TECHNICAL ADVISORY GROUP ON POLIO ERADICATION IN THE HORN OF AFRICA

6th Meeting Report

NAIROBI, KENYA, 4-5 MAY 2011

Executive Summary

The 6th meeting of the Technical Advisory Group on Polio Eradication for the Horn of Africa (HoA TAG) was held from 4–5 May 2011 in Nairobi, Kenya. The objectives of the meeting were to review the situation and progress of polio eradication in countries of the Horn of Africa, identify any areas or situations of concern which may need to be addressed and make technical recommendations on appropriate strategies to ensure the interruption of wild poliovirus transmission.

The TAG recognized the progress and achievements by the countries in 2010. Several countries, most notably South Sudan, made significant improvement in routine coverage and AFP surveillance during 2010. However it was alarmed because wild polio viruses detected in Uganda and in the sewage in Aswan Egypt in late 2010 were most closely linked to the 2008-2009 Sudan/Kenya outbreak. These findings confirm that there is continued low-level circulation of WPV in the region. Furthermore, in all countries, there are mobile, migrant, and underserved subpopulations that form increasingly important pools of unvaccinated or under-vaccinated children where circulation of WPV is likely to remain undetected. The detection of cases of polio caused by vaccine derived viruses in Ethiopia and Somalia in 2010 further emphasizes the need to maintain population immunity through routine immunization. Although the majority of SIAs were implemented as recommended by the TAG in 2010, the quality of the activities was variable as shown by independent monitoring evaluations. In addition, even though social mobilization and communication indicators were collected there was no evidence that they were used to improve SIAs or routine immunization strategies or plans. Most countries conducted risk analysis which were used to guide and prioritize activities for polio eradication. Activities in cross border areas took place but were not supported by coordination or meetings. The TAG recommended that an integrated risk analysis for the Horn of Africa be completed by the end of June, with 6th monthly updates. This analysis should be used for prioritization of SIAs, planning and implementation of surveillance and social mobilization/communication activities. Priority should be given to address surveillance gaps, implement high-quality SIAs during the period 2011-2012, use of social mobilization and communication information to improve immunization activities, continue to provide OPV to children during activities such as Child Health Days and measles campaigns and support cross-border coordination, planning and implementation to address mobile and migrant subpopulations at high risk for undetected WPV circulation. Countries should share best practices and strategies for identifying, mapping and reaching these subpopulations. Finally, the TAG urges Governments, partners, and donors ensure that polio eradication and immunization are given high priority and provide funding and other resources for the full implementation of necessary activities to achieve polio eradication

1. PREAMBLE

The 6th meeting of the Technical Advisory Group on Polio Eradication for the Horn of Africa (HoA TAG) was held from 4–5 May 2011 in Nairobi, Kenya, under the chairmanship of Dr. Jean-Marc Olivé.

Since the last meeting of the TAG in March 2010, an outbreak of wild polio virus type 1 with four cases has occurred in southeastern Uganda between September and November 2010. Genetic sequencing of the wild polio virus isolates showed that the virus was most closely related to early isolates from the 2009 Kenya outbreak. Furthermore, a wild poliovirus was isolated from an environmental sewage sample from December 2010 in Aswan, Egypt, which is genetically linked most closely to virus from the last 2008-2009 outbreak in the Horn of Africa. **This isolation indicates that there is still on-going transmission in the Horn of Africa countries despite certification-level national AFP surveillance indicators, and calls into question whether Sudan met the second GPEI Milestone (cessation of poliovirus transmission in "re-established" countries by end-2010).** The TAG also noted with concern the increased detection of circulating vaccine-derived polioviruses in Ethiopia and Somalia in 2010.

The TAG observed that except for Eritrea and Djibouti, all countries have conducted risk assessments and bordering countries implemented appropriate responses to the detection of wild poliovirus in Uganda. In addition, both desk and field surveillance reviews were conducted to further assess the risks of undetected circulation and identify sub-national surveillance and immunization gaps. The persistent circulation of wild poliovirus in Chad (types 1 and 3) and Democratic Republic of the Congo (type 1) still poses a major risk to Horn of Africa countries.

The clear evidence of undetected transmission of wild polio virus in the region, with a large pool of susceptible children due to sub-optimal routine immunization coverage and the existence of inaccessible areas due to security issues preventing access for surveillance and immunization activities make this region at very high risk for the program. For this reason the TAG urges continued high- level advocacy for polio eradication in all the countries of the Horn of Africa and requests action by all countries, WHO, UNICEF and other partners to assure the full implementation of its recommendations.

2. CURRENT SITUATION

A. AFRO Region (Uganda, Kenya, Ethiopia, Eritrea and Chad)

1. Uganda

Uganda began a national effort to eradicate polio through immunization strategies and establishment of active AFP surveillance to detect wild polio virus circulation in the country in 1996. The country had been polio-free for 13 years until February 2009 when an importation of wild poliovirus 1 occurred in Amuru district in north Uganda. The outbreak in 2009 provided an opportunity to sensitize the political authorities to strengthen the national programme. A total of 8 cases were identified. The virus was genetically linked to cases in Southern Sudan. In September 2010, a type 1 wild polio virus that was genetically linked to an index case in the Turkana Kenya outbreak in 2009 was isolated from an AFP case in south Eastern Uganda. An additional 3 cases were confirmed with the last case in November 2010. **The 2010 outbreak confirmed that there was undetected transmission in the Horn of Africa countries.**

Following detection of the outbreak, a rapid risk analysis identified 48 districts in the east, north and northeast which were targeted for outbreak response. House-to-house SIAs with MOPV1 were conducted in November, December 2010 and January 2011, and a fourth round is planned for May 2011. Independent monitoring using finger marking showed coverage of 85%, 93% and 95% respectively. The proportion of districts achieving coverage of over 95% improved across the rounds (47%, 71% and 75%) respectively.

Routine immunization coverage with 3 doses of OPV increased from 62% in 1999 to 86% in 2004. However, there was a decline from 85% in 2005 to 79% in 2010. Secondly the proportion of non polio AFP cases aged 6 to 59 months that are zero doses has been increasing from 1% in 2004 to 8% in 2010, a clear indication of declining routine immunization. The major contributing factors to this decline include insufficient funding, decline in outreach activities, inadequate logistics at district vaccine stores and poor advocacy and social mobilization.

