The circulating vaccine-derived poliovirus type 2 (cVDPV2) outbreak in Kenya.

Horn of Africa (HOA) region is an epidemiological belt that remains at high risk of persistent transmission of cVDPV2 due to the frequent cross-border movement of highly vulnerable, low immunity mobile populations along the common porous and insecure borders. The region has pockets of sub-optimal population immunity, with pools of under-immunized children among special population sub-groups such as nomadic pastoralist, immigrants, refugees, internally displaced persons (IDPs), and security compromised border settlements. The COVID-19 pandemic has reversed the fragile gains in polio eradication in the region due to the disruption of essential health services and surveillance activities. In 2020, HOA countries reported 148 cases of cVDPV2 (Somalia 14, Ethiopia 26, South Sudan 50, Sudan 58), leading to a well-coordinated synchronized outbreak response.

Kenya is the latest country that has reported an outbreak of cVDPV2 in the region. Between January-March 2021, the Ministry of Health reported three cVDPV2 isolated from healthy children arriving in Daadab Refugee Camps from Somalia. None of the children presented with paralysis and history of vaccination. Also, Kenya reported three more cVDPV2 isolated from the environment, two from Mombasa and one in Garissa town with all the parent cVDPV2 isolated have been circulating for the past seven years; all the cases are genetically linked to previous Somalia cases. The current outbreak in Kenya is attributed to the frequent cross-border movement of unvaccinated persons from outbreak affected neighboring countries of Somalia, South Sudan and Ethiopia and the disruption of surveillance activities worsened by the COVID-19 pandemic. The nationwide lockdown, restricted movement, and the engagement of the surveillance personnel in COVID-19 response has resulted in low Acute Flaccid Paralysis (AFP) case detection and missed vaccination schedules for many susceptible individuals and communities.

Kenya reported its last case of indigenous Wild Poliovirus (WPV) in 1984, an outbreak of WPV (non-indigenous) in 2013, registering 14 cases, with the first case from Daadab refugee imported from Somalia and still suffered from a cVDPV2 outbreak in 2018. The persistent transmission and trend clearly show evidence of the internal and international spread of the virus.

Kenya has the capacity to contain the current outbreak. It has planned two rounds of polio vaccination campaign in 13 high-risk counties targeting over 3,437,378 under-five children to be vaccinated using mOPV2 end May 2021 and preparing to introduce nOPV2 towards the end of the year. The country is conducting screening for AFP, vaccination and systematic sampling for poliovirus among new arrivals in refugee camps in Dadaab in Garissa County and Kakuma in Turkana County.

To prevent further importation of poliovirus, the Ministry of Health, WHO, UNICEF, CORE Group Polio Project (CGPP) and other GPEI partners are strengthening cross border coordination and collaboration on immunization & AFP surveillance with active engagement & involvement of community leaders on both sides of the international border of Kenya and Somalia. CGPP has intensified community-based surveillance, and outreach immunization services targeting special populations and security compromised areas.
Mr. Mukhtar narrated, “I knew this was not just a negative rumor going around.” He continued, “Such rumor is particularly an important alert to both community members chosen from the community and trained on lay case definitions, are often held high by their communities and trained to report on a cluster of diseases occurring in humans and animals in their communities.

**Detection**

The outbreak of the RVF disease in Mandera county which occurred Mid-January had been an opportunity to showcase volunteer contributions to both community-based surveillance & facility-based surveillance. Usually, the volunteers within their communities do active case search, reporting of disease alerts, referring cases to health and veterinary clinics, engage in social mobilization activities, rumor reporting, and sharing feedback to the communities.

On 23rd January 2021, Mr. Mukhtar Abdullahi, a CDR who volunteers in the villages of Mado, Kalicha, Kimalab, and Rhamu-Dimtu, reported rumor spreading in his designated villages concerning, “a suspected RVF disease having caused fatalities of camels and one individual after feasting on camel meat that was bleeding from its openings before slaughtering”.

