in 2017 only 22(69%) counties passed at <90% coverage rejection point.

Communication for Development (C4D): Communication for Development (C4D) played a crucial role in 2017 in polio eradication marking the first year of its Integrated Community Mobilization Network catering routine and campaign based intervention to create demand for polio vaccine. Social mapping is being expanded to seven stable states, and the rest of states ongoing. Unity, Upper Nile, Jonglei and Lakes are currently following social map based micro planning for communication intervention.

Cold chain capacity and vaccine management: The cold chain at the National level remains adequate but at the state and health facilities remains a challenge with looting of cold chain equipment however the CCEOP is in place and hope to fill some of these gaps.

Preparedness for outbreak response:The country conducted simulation exercise in November 2017 and the national plan revised and shared. Quarterly risk assessment conducted and based on the gaps identified risk mitigation plans were developed and implemented

Transition Planning: The polio transition plan continued, simulation exercise conducted and business case plan have been developed awaiting endorsement by the ICC. Possible areas of integration BHI, IDSR, RI have been identified and discussion ongoing with MOH and partners to look ways and possibilities. A resource mobilization meeting is planned for June 2018 with donors

Challenges: High inflation rate of local currency and unavailability of banking/money transfer agent for operational fund transfer.

Difficult to access to most parts of the conflict affected states for surveillance, SIAs and immunization activities

Difficult shipping samples from remote areas due to security, road transport and limited humanitarian flight once in a week.

Denominator problem in most conflict affected states due to the crisis that most of the population moved to neighboring countries.

Technical support required.

Taking into consideration the low routine immunization in the country there is a need to increase the scope and number of SIAs for South Sudan.

Scale up the environmental surveillance sites in other conflict affected states.

Use of the PIRI and RRM (Rapid Response Mechanism), which is a temporary Humanitarian Emergency Collaborative platform, operated to deliver a basic lifesaving package.

Country Summary: Sudan

Epidemiology: The importations of WPV in 2008 and 2009 caused limited outbreaks in North Sudan, but a large epidemic in Southern Sudan. In 2008 North Sudan detected two polio cases due to P3 wild poliovirus imported from Chad while Southern Sudan was hit by P1 wild poliovirus related to Ethiopia old poliovirus. This virus caused 5 polio cases in Northern states. The last polio case in the Sudan was in March 2009. Since then, no polio case was reported in Sudan

Outbreak Response activities: Following the Polio outbreak in Nigeria and cVDPV in Syria and Environmental samples in the HOA, Sudan updated the national and state preparedness plans for poliovirus importation. Mapping of the high risk population (Southern Sudanese and people from African countries and Syria) living in all of the states of Sudan was done and an additional mop up immunizations for Special microplans were implemented. Sudan continues collaboration, coordination and information sharing with border countries.

Access and Security Related issues: However, some conflict affected areas in South Kordofan and Blue Nile states were not vaccinated since June 2011. The U5 children in these areas were estimated to be 183,000. A polio immunization plan was agreed upon to vaccinate these children. All preparations were done (supplies, logistics, funds, training) by Government of Sudan and UN. The program is using a modality to cover the conflict areas through NGOs and local agreements and trained community informants who collect regular stool specimens from healthy children in the inaccessible areas. This activity is supported by WHO.

SIA's conducted including quality indicators: Two SNIDs to vaccinate 8.4 million children in the age group <5 years in high risk areas, were implemented during 2017 with high quality. The reported coverage was above 95% and the independent monitors results was 97-98%. Another two and SNIDs are planned in 2018 during next May and November 2018 respectively.

Communication: Social mobilization continued during SIA's rounds to have the greatest effect. This was achieved by the activities that were done at locality level megaphones were continuously used by a member of the locality education and community, mosques and; publicity by sport and other community figures had a tremendous impact on the awareness of the people.

Important officials like Motamads/ the members of Legislative Council of localities were encouraged to make appearances at areas where the vaccination teams were working to attract attention and increase coverage.

EPI Units in the localities did much efforts to strengthen participation of people in local decision-making, improves OPV coverage in SNIDs. Social Mobilization Activities included;

meetings with Motamad and Executive Directors and Council members, Public Meetings, School meetings, Round Table Discussions and Personal communications

Steps taken to improve quality of SIAs:For good quality for implementation of the SIAs; there was an improvement of microplans at sector level for each locality (district) especially improvement in the quality of maps and microplans for the special population like nomads and camps. The supervision and monitoring of the implementation of the SNIDs was good through several types of personnel; locality supervisors, state supervisors, federal supervisors, WHO supervisors and independent monitors. More attention was paid for effective defaulter tracing in all administrative units of the localities.

Interventions in special population groups: In view of ongoing crisis and dynamic population movements, Sudan address 2.5 million refugees and IDPs and tracked them and focused for vaccination and surveillance activities with special micro plans, and documents all immunization and surveillance activities conducted among IDPs and vaccination points at cross border points.