Surveillance performance is adequate at the national level. The non-polio AFP rate was 3.43 in 2009 and 2.49 in 2010, while stool adequacy rates remained above 80% for both years. However, gaps exist at the sub-national level, especially among districts bordering Kenya and the western part of the country bordering DR Congo. Overall, only 61% of the districts attained a non polio AFP rate of >2/100,000 in 2009 and in 2010. Due to the unavailability of funds, active surveillance was only instituted in the third quarter. To bridge the gap in sub optimal active surveillance activities, national and international STOP teams and polio consultants were deployed to high risk districts to conduct retrospective searches for AFP. This contributed to an increase in the case detection rate during the last half of the year. A desk review was conducted in March 2011 to assess the status of AFP surveillance and develop plans for 2011. The review identified areas of focus at the central, regional and district level.

The priorities for 2011 are:

a) re-establish outreach in all districts and logistics support with GAVI ISS funds and CIDA funds to support RED strategy in 26 low performance districts

b) enhance regional supervision strategy in 8 regions including the establishment of an additional regional Integrated Disease Surveillance and Response (IDSR) supervisory area in Jinja, the epicenter of the 2010 outbreak

c) facilitate active surveillance work in high priority hospitals and through deployment of international STOP teams, regular monthly supervision of District Surveillance Focal Persons and provide motorcycles for transportation.

d) Sensitize Village Health Teams to AFP surveillance especially in Karamoja region and involve school going children as a way to strengthen community based system.

e) Conduct quarterly risk analysis to guide the implementation of activities.

2. Kenya

The last indigenous case of polio was reported in 1984. The country conducted polio NID campaigns for 5 years (1996–2000). Preventive polio campaigns in selected high risk districts were conducted in 2001, 2002 and 2005. Kenya suffered two outbreaks of WPV as a result of importations from Somalia (2006) with 2 cases and from South Sudan (2009) with 19 cases. The last case from the 2009 outbreak had onset in July 2009. However, the detection in September 2010 of a wild poliovirus type 1 in Bugiri District of Eastern Uganda which borders Kenya, which was genetically linked to the index case of the outbreak in Turkana in February 2009, confirmed that there was undetected transmission for about 18 months. A risk analysis in October 2010 showed that 22 districts around the eastern part of Uganda bordering the western part of Kenya were at risk due to socio-cultural and economic ties of the people living there. The 22 districts were targeted and 3 rounds of SNIDs synchronized with Uganda were implemented in November, December and January 2011. A 4th round of will be conducted in May 2011. Coverage by finger marking was 79%, 88% and 90% respectively. A further risk analysis conducted in February 2011 indicated that an additional 45 districts were also at risk.

In 2010, reported OPV 3 coverage was of 83% at national level with six of the eight provinces (Central, Coast, Eastern, Nairobi, Nyanza, and Western) reporting coverage $\geq$80%. These Provinces constitute the bulk of the population nationwide. At sub national level, nearly 30% of districts have OPV3 coverage below 80% **with Turkana, Tana River and Ijara districts having less than 50%.** The OPV3 coverage improved in most provinces in 2010 as compared to previous years. However, North Eastern province registered a decline. Aggregate national data shows just over 70% of the NP-AFP cases 6-59mo have 3 or more doses of OPV. Significantly, Nairobi dropped from 70% to 60% with zero dose AFP cases increasing to 10% between 2009 and 2010. The populous Western Province had a slight increase from 65% AFP cases with 3/+ OPV doses to 70%, between 2009 and 2010 with no zero dose in 2010. Major variations in coverage also occur within Provinces. An unacceptably high number of AFP cases (average 10%) have unknown immunization status in Nairobi, Nyanza, Rift Valley, Eastern, North Eastern

Kenya has achieved certification standard surveillance at national level for the last 6 years although in 2008 there was a sharp drop in AFP detection due to the post election disturbances. In 2010, the distribution of AFP cases was in conformity with population density. However, the detection was significantly lower (395 versus 439 AFP cases in 2009); the provinces detecting less cases were Rift Valley, Nyanza and Eastern. These are also provinces at risk of undetected transmission as they were affected by previous outbreaks or border high risk areas and had some districts with sub optimal AFP

performance. In 2009, 4 districts with 50,000 or more population <15yrs were silent, while in 2010 the number of such districts was 9.

The priorities for 2011 are:

a) Address population immunity gaps in the identified 45 high-risk districts through strengthening routine immunization, accelerated routine activities, child health days, and SIAs

b) Build capacity for AFP surveillance in the newly created districts and high risk districts

c) Strengthen the provinces with logistics to ensure regular supportive supervision of the districts.,

d) Conduct quarterly risk analysis and deploy STOP, external consultants, WHO surveillance officers and STOP alumni to poor performing districts identified; advocate for funding from government and partners.

3. Ethiopia

Three years after interrupting indigenous WPV transmission in 2001, the country experienced its first importation in December 2004, when a wild poliovirus outbreak was confirmed in Tigray Region - bordering Sudan. Since then, there have been 4 additional outbreaks in different parts of the country - the latest being the one in Gambella Region in April 2008. Between October 2008 and February 2009, an outbreak of 4 cases of circulating vaccine derived polio virus type 2 was detected in Oromia region of Ethiopia. A series of SIAs were conducted in response to the cVDPV2 outbreak. In 2010, three genetically distinct outbreaks of cVDPV type 3 were identified; 1 case in Somali Region, 4 cases in Oromia (Bale Zone), and one case in Southern Nations (Bench Maji Zone) region with onset in November 2010. Investigations showed that in all cases there was low routine EPI coverage. To respond to these cVDPV outbreaks and increase population immunity, 3 rounds of SIAs (one with MOPV3 and two with TOPV) were conducted in these regions. Independent monitoring of the SIAs revealed that the SIAs were of good quality despite the collected data being compromised by poor quality of finger-markers. In Southern Nations Region, accelerated activities for surveillance and enhanced routine immunization activities were conducted.

At the end of 2010, Ethiopia reported a national Penta-3 (DPT-HepB-Hib) coverage of 89% with 60% of the zones in the country having coverage of at least 80%. However, 13 zones mostly in Oromia and Amhara regions had relatively large numbers of unimmunized children and zones in the pastoralist regions of Somali, Afar, Benshangul Gumuz and Gambella had lower coverage.