Mr. mukhtar narrated, “I visited the suspected zone, inter-viewed everyone who lived in the setting, including those who feasted on the meat of the dead camel. He further said, “I did extended surveillance in the neighboring villages and watering places to gather more information. I immediately notified Mr. Mohamed, our ADRA program officer, and Rhamu sub-county Veterinary officer, of the concerns.”

With the first human suspect testing positive for RVF and succumbing to the disease, it got apparent that the RVF disease transmissions were ongoing in the community without any reports. Using the One Health (OH) task force, the county government swiftly mobilized the required resources, constituted a high-level multi-sectoral team, with the veterinary department taking the lead, conducting the investigation, and undertaking risk assessment and response where samples of both human and animal were collected for laboratory analysis.

The results for the laboratory analysis were, out of 48 samples collected from camels, 17 turned positive. For humans, on the other hand, 6 samples were collected out of which 1 turned positive. Therefore, these findings were sufficient to consider the event of an outbreak and trigger multi-sectoral response engaging other partner organizations and the national government.

**Response**

With the increased positive cases in the villages, the OH task force, enforced a 35 days (24th February to 1st April) provisional quarantine notice, which restricted livestock movement. The task force conducted ring vaccination in the affected sub-county to reduce transmission of the virus with supplementation of scaled-up community, facility-based surveillance activities and community mobilization and sensitization activities.

For partner coordination, 7 coordination meetings were held on outbreak response with the lead agent county government and partners including CGP-GHS, RACIDA, and Danish Refugee Council (DRC). Weekly briefs were shared on the progress of the response interventions among the partners. At the community level, the volunteers underwent a refresher training on RVF which included community case definition, signs, and symptoms, reporting, and control measures to enhance community-based surveillance.

Through routine surveillance, the volunteers reported 47 official camel deaths with more death assumed to be occurring but not reported. Community Volunteers reported a total of 232 zero reports, 6 new rumors, and 93 animal alerts which met the lay case definitions out of which 19 were from the affected zone.

Targeted social mobilization and community dialogues were done in the affected settlements reaching 1600 people with messages on lay case definition, mode of transmission, prevention, and control measures. Jointly with the county government, partners participated and supported ring vaccination activities with the purchase of 300,000 doses of vaccines, reaching a total of 39,383 animals (36,637 shotts, 363 cattle, and 12,383 camels). The volunteers participated by mobilizing herders before the vaccination teams arrived.

After the quarantine was lifted, several measures such as strict pre-slaughter inspection, thorough post-mortem inspection in major slaughterhouses, limited home slaughter, and high hygiene conditions among small-scale milk and meat traders were put in place for the herders.

**Results/impact**

It got clear that the County OH health task force is a strategic entity utilized for coordination mechanisms in the event of emerging risk. Surveillance, vaccination, communication, and coordination for response co-jointly undertaken. Implementation of the quarantine and the mobilization were made possible by coordinating with other governmental structures such as the sub-county administrator, and county commissioner.

Community volunteers were recognized as an essential link during this outbreak. They demonstrated a wealth of knowledge on their communities, readily available, and could easily communicate urgent messages timely. They were handy during sensitization meetings, mobilizing herders before ring vaccinations, sharing quarantine measures with the community members, conducting active case search, and reporting alerts that were influential during the outbreak. Because of the increased engagement, community members started sharing information on sick animals presenting signs and symptoms of RVF and other animal diseases. This was an opportunity to gather community feedback from the community members.

**After-action review**

The number of human and animal cases has been reducing and following the sustained implementation of the public health RVF control and prevention measures using the One Health approach. The county intends to conduct an after-action review to understand how well the response was undertaken and what lesson to draw from this event.
Core Group Polio Project works in underserved, security-challenged and hard-to reach areas along the Kenya-Somalia, Kenya-Ethiopia and Kenya Sudan border. The project inhabitants are mainly pastoralists, refugees and other members of nomadic populations who do not have ready access to facility-based health care and veterinary health services and weak coordination among local stakeholders.