Surveillance status: The AFP surveillance performance indicators remained above certification level for the last 5 years. The AFP rate remained above the target of 2 per 100,000 children under 15, the adequate specimens' collection rate was above than 90% and non-polio enterovirus isolation rate was higher than the target of 10%. In addition to NPEV, Sudan monitors and report Sabin virus isolation in stool.

To maintain the sensitivity of the AFP Surveillance, Sudan is supported with 17 WHO National Polio Eradication Officers in the Central Unit and 15 states in addition to 2 STOP Team.. The Central Surveillance Unit trained nomadic focal persons, create new reporting sites along the borders with Chad and Ethiopia and intensify supervision in the high risk districts identified in the Risk Analysis.

A risk assessment is done at state (sub-national) level on quarterly bases and the results are used to address surveillance and immunity gaps.

Routine Immunization: Sudan has maintained OPV3 coverage above 90 % for the last five years with 91% of districts attaining OPV3 coverage more than 80%. To improve the coverage further Sudan will focus on states of low coverage (Darfur states, Blue Nile, S. Kordofan and Red Sea). FMOH Sudan strengthened supportive supervision, cold chain and capacity building according to the recommendations of the EVM review which was conducted by WHO in December 2017

Challenges:The challenges facing Sudan includes; High influx of refugees from South Sudan, the armed conflict between Government and rebels in South Kordofan and Blue Nile states and tribal conflict in Darfur states. Change of the path of the nomads due to emerging

insecurity. Cold chain destruction and or looting in conflict areas and strengthening the infrastructures and coordination for immunization services in border areas are also challenges to the program.

Way forward including: Sudan plans to finalize the National Polio Transition Plan, implement 2 SNIDs (May and November) in 2018. to secure and sustain program funding (Government and donors) and to maintains Sudan polio free status and strengthen the links with community and to develop the communication and social mobilization plan based on new communication strategies to address detected gaps.

Country Summary: Tanzania

Background: Geography, demography, administrative, security and special population

The United Republic of Tanzania is the union of Tanganyika and Zanzibar located in East Africa. It occupies 945,087 square kilometres of land surface, of which 1,658 square kilometres is the Zanzibar Isles. The country is bordered by eight countries; Kenya and Uganda to the north, Rwanda, Burundi and the Democratic Republic of Congo to the west, and Zambia, Malawi and Mozambique to the south. The country's eastern border is the Indian Ocean. The country is divided into 31 regions, 194 district councils and over 15,000 villages. The country is estimated to have a population of 54,199,163 (NBS 2018 Projections) inhabitants of which under-fifteen and under-one year contribute to 43.8% and 3.8% of the total population respectively. Thirty percent (30%) of the total population live in urban areas and 70% in rural areas. The majority of inhabitants are farmers, fishermen and pastoralists. Nomadic populations are found in the northern, western and Lake Zones. These populations are difficult to reach in certain seasons of the year for routine immunization services because of constant movement. Tanzania is generally a peaceful country, although isolated incidences of crimes do happen.

AFP surveillance: National, sub national (Region and Districts), Surveillance Status (performance indicators) in the inaccessible areas and special population (IDP, Refugees and Nomads), and population immunity of AFP cases (6m-59m).

Last Wild Poliovirus case in Tanzania was detected in July 1996. AFP Surveillance performance has been maintained above the certification indicators for 2013 to 2017 as per **Table 1**. Annualized Non Polio AFP rate up for 2017 was 4.2 per 100,000 population aged less than 15 years and the stool adequacy is 98%. AFP Surveillance system is well established at all levels and is effective and sensitive to be able to pick polio case in case of importation.

The country has maintained good AFP surveillance performance in the country and sub-national level. Surveillance is strengthened especially in areas bordering DRC and in refugee camps, which harbor refugees and asylum seekers from Burundi, Rwanda and DRC.

Year	AFP cases Reported	Confirmed Polio cases	Non-Polio AFP cases Reported	Non-Polio AFP Rate	AFP cases with adequate Stool	
					No	%
2017	956	0	954	4.2	939	98
2016	984	0	974	4.3	943	96
2015	799	0	795	3.6	767	96
2014	795	0	786	3.5	742	95
2013	702	0	697	3.2	661	94

88% of AFP cases aged less than 5 years reported in 2017 had received 3rd dose of OPV3.

Immunization:

- a. Routine Immunization - National, sub national (Region and Districts), coverage status in the inaccessible areas and special population.
- b. SIAs - National, sub national (Region and Districts), coverage status in the inaccessible areas, special population. Monitoring the quality of SIAs (LQAS and IM).

The country had maintained the population immunity, by having a third dose of OPV3 coverage of 90% (national average) and more than 85% of the regions having coverage of OPV3 of more than 80% since 2013.

Table 1: Summary of Administrative OPV3 Coverage; 2013 - 2017

Year	Target	Vaccinated	OPV3 Coverage
2017	1,929,749	1,838,484	95%
2016	1,922,794	1,745,979	91%
2015	1,810,396	1,729,914	96%
2014	1,733,967	1,677,596	97%
2013	1,767,358	1,614,912	91%

Source: MOH, WHO, UNICEF JRFs, 2013-2017

Tanzania has not conducted SIA since 2012. IPV has been introduced in April 2018.