Ethiopia has maintained certification level AFP surveillance for more than 6 years. In 2010, the non-polio AFP rate was 2.8 with stool adequacy of 85%. However sub national gaps exist in surveillance performance among regions and zones in border areas due to insecurity, difficult terrain and weak infrastructure, high attrition of staff and population movements along the Ethiopia-Sudan, Ethiopia-Kenya and Ethiopia - Somali borders. These areas constitute remaining risks of transmission.

The priorities for 2011 are:

a) Increase population immunity through implementing RED and Enhanced Routine Immunization Activities in zones with relatively large numbers of unimmunized children and those with low coverage.

b) Conduct synchronized SIAs in regions / zones bordering Sudan, Kenya and Somalia and strengthen the exchange of surveillance information through cross-border meetings

c) Strengthen active surveillance through woreda focal points activities, continue mapping migration movements of populations, and locally recruit zonal surveillance focal points in the insecure areas.

d) Strengthen community based surveillance using the network of 34,000 Health Extension Workers deployed at the community level.

4. Eritrea

Eritrea has been polio-free since April 2005 when the last poliovirus imported from north Sudan was detected in Gash Barka region. At that time, two rounds of SIAs were conducted as part of the response to the importation. Additionally activities to further strengthen surveillance particularly along the Sudan borders and among the migrant populations were instituted. Risk analysis conducted in 2010 confirmed that the highest risk of importation is still along the Sudan border. As part of continued efforts to boost immunity in these border areas, two rounds of SNIDs were conducted in the districts bordering Sudan in 2010.

Since 2005, routine immunization coverage has been between 58 and 70%. A coverage survey conducted in 2009 confirmed a much higher coverage of over 80% at national level with five of the seven districts recording over 80% OPV3 coverage. To boost population immunity, regular outreach activities are conducted in hard to reach areas to address the routine immunization gaps.

AFP surveillance indicators at the national level have remained above certification level. The rates were 6.2 and 6.4 in 2009 and 2010, respectively and stool adequacy rates were 93% and 98% . However, there is variation at the sub-national level, particularly in hard-to-reach areas. The major constraint to AFP surveillance is the difficulty of transporting stool specimens from AFP cases to the laboratory in Kenya. **The country often faces delays of up to six months from stool collection to the time the specimens are received at the laboratory in Kenya.**

The priorities for the programme in 2011 are:

a) Continue periodic deployment of teams to conduct active and retrospective case searches in hard to reach areas of the country.

b) Conduct planned preventive SIAs along the Sudan borders.

c) Continue to look for an appropriate alternative to transportation of stool specimens to the Kenya laboratory, in view of continuous difficulties imposed by the Government authorities in transportation using available airlines.

5. Chad (Presented for information of the TAG only)

Since the first case imported from Nigeria in 2003, Chad has failed to interrupt circulation of wild poliovirus across the country. From 2003 to 4 May 2011, there are a total of 236 WPV cases notified (25 reported in 2003, 24 in 2004, 02 in 2005, 01 in 2006, 21 in 2007, 37 in 2008, 64 in 2009 and 26 in 2010). Chad is currently facing a major outbreak, with 36 WPV cases in 2011 (33 type 1 and 3 type 3) affecting 11 districts. The most recent case had onset on 2 April 2011 in Yao district, Bata Province. In addition, 1 case of cVDPV type 2 was notified in a nomadic population in November 2010 in Moussoro district (Barh El Gazal Province). A risk analysis conducted in March 2011 identified 23 of 61 districts as high risk. Many of these are located at the border with Sudan.

Performance of the AFP surveillance system at the national level in the past 12 months is good. The non polio AFP rate in 2010 was 4.5 per 100,000 with 88% stool adequacy. There is, however, poor performance at the sub national level with often late detection of wild poliovirus. The programme faces an average delay of 18 days to get stool samples to the laboratory in Yaounde

The polio immunity of children remains low, due to poor performance of routine EPI and poor quality of SIAs conducted in 2010 and early 2011. Overall in 2010, 15% of AFP cases aged 6 – 59 months were unvaccinated. The proportion of missed children is still very high after each campaign and corrective actions are not always systematically taken to improve the situation. Primary reasons for poor campaign coverage are absent children, houses not visited by vaccinators, and a large percentage of parents unaware of the campaign (20% during Chad campaigns conducted in 2010-2011).

B. EMRO Region (Somalia, North Sudan, South Sudan, Yemen and Djibouti)

1. Somalia

Somalia has been polio-free for almost 4 years since the last WPV outbreak in Somalia from 2005 to 2007. This success has been attributable to several factors including high levels of community acceptance for polio vaccination, the support of religious leaders and clan elders, the dedication of local staff and volunteers and the provision of adequate and timely financial support. In 2010, the volatile security situation and the loss of local authorities' permission for access have limited the implementation of scheduled immunization activities, both NIDs and Child Health Days, in most parts of the South and Central zones of Somalia. **Somalia is at high-risk of rapid deterioration of the population immunity profile.**

In 2010, Somalia maintained a sensitive AFP surveillance system with key indicators above certification standards at national and sub-national levels; only two districts did not achieve a non-polio AFP rate >2 cases per 100,000 children under age 15 years. In total in 2010, 164 AFP cases were reported: 160 cases

were discarded and 4 were identified as circulating vaccine-derived poliovirus (cVDPV). From January to March 2011, an additional two cVDPVs were reported. The repeated cVDPV occurrence since 2008 suggests that permissive conditions for WPV circulation exist in Somalia and highlight the needs to quickly strengthen the population immunity profile through high-quality SIAs and to maintain a highly sensitive AFP surveillance system.

Routine OPV3 coverage was estimated at 51% in 2009. However, SIAs remain the major source of OPV for children aged less than 5 years. The two rounds of NIDs planned for 2010 as recommended by the 2010 HoA TAG were implemented in the relatively stable North-East and North-West zones and both achieved at least 96% administrative coverage. In addition, two rounds of CHDs provided additional opportunities to give OPV. However, due to local authorities' refusal for access, NID implementation in the South and Central zones was severely limited and an estimated 800,000 children were not reached. In 2011, the first of the two planned NIDs was implemented in accessible districts of North-East and North-West zones only. Independent monitoring for NIDs and CHDs has not been implemented in Somalia due to the operational constraints.