In order to improve coordination among the various stakeholders CGPP has embarked on mapping human and animal infrastructures under the one health approach. This is a buildup to the community-based surveillance being undertaken in the project supported areas. The infrastructure mapped includes the following: stakeholders involved in Human / zoonotic disease (Hospitals all levels, Local NGO’s dealing in health and services offered, community informants), Vet (Livestock marketing association (Trade), Animal Health Assistant /Community Disease Reporters, local experts (Handling fractures and retain placenta), Local herbalist, traditional weather forecasters), provincial/ county administrative officers (Chief & ward administrator office, Sub-chief office, National Disaster Management Authority), trade and industry (Agro-vets, animal, slaughter house etc), Water sources (permanent and Seasonal), Transport infrastructure and animal migration routes.

The mapping exercise will make it easier to identify stakeholders, their specialty, contact person and office geocodes. The information gathered will be analyzed and shared to all the stakeholders and data base created so that in case of outbreak in a particular corner it will be easier to share the information to community along the affected routes, raise early warning messages and also mobilization of stakeholders in that area for timely intervention.

GIS Early warning mapping for Global Health Security Infrastructures for the border counties in Kenya

Hard-to-reach pastoral communities reaping the fruits of Community based surveillance

By: Adan Hujale - Project Officer, World Vision Kenya

World vision Kenya implements CORE Group Polio and Global Health Security projects that targets to contribute to polio eradication initiatives and enhancing community-based disease surveillance for Priority zoonotic diseases in high risk and hard to reach populations. The USAID funded project directly supports the department of health and department of veterinary services to enhance early warning and prompt detection of Polio and priority zoonotic diseases.

Through the Global Health security project, Wajir County recruited, trained and supported community disease reporters across the county to conduct real time reporting of animal diseases and offer basic health care services.

Muhumed Hassan is among the trained disease reporters and lives in Basir village of Edas sub-county that is 204km from the county headquarters. With Basic education on animal health, he offers services such as advising on good veterinary practices, treating of sick animals, animal vaccination and preparing reports on animal health and their products.

The county government has recently constructed a dispensary in Basir village but not operationalized and both human and animal health issues have been left at the mercy of community volunteers and disease reporters. With over 2,000 households and 10,000 animals of different species, the area majorly rely on their livestock as their source of livelihood.

Muhumed Hassan, as the area disease reporter has been at the forefront in early detection and reporting of priority zoonotic diseases and conducting minor treatments of sick animals in the village.

“I have tramped over 20kms with my goats to reach to Basir village so that i could get treatment for my sick animals. Muhumed is the nearby animal ‘doctor’ and we always seek services from him”. Says Amina Adow, A pastoralist from Basir Area.

Due to its proximity to Isiolo county and Ewaso nyiro basin, Basir and its surrounding villages was known for cases of Rift Valley Fever (RVF) and Trypanosomiasis disease in the past and the community disease reporter has reported over 22 alerts of animals exhibiting symptoms of RVF and trypanosomiasis for the last 6 months.

“Pastoralist from all over Basir area come here to seek treatment and vaccination for their animals. Muhumed is the village animal health ‘doctor’ and sometimes moves with the pastoralists to help them treat their sick animals” Says the Local Area Chief, Bishar Omar.

The county department of veterinary services and the sub-county veterinary officer work closely with Muhumed to get updates of animal health issues in the area, involve him in county exercises such as mass vaccinations, treatments, and sample collection for testing of suspected diseases.
**DATA CORNER FOR THE QUARTER**

**COMMUNITY BASED SURVEILLANCE: ALERTS PICKED FOR QUARTER 2**

<table>
<thead>
<tr>
<th>Region</th>
<th>Animal</th>
<th>Human</th>
<th>Rumour</th>
<th>Zero</th>
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<tbody>
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<tr>
<td>Gedo</td>
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<tr>
<td>Garissa</td>
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<td></td>
<td>97</td>
</tr>
</tbody>
</table>

**N/B:** Zero reports mean the community volunteer is active but no alerts to be reported.

**CBS DATA DISAGREGATTED INTO ANIMAL AND HUMAN ALERTS**

**Zoonotic alerts reported by the Community Mobilizers in CGPP supported counties in Kenya (01/01/2021 - 31/03/2021), N=258**

- Suspected trypanosomiasis: 107
- Suspected RVF: 38
- Suspected Rabies: 30
- Suspected brucellosis: 31
- Suspected anthrax: 15
- Cluster animal deaths: 39