Cold chain capacity and vaccine management: Tanzania has adequate cold chain capacity at National, regional, district and health facility levels.

Preparedness for outbreak response: The country has been updating its outbreak response preparedness plan in line with changing SOPs. The polio outbreak simulation exercise was conducted in 2016. The identified gaps were addressed in the reviewed preparedness plan

Transition Planning: Through ICC, WHO communicated to the government about GPEI budget ramp and the need for transition planning. The MOHCDGEC conducted workshop on streamlining disease surveillance in Tanzania during which they proposed options for transition.

Challenges

- High turn over of surveillance staff
- Competing priorities at lower level
- Low frequency of active search.

Technical support required

- In establishing environmental surveillance in the country
- Conducting repeat Polio outbreak response simulation exercise

Country Summary: Uganda

Background: In 2018, Uganda has an estimated total population of 38.8 million (52% under 15 years, and a population growth of 3.03%. Administratively, there are 122 districts, 1370 subcounties and 56,749 villages. Uganda has achieved and sustained a polio status despite the threats of importation from neighboring countries. The last laboratory confirmed indigenous WPV1 was reported in October 1996 from Mukono district, central region. However, in 2009 and 2010 Uganda succumbed to an importation of WPV1 outbreaks that were contained with multiple SIAs. In 2016, IPV introduction and tOPV to bOPV switch was successfully conducted in all districts. Sabin 2 has not been isolated from any stool sample.

AFP surveillance: Uganda has attained and sustained recommended performance levels for the two core indicators of AFP surveillance - non-polio AFP rate and stool adequacy rate at the national level 2013 – 2017. The annualized non-polio AFP rate per 100,000 children below 15 years of age in 2018 is 3.93 compared to 3.09 in 2017 and the stool adequacy rate in 2018 is 93% compared to 88% in 2017. In 2018, 30 out of 122 districts have attained actual non-polio AFP rate of $\geq 2/100,000$. 29 districts are still silent.

Immunization campaigns /monitoring the quality of SIAs: In September 2017, a preventive house to house polio SIA using bOPV was conducted in 73 high risk districts to increase population immunity. 6,441,282 children below five years were vaccinated. Coverage at household level by finger marking was 90% and 94% by history per independent monitoring results. Forty-one percent (37 districts) had a coverage of 95% or above by finger marking at household level. From the LQAS in selected high risk districts, of the 38 lots that were evaluated, only 9 (23.7%) had 90% coverage, 10(26.3%) had coverage of 80 - 89.9%; 9 (23.7%) with coverage of 60 -79.9%; and 10 (26.3%) with < 60%.

Routine immunization: In 2017, national OPV3 coverage was 90%. 97 districts attained a coverage of 80% and above. No district was below 50%. National IPV coverage was 67%. Technical and financial support were provided to the identified districts with large numbers of unimmunized children, inequities and low performance to develop and implement RED/REC immunization micro plans.

Communication for Development (C4D): Community mobilization and enhanced polio risk communications was emphasized during the during SIAs. Following the 2016 equity assessment the identified unreached communities were targeted especially the identified high risk populations including urban poor settlements, migrants, ethnic minorities, some religious sects (especially Muslims, Bisaka sect and Triple 6, upcoming town settlements, fishing communities, refugee communities, remote rural, island and mountainous communities. The communication packages were developed for stakeholders and health workers to enable them to effectively communicate and mobilize communities for

immunization services. Meetings were held in Busoga region targeting both community and religious leaders to address the identified hindrances to immunizations.

Accessibility: The country has a total 49 villages which are geographically hard to access. These are in form of islands and escapements.

Cold chain capacity and vaccine management: The last SIAs were conducted in September 2017 and an update on vaccine management was reported on during the last TAG.

Preparedness for outbreak response: Uganda has a National polio preparedness and response plan developed in line with the May, 2017 SOPs and was simulated in November 2017. Performance was 87% (compared to 75% in 2015) and technical capability to respond to an outbreak of polio was available however, the coordination in general showed some gaps which resulted in some negative effects in timeliness and completeness of the activities that have been discussed thoroughly during and after conducting the exercise.

Transition Planning: Uganda is developing a polio transition plan that will be finalized by 2018. Mapping of all polio assets has been completed.

Remaining challenges: Competing public health priority activities at all levels.

- District Surveillance Focal Persons have other assignments.
- Limited AFP surveillance funds
- Increasing informal settlements
- Continued influx of refugees

Way forward: Continue deploying national IVD/EPI staff (MOH and partners), STOP and NSTOP to conduct active surveillance activities in the districts within IDSR framework but with special focus on Acute Flaccid Paralysis (AFP) surveillance.

EPI/IDSR regional officers will be members of regional cold chain teams.

Annex C: List of participants

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