The priorities for Somalia in 2011 include the following:

a) Utilize every opportunity to improve the routine EPI coverage in all districts and continue to use CHDs to deliver OPV

b) Seek strategic solutions to address the current local authorities' refusal for access for vaccinators in South and Central zones

c) Conduct at least two rounds of NIDs in 2011

d) Map chronic conflict-affected areas and estimate populations in those areas; map routes for population movements for when violence escalates and develop micro-plans for using population movements as opportunities for vaccination

e) Increase cross-border coordination and collaboration including developing joint plans with neighboring countries for AFP surveillance and SIAs

f) Increase collaboration between all PEI partners and regularly update donors on program's progress and achievements

2. North Sudan

Since the last HoA TAG meeting in March 2010, North Sudan has implemented all recommendations. Routine OPV3 coverage has been maintained above 90% since 2008, and the Darfur states have achieved >80% coverage rate as a result of several accelerated routine immunization rounds in 2010. Of 157 districts, 88% achieved ≥80% coverage of OPV3 and only 2% of districts did not achieve 50% coverage rate.

In 2010, the AFP surveillance performance indicators have been maintained at the certification-standard level at national and first sub-national levels. The rates of non-polio AFP detection and adequate specimen collection were above 2 cases per 100,000 children under age 15 and 97%, respectively. All states reported ≥2 non-polio AFP cases per 100,000 children below 15 years of age. Following the 2010

recommendations of the HoA TAG, North Sudan conducted a risk analysis at the district level. The analysis focused on surveillance and immunity risks. The analysis showed some gaps at the sub-national level. Each state took actions to address the identified gaps.

Since mid-March 2009, North Sudan has reported no polio cases. However, in April 2011, a wild poliovirus, type 1 was isolated from a December 2010 environmental sewage sample in Aswan, Egypt. Genetically, the WPV1 isolated is most closely linked to the 2008–2009 Sudan polio outbreak. The following actions were undertaken in response to the Aswan WPV1 environmental isolate: (a) A rapid AFP surveillance review was conducted in four high-risk, border states by an international team from HQ and EMRO; the AFP surveillance system was determined to be sensitive enough to detected AFP cases (b) A retrospective search for missed AFP cases was conducted and revealed no missing AFP cases during 2011 and 2010 (c) Sensitization sessions were conducted to increase health staff awareness about AFP signs and symptoms, (d) An in-depth investigation of AFP cases having low OPV doses was undertaken and (e) Three NIDs rounds were conducted between December 2010 and April 2011.

In 2010, two NIDs and two sub-NIDs were conducted, and in 2011, two NIDs have been conducted. The coverage by post-campaign finger-marking via independent monitoring ranged between 95% and 98%. As a result of routine immunization activities and SIAs, the immunity profile has been maintained at a high-level; the proportion of children <60 months who received 7+ OPV doses was 81% in 2010.

The 2011 priorities for North Sudan include the following:

a) Close surveillance gaps (e.g., defaulter tracing, micro-mapping of migrant and mobile populations and insecure and border areas).
b) Implement two NIDs rounds in the 4th quarter 2011 AND add OPV to the measles vaccination campaign in mid-May 2011.
c) Increase supportive supervision at all levels.
d) Utilize social mobilization and communication indicator data from early 2011 NID rounds to identify communication gaps and develop plans to address these gaps for late 2011 rounds.
e) Address states' financial contribution issues and local resource mobilization for SIAs.

3. South Sudan

The HoA TAG held in March 2010 expressed grave concern regarding the possibility of low-level WPV circulation due to weak AFP surveillance and low routine vaccination performance. Accordingly, nine recommendations were made to improve the performance of the program, including collecting stool specimens from community children in chronically "silent" counties and from three contacts for every AFP case to increase surveillance sensitivity. All of the 2010 HoA TAG's recommendations were implemented by 2011.

Routine vaccination coverage showed marked improvement in 2010. Administrative coverage increased from 22% OPV3 coverage in 2008 to 71% in 2010 due primarily to "acceleration" activities. However, problems regarding the denominator have been noted, and the country team has plans to conduct a

coverage survey to evaluate the situation further in 2011. Trainings and micro-planning to implement all activities of the RED approach are ongoing in South Sudan.

The sensitivity of the AFP surveillance system has improved dramatically in South Sudan since the last HoA TAG meeting. The reported number of AFP cases increased by 50% in 2010. In 2010, the NPAFP rate increased to >4 cases per 100,000 children under age 15 years, the stool adequacy rate was >90% and the non-polio enterovirus rate was above 10%. In addition, sub-national gaps in AFP surveillance indicators were eliminated in 2010. The quality of data and documentation was significantly improved as well; by the end of 2010, 95% of all AFP cases had a final diagnosis compared to 20% in mid-2010.

South Sudan conducted four NIDs in 2010 and in December 2010 finally achieved the 2010–2012 GPEI Major Process Indicator of all states achieving <10% missed children in each round. Despite the significant improvements in both routine immunization and SIAs, the immunity profile of NPAFP cases still shows approximately 25% have not received an adequate number of doses. On a positive note, the proportion of zero-dose NPAFP cases decreased to <3% in 2010.

Since 2009, a huge number of activities in communication, coordination and social mobilization have been implemented including four meetings of the ICC, 16 coordination meetings, and six meetings with partners. In addition, social mobilization activities have become routine using various types of media and tools by a large team of more than 50 personnel from WHO and UNICEF on both national and state levels.

The priorities for South Sudan in 2011 include:

a) Address the AFP surveillance gaps identified and implement recommendations from the international surveillance review in April 2011.

b) Implement two more rounds of NIDs and four “acceleration” sub-national campaigns in 2011.

c) Continue e-STOP technical support through the end of 2012 at current staffing levels.

4. Yemen

Yemen has been polio-free since the large WPV1 outbreak of 2005, which resulted in 480 cases. Yemen did not implement the two 2010 HoA TAG country-specific recommendations. The first HoA TAG recommendation was to conduct two NIDs using tOPV or bOPV in 2010; no NIDs were conducted in 2010, in part due to lack of external funds. The second recommendation was to sustain high-quality AFP surveillance in border and hard-to-reach areas; although an international AFP surveillance review was planned in 2010, it was not conducted due to insecurity and movement restrictions for international staff in the high-risk governorates.

The AFP surveillance performance indicators for 2010 and 2011 remain well above certification standards at both the national and sub-national levels. The 2011 annualized AFP rate is 3.4 cases per 100,000 children under 15 years of age, compared to 3.9 and 3.3 in 2010 and 2009, respectively. In 2010, the AFP case rate was >2 per 100,000 in all 22 governorates. The annualized stool sample adequacy rate is 95% in 2011 and was 97% and 93% in 2010 and 2009, respectively.

Routine immunization coverage for OPV3 was 84% in 2010. Yemen has sub-national immunity gaps; 5 (23%) of 22 governorates reported <80% OPV3 coverage in 2010. No NIDs were conducted in 2010 due, in part, to funding constraints. Yemen conducted two rounds of NIDs in 2009 and one round in November 2008, with all campaigns reporting over 90% administrative coverage. **The increasing trend in percentage of zero-dose AFP cases is alarming and demonstrates an increasing pool of susceptible children. (Percentage of zero-dose AFP cases: 7% in 2008, 11% in 2009 and 14% in 2010.)**

Yemen remains at high risk for importation and sustained transmission due of the following factors:

a) Current civil unrest and large areas of insecurity due to chronic conflict

b) Large population movements into and through Yemen from across West Africa and Horn of Africa and particularly from Somalia

c) Low routine immunization coverage and a growing population immunity gap

5. Djibouti

Djibouti has been polio-free since the last clinical polio case in 1999. Djibouti failed to implemented the two 2010 HoA TAG country-specific recommendations. The first HoA TAG recommendation was to conduct two annual NIDs using tOPV or bOPV; one NID was implemented in December 2010 using tOPV. The second recommendation was to sustain high-quality AFP surveillance in border and hard-to-reach areas; an international AFP surveillance review was conducted in March 2010 and a number of recommendations were made to strengthen the AFP surveillance system. An action plan to track implementation of the AFP surveillance review recommendations has been developed and will be monitored by EMRO/Somalia office technical staff in 2011.

The AFP surveillance performance indicators for 2010 demonstrate clear weaknesses in the system. Djibouti detected just 3 AFP cases in 2010 for a rate of 1.2 cases per 100,000 children under 15 years of age, compared to 2.5 per 100,000 in 2009. In the first quarter of 2011, two AFP cases have been detected. The stool sample adequacy rate was just 33% in 2010, compared to 66.7% in 2009. In 2011, the stool adequacy rate is 100%. Two of the three cases from 2010 are still pending classification. A National Expert Committee meeting to classify the 2010 cases is scheduled for May 2011.

The reported administrative coverage for OPV3 was 89% in 2009. Sub-national gaps in routine immunization exist; only 4 (67%) of 6 provinces reached coverage rates greater than 80%. There have been no SIAs in 2011. Although two rounds of NIDs were scheduled in 2010, only one was conducted with a reported administrative coverage of 100%. In 2009, two NIDs were implemented with national reported administrative coverage of 108% and 105%, respectively. In addition, one round of CHDs, which included tOPV, was conducted nationwide in 2009.

From 2009 to 2011, all AFP cases detected (11 total) had received a minimum of 3 OPV doses. Djibouti has not implemented independent monitoring or measurement of communications outcomes during SIAs. Partner funding was available in 2010 and remains available in 2011 for SIAs.

Djibouti remains among countries that are at risk for importation due of the following factors: (a) Lack of priority for the polio eradication program, (b) High cross-border movement with Eritrea, Ethiopia, Somalia and Yemen (by sea), (c) Difficult-to-track mobile populations, (d) Weak AFP surveillance system and low routine immunization coverage in high-risk areas and subpopulations

3. CONCLUSIONS AND RECOMMENDATIONS

A. General Conclusions

The Technical Advisory Group notes with regret that there was no participation at the opening and the closing of the meeting by Senior Representatives from the Ministry of Health Kenya. Neither was there participation by UNICEF Country Office Heads for Kenya and Somalia, nor the Ministry of Health or WHO from Djibouti, Chad and Eritrea. TAG noted that as a result of the absence of a representative from Eritrea only a sketchy report from AFRO was presented and the situation in Eritrea was therefore not thoroughly analyzed and discussed at the meeting. The TAG was also concerned that despite having faced outbreaks of wild polio virus in recent years, polio eradication activities were not receiving the priority attention needed in Kenya and Uganda, two countries that were at particularly high risk.

The TAG however appreciates the participation of Rotary International through their regional representative and is encouraged and pleased at efforts in supporting mapping of at risk populations in Ethiopia. The TAG recognizes the progress and achievements made by the countries in surveillance, supplementary immunization activities and risk analysis.

However, based on the wild poliovirus cases in Uganda in late 2010 and the isolation of WPV1 from an environmental sewage sample in Aswan, Egypt most closely linked to the 2008-2009 Sudan outbreak, the TAG is alarmed at the continued low-level circulation of WPV in the Horn of Africa region. Significant immunity gaps clearly exist and AFP surveillance performance remains sub-optimal in high-risk subpopulations and geographic areas in most countries. These high-risk subpopulations are also at risk for spread of wild poliovirus in the event of importation from areas with active transmission such as Chad.

The TAG noted the tremendous progress in strengthening AFP surveillance and improving immunity profiles in South Sudan, but surveillance and immunity gaps still remain in inaccessible geographic areas and in mobile, high-risk subpopulations. The TAG also endorses the principle of using an appropriate mix of bi-valent (bOPV) and tri-valent (tOPV) to achieve higher immunity during SIAs.

The TAG recommends that the following issues be addressed immediately to detect and interrupt transmission of wild poliovirus in the sub-region, improve population immunity and achieve certification-level AFP surveillance performance.

Addressing surveillance gaps: Most countries in the sub-region have clear surveillance gaps at sub-national levels based on AFP surveillance indicators and risk analyses. Across the sub-region, mobile, migrant, and underserved subpopulations are increasingly important as likely pools of unvaccinated or under-vaccinated children where circulation of WPV continues undetected. The risk of undetected transmission in these subpopulations is high.

Supplementary immunization activities: Although the majority of SIAs were implemented as recommended by the TAG in 2010, the quality of the activities remains variable across the sub-region and within countries as shown by independent monitoring evaluations. The TAG recognizes, that in the context of relatively weak routine immunization across the sub-region and ongoing low-level poliovirus transmission, high-quality implementation of SIAs remain the main strategy to interrupt WPV circulation in the Horn of Africa countries during the period 2010-2012.

Social mobilization and communications activities: The TAG noted that social mobilization and communication activities remain essential components to ensure high-quality immunization activities. However, most countries in the sub-region provided little evidence to the TAG that the social mobilization and communication indicators measured during independent monitoring are being used to improve SIA or routine immunization strategies or plans.

Routine immunization activities: The TAG recognizes the importance of routine immunization activities to maintain population immunity and notes that several countries, most notably South Sudan, have made significant improvement in routine coverage during 2010. However, because routine immunization will not improve dramatically over the next few years, SIAs remain the priority strategy for interruption of WPV transmission in the Horn of Africa countries. The TAG endorses the efforts of several countries to provide OPV to children during other health activities including Child Health Days, measles campaigns and other interventions during 2010 and 2011.

Outbreak preparedness and response: The TAG noted that the two regions and a number of countries had prepared sub-national risk analyses; the TAG also recognizes efforts globally to standardize the risk analysis methodology in polio-free countries.

Coordination and cross-border meetings of the Horn of Africa countries: The TAG noted with regret that no coordination or cross-border meetings occurred among HoA countries following the 2010 HoA TAG meeting. The TAG believes that coordination and cross-border planning and implementation of activities is a key priority to addressing mobile and migrant subpopulations at high risk for undetected WPV circulation and sharing best practices and strategies for identifying, mapping and reaching these subpopulations.

B. Recommendations

1. TAG Operations and Follow-up of Recommendations

In order to enhance the TAG's capacity to support polio eradication in the sub-region and to monitor the status of implementation of recommendations:

a. The Horn of Africa Bulletin produced by the WHO Secretariat every 3 months should track the status of implementation of all recommendations of the TAG and provide links to data on key monitoring and social mobilization indicators

b. Wherever possible, TAG members should participate in surveillance reviews, rapid assessments, advocacy visits or other appropriate activities in the sub-region, to obtain direct experience of

the situation in countries. Opportunities for TAG member participation should be identified by the WHO Secretariat. These opportunities should be included in the six month plans of the countries

c. In addition to full meetings, the TAG should interact through telephone or video conference at least once every 6 months to discuss progress on implementation of recommendations and make new recommendations as needed; ad hoc meetings (either in person or by teleconference) may be rapidly convened as necessary in response to importations or other epidemiological developments

d. Given the current epidemiological situation the next full meeting of the TAG should be convened in January 2012

e. In addition to the focal points nominated by WHO and UNICEF HQs, the TAG requests UNICEF ESARO and MENARO and WHO EMRO and AFRO to also nominate focal points by the end of May 2011 to support coordination, enable timely follow up on recommendations, and to ensure appropriate country participation in TAG meetings.

2. Cross-Cutting Recommendations

a. A Horn of Africa Coordination Meeting should be held within 4 months to identify key cross-border and cross-population issues for polio eradication; this meeting should be followed by cross-border meetings at local levels in the key areas identified.

b. WHO should coordinate with the countries to develop an integrated risk analysis for the Horn of Africa by the end of June, and to update this analysis every 6 months. This analysis should be used to inform prioritization for SIAs, and the planning and implementation of social mobilization/communication and surveillance activities.

c. Any new case of WPV or cVDPV in the sub-region should trigger immediate large scale mop-ups using the appropriate vaccine in compliance with global recommendations; these mop-ups must be coordinated across multiple countries.

d. At this stage of polio eradication mobile, migrant, and underserved populations across the sub-region are increasingly important. All countries are urged to identify these populations and their movement patterns by end August 2011, and to develop special plans to ensure that they are covered by surveillance, communication, and immunization activities.

e. Countries should continue to use all opportunities to provide OPV to children during any Child Health Days (CHDs), measles campaigns, and other health interventions that target mothers and children.

f. All countries should either develop, or review and update, a 6-month action plan for strengthening surveillance. These plans should be based on the results and recommendations of recent surveillance reviews or rapid assessments. WHO should ensure that a template for these

plans is developed to enable countries to easily summarize key actions, and to facilitate follow-up by Governments and by the TAG by end of May 2011.

3. Funding and Resource Mobilization

a. The TAG recognizes the resource constraints faced by the Global Polio Eradication Initiative and the potential impact of funding gaps on activities; the TAG urges Governments, partners, and donors to provide funding and other resources for necessary activities to achieve polio eradication.

b. HoA countries should continue to use the mechanism of national Interagency Coordination Committees (ICCs) in order to review funding requirements and determine the capacity of governments, partners and donors to respond. Rotary International has been an extremely active and effective advocate in countries of the sub-region and governments and partners are urged to ensure Rotary remains engaged.

c. All countries, WHO, and UNICEF, are urged to ensure early planning and budgeting for proposed surveillance, SIAs, and routine immunization activities so that funding and resource requirements are known to governments and partners, and to ensure timely availability of funding. The TAG emphasizes that if funding is available, no activity should be compromised by late delivery of funds or failure to organize appropriate distribution.

4. Routine Immunization

a. In order to reduce population immunity gaps in high-risk areas, PEI staff should systematically support efforts to strengthen routine immunization activities in high risk areas.

b. The Ethiopian experience in improving routine immunization through their Enhanced Routine Immunization Initiative should be documented, and the experience shared with other countries in the sub-region by the end of the third quarter 2011.

5. Communications and Social Mobilization

a. In the Horn of Africa countries, UNICEF country offices must translate the high-level agency GPEI commitment into action at all levels, through close oversight and quality assurance of the communications component of the program, and provide appropriate country office representation at Horn of Africa coordination and TAG meetings.

b. All HOA countries should develop annual National evidence- based immunization communications plans by the end of June 2011. Plans should include specific strategies to reach the migrant, mobile and high risk populations. UNICEF is requested to support country teams in the development and finalization of these communications plans.

c. In all countries, the micro-planning processes should incorporate relevant, local communication strategies, guided by the national communication strategy.

d. Future country presentations to the TAG should include a specific component on communications, including implementation status of the communications plan, and a report on key indicators (awareness, reasons for missed children, % of districts with plans in place, source of information). UNICEF is requested to provide a standard reporting template for the presentation by the end of May 2011.

e. To raise the profile and priorities for communications, at least one issue of the HOA Bulletin in 2011 should have a special focus on communications issues.

f. Source of information data collected across all countries during independent monitoring should be summarized and posted on the global website immediately after the SIAs.

6. **Country Level**

A. AFRO Region (Uganda, Kenya, Ethiopia, Eritrea and Chad)

1. Uganda

- Supplementary immunization activities:

  1. The TAG endorses the SIA plan for May and urges the Government and partners to ensure that all required resources are available

  2. Based on an updated risk analysis, plans should be developed for two sub-national rounds targeting the highest risk areas and populations, in the fourth quarter of 2011. In principle one round should use bOPV and the other tOPV to ensure the best balance of immunity against all three poliovirus serotypes

- Following the recent surveillance desk review, an updated 6 month plan of action for strengthening surveillance should be developed by the end of June 2011. As part of this plan key high risk areas and populations, including those in areas bordering DRC, Kenya, and South Sudan should be identified for rapid surveillance assessments, and a schedule for these assessments developed. A full surveillance review should be carried out by the end of the third quarter 2011.

- The Ministry of Health and partners are urged to ensure that polio eradication and immunization are given high priority and that resources and attention are devoted to ensuring the full implementation of activities.

2. Kenya

- Supplementary immunization activities:

1. The TAG endorses the SIA plan for May and urges the Government and partners to ensure that all required resources are available

2. Based on an updated risk analysis, plans should be developed for two sub-national rounds targeting the highest risk areas and populations, in the fourth quarter of 2011. In principle one round should use bOPV and the other tOPV to ensure the best balance of immunity against all three poliovirus serotypes

- High risk populations in north-eastern and eastern areas bordering Somalia, and in western areas bordering South Sudan and Uganda, should be prioritized during routine immunization, SIAs, and surveillance; as part of Kenya's assessment of mobile, migrant, and underserved populations these areas should receive special attention.

- Following the recent surveillance desk review, an updated 6 month plan of action for strengthening surveillance should be developed by the end of June 2011. As part of this plan key high risk areas and populations should be identified for rapid surveillance assessments, and a schedule for these assessments developed. A full surveillance review should be carried out by the end of the third quarter 2011.

- Particular attention should be placed on the appropriate collection, storage, and transport of AFP case specimens to ensure they reach the laboratory within established deadlines, and in good condition. A system of specimen tracking should be established by the end of May and indicators from this system reported to national level on a monthly basis.

- The Ministry of Health and partners are urged to ensure that polio eradication and immunization are given high priority and that resources and attention are devoted to ensuring the full implementation of activities.

3. Ethiopia

- Supplementary immunization activities:

1. Based on an updated risk analysis, plans should be developed for two sub-national rounds targeting the highest risk areas and populations, in the fourth quarter of 2011.

2. In principle, one round should use bOPV and the other tOPV to ensure the best balance of immunity against all three poliovirus serotypes

- The TAG notes the work done by the national programme to identify mobile, migrant, and underserved groups. Identified high risk populations in eastern areas bordering Somalia, and in western areas bordering South Sudan and Kenya, should be prioritized during routine immunization, SIAs, and surveillance; as part of Ethiopia's assessment of mobile, migrant, and underserved populations these areas should receive special attention.

- An updated 6-month plan of action for strengthening surveillance should be developed by the end of June 2011. As part of this plan, key high-risk areas and populations should be identified

for rapid surveillance assessments, a schedule for these assessments developed, and the plan modified as necessary based on their results.

- A full surveillance review should be carried out in the first quarter 2012.
- Intensive surveillance activities should continue to be carried out in the areas where cVDPVs circulated in 2009 and 2010 to ensure that any residual circulation is rapidly detected and responded to.
- The Ministry of Health and partners are urged to ensure that polio eradication and immunization are given high priority and that resources and attention are devoted to ensuring the full implementation of activities.

4. Eritrea

- An assessment mission by AFRO staff should be carried out immediately in order to support the national programme in updating a risk assessment to inform planning for immunization and surveillance activities.
- An updated 6-month plan of action for strengthening surveillance should be developed by the end of June 2011. As part of this plan key high risk areas and populations should be identified for rapid surveillance assessments, and a schedule for these assessments developed.
- The TAG urges WHO to support the national programme in addressing the continuing issue of very long delays in specimen shipment from national level to an accredited laboratory; The TAG noted with regret that this problem has existed for eight years and has not been resolved. The TAG urges the secretariat to find a credible mechanism for specimen shipment at latest by end-June 2011.
- The TAG urges the Ministry of Health of Eritrea and partners to ensure that polio eradication and immunization are given top priority and that resources and attention are devoted to ensure the full implementation of activities.

5. Chad

- Chad has a country-specific TAG; therefore, no recommendations will be made by the HoA TAG.

B. EMRO Region (Somalia, North Sudan, South Sudan, Yemen and Djibouti)

1. Somalia

- The TAG notes the inability to access children in large areas of central and southern Somalia and the risks this poses to Somalia and the whole sub-region, both because of ongoing cVDPV2

circulation and the risk of WPV importation. The TAG proposes a two-pronged strategy to reduce the risks.

- The programme should continue to explore all possible ways of negotiating access with the political leadership in the inaccessible zone.

  Pending achievement of that access, the following steps should be taken to reduce the risk:

  1. During NID and CHD rounds special attention should be placed on accessible areas surrounding the inaccessible zone to ensure that the highest possible coverage is achieved; routine immunization strengthening efforts should also be focused on these areas

  2. One or more additional SNID rounds should be carried out in accessible areas to ensure that a solid buffer of immunity surrounds the inaccessible zone

  3. Populations displaced from the inaccessible zone, and populations moving in and out of that zone, should be identified and special plans developed to ensure they are covered by surveillance and immunization activities; if necessary ad hoc special rounds should be carried out to cover displaced populations; permanent immunization posts should be set up in key transit points covering populations moving in and out of the inaccessible zone; the programme should collaborate closely with other UN agencies and NGOs in identifying these risk groups

  4. The programme should collaborate closely with the Kenya programme to ensure that populations in border areas of eastern Kenya and southern Somalia and populations crossing the border are identified and immunized

  5. A contingency plan for covering the currently inaccessible zone should be developed immediately to enable rapid implementation should any windows of opportunity for access arise; this should include planning for rapid availability of emergency funds. This plan should be linked with the overall UN humanitarian access plan

- Supplementary immunization activities:

  1. The TAG endorses the country programme's plan for two national CHD rounds in the third/fourth quarter of 2011. These rounds should be with tOPV given the risk posed by cVDPV2 circulation.

  2. An additional sub-national round should be carried out in the accessible areas of central and southern Somalia as soon as possible following the June/July CHD round and contingency plans prepared for additional rounds should the access situation fail to improve.

  3. A minimum of three rounds in the currently inaccessible zone should be carried out as rapidly as possible once access is achieved.

4. Two NIDs and two national CHDs should be carried out in 2012. At least one NID round should use bOPV and the other rounds tOPV to ensure the best balance of immunity against all three poliovirus serotypes

5. Short Interval Additional Dose (SIAD) campaigns should continue to be considered in geographically-isolated or security-compromised high-risk areas, as a means to improve campaign quality and coverage.

- An updated 6-month plan of action for strengthening surveillance should be developed by the end of June 2011. As part of this plan key high-risk areas and populations (including those in inaccessible areas for immunization) should be identified for rapid surveillance assessments, a schedule for these assessments developed, and the plan modified as necessary based on their results.

- A review of implementation of recommendations of the June 2010 desk review should be carried out by the end of June 2011.

- The TAG understands the difficulties of fully implementing independent monitoring in Somalia, but urges that global monitoring guidelines should be implemented as fully as possible for both NIDs and CHDs, using any reliable monitors and the standard monitoring format, and that results should be reported within 15 days of the round as per global recommendations.

2. North Sudan

- Supplementary immunization activities:

    1. The TAG endorses the country programme's plan for a combined measles/polio immunization round in western provinces in May

    2. Additional high risk areas/ populations should be covered with bOPV in June including Khartoum, Red Sea, and Northern states, and other potential transit or concentration areas for mobile/ migrant populations

    3. Additional rounds in areas bordering Chad will be necessary if transmission continues in that country; contingency plans for an additional round using bOPV in the three Darfur provinces should be developed to cover this possibility

    4. The TAG endorses the country plan for two national rounds in the fourth quarter of 2011. In principle one round should use bOPV and the other tOPV to ensure the best balance of immunity against all three poliovirus serotypes

- TAG recommends the following activities in Red Sea state to be completed before the sNID in June 2011:

    1. Consider a KSA study in the chronic refusal (Haya) subpopulation to determine the reasons behind refusals and inform strategic planning for both SIAs and EPI activities

2. Map and quantify the refusal population and analyze trends of acceptance and healthcare seeking behaviour by end June 2011

3. Develop specific strategies using UNICEF and local expertise to reach these populations by end July 2011.

4. A specific exercise should be carried out by the end of May to identify and map mobile, migrant, and underserved populations, including areas of concentration and routes of movement, in order to identify any groups that may not be effectively covered by surveillance and immunization. Any identified high risk groups should be included in the mid-year round recommended above. Additionally a specific plan should be developed by the end of June to ensure that any identified groups are effectively covered in subsequent surveillance and immunization activities.

- Following the recent surveillance assessments, an updated 6 month plan of action for strengthening surveillance should be developed by the end of June 2011. As part of this plan key high risk areas and populations should be identified for rapid surveillance assessments, a schedule for these assessments developed, and the plan modified as necessary based on their results. A full surveillance review should be carried out in the first quarter of 2012.

- TAG recommends an immediate feasibility assessment of implementing environmental surveillance in Khartoum as a supplementary surveillance activity, particularly in light of the Aswan, Egypt WPV1 sewage isolate, genetically linked to the 2008-2009 Sudan outbreak.

3. South Sudan

- Supplementary immunization activities:

    1. The TAG endorses the country plan for two national rounds in the fourth quarter of 2011. In principle one round should use bOPV and the other tOPV to ensure the best balance of immunity against all three poliovirus serotypes

    2. Contingency plans to carry out special rounds in currently inaccessible areas (see below) should be developed immediately to ensure that rounds can be rapidly implemented in the event that access is achieved

- Critical inaccessible areas identified in the recent surveillance review should be defined as soon as possible, and all available information on these areas collated including population size and population movement data; a specific plan on accessing these areas and populations for surveillance and immunization activities should be prepared by the end of June.

- A specific exercise should be carried out by the end of June to identify and map mobile, migrant, and underserved populations, including areas of concentration and routes of movement, in order to identify any groups that may not be effectively covered by surveillance and

immunization. A specific plan should be developed to ensure that any identified groups are effectively covered.

- The remaining states pending completion of the April surveillance review (Western Equatoria and Unity) should be completed as quickly as possible; the recommendations of the surveillance review should be fully implemented, and an updated 6 month plan of action for strengthening surveillance based on the findings of the review should be developed at latest by the end of May 2011.

- WHO should by October 2011 evaluate the impact of contact sampling of all AFP cases on surveillance quality, taking into account the costs as well as the benefits, to inform decisions on continuation of this practice in subsequent years.

4. Yemen

- Supplementary immunization activities:

    1. Plans should be developed for two national rounds in the second half of 2011. Timing may be dependent on the political situation and a contingency plan should be developed for sNIDs to be implemented during a window of opportunity if NIDs are not possible.

    2. In principle, one round should use bOPV and the other tOPV to ensure the best balance of immunity against all three poliovirus serotypes

- An updated 6-month plan of action for strengthening surveillance should be developed by the end of June 2011. As part of this plan key high risk areas and populations should be identified for rapid surveillance assessments, and a schedule for these assessments developed. A full surveillance review should be carried out by the first quarter of 2012.

- The Ministry of Health and partners are urged to ensure that polio eradication and immunization are given high priority and that resources and attention are devoted to ensuring the full implementation of activities.

5. Djibouti

- Given the risks of importation of WPV or cVDPV into Djibouti, the Ministry of Health is urged to ensure that polio eradication and immunization are given the highest priority and that resources and attention are devoted to ensuring the full implementation of surveillance and immunization activities.

- The already planned and funded second NID from 2010 (moved to February 2011) round should be implemented as soon as possible.

- The recommendations of the 2010 surveillance review should be fully implemented as soon as possible.
- In order to support national staff, technical support in the form of a STOP team member should be deployed immediately.

TECHNICAL ADVISORY GROUP ON POLIO ERADICATION IN THE HORN OF AFRICA

6TH MEETING, NAIROBI, KENYA, 4-5 MAY 2011

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