**Human alerts reported by the Community Mobilizers in CGPP supported counties of Kenya & Somalia (01/01/2021 - 31/03/2021), N=123**

- Suspected neonatal tetanus: 5
- Suspected measles: 16
- Suspected AFM: 10
- Fever cough breathing problem: 4
- Cluster human deaths illness: 3
- Acute watery diarrhoea: 29

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The project managed to report a total of 4,335 alerts with 258 animal alerts, 123 human alerts, 74 rumors and 3,880 zero report.
Social Mobilization: Routine immunization during outreach services to hard to reach border, nomadic pastoralist for the quarter.

A total of 39,107 persons (Males 14,114, Females 24,993) were reached with routine immunization and messages during social mobilization sessions while in Somalia 5,991 (Males 2509, Females 3482).

AFP surveillance active case search by villages in Kenya and Somalia (01/01/2021 - 31/03/2021)

Strengthening Routine Immunization
Outreaches Supported during the quarter: 178 (Kenya 172, Somalia 6)

Defaulter tracing children < 1 years
Number of defaulters: 5,627 (Kenya 5,107, Somalia 520)
Number of children traced: 3056 (Kenya 2,811, Somalia 245)

Suspected Acute Flaccid Paralysis Cases:
A total of 14 cases were detected during active case search. The CMs were able to visit a total of 56,204 (Kenya 31,385, Somalia 24,821) households.

Social Mobilization in Kenya for Q2

Social Mobilization in Somalia for Q2

Social Mobilization
A total of 39,107 persons (Males 14,114, Females 24,993) were reached with routine immunization and messages during social mobilization sessions while in Somalia 5,991 (Males 2509, Females 3482).
Infectious disease threats, have become cross-border in nature and requires effectual cross-border approaches to prevent, detect, and respond in today’s globalized world. Countries around the world have committed to develop, maintain, and sustain core public health capacities, through World Health Organization’s (WHO) International Health Regulation (IHR) to respond to public health threats. Countries that have already developed their core capacities have committed to assist other countries who are in the process or still yet to develop them. However, the foundation of cross-border detection and response begins locally, where diseases emerge with local cross border health officials on the front line of public health surveillance and response. In the recent past, WHO called for robust cross border coordination to mitigate the spread of deadly transmissible/communicable diseases like Polio, Ebola, among others.

Under the leadership of Kenya and Somalia’s respective Ministry of Health and in collaboration with WHO, Core Group Polio Project (CGPP) began holding cross-border meetings in October 2014 with the objective of improving collaboration between the health department and administrative authorities in the border regions. In October 2015, CGPP established a total of 7 Cross Border Health Initiative (CBHI) committees in 5 polio high-risk counties in Kenya and 2 regions in Somalia. The committees were tasked to ensure vaccination of all cross-border populations, supporting active case search for Acute Flaccid Paralysis (AFP), conducting joint case investigations of cross-border AFP and Wild Polio Virus (WPV) cases, and synchronising all polio supplemental immunisation activities (SIAs). The project formed the CBHI members who recruited community mobilizers, to conduct social mobilisation & sensitization of communities, perform community-based surveillance on vaccine-preventable diseases, report suspected AFP cases, promote routine immunization, and trace immunization defaulters.

During the quarter, CGPP conducted one cross border coordination meeting that was held in Liboi, Garissa, Kenya, supported by the Somalia project. The meeting’s key objective was to strengthen cross border coordination between the MOH team in Dadaab sub county, Garissa in Kenya and health officials in Afmadow district, Lower Juba region in Somalia. The meeting was also attended by local administrators, security team and private health practitioners from both countries. With the current unprecedented COVID-19 pandemic, cross border coordination is more crucial than even before and members requested for the revival of the major regional cross border coordination meetings.
Meet Hodan Dagane Salah, who is a community mobilizer for CORE Group Polio - Global Health Security Project, Horn of Africa based in Liboi, Garissa County, Kenya. She has been working as a community volunteer since 2009 to better community health and increase knowledge of the community members in her hometown. She later joined CORE Group Polio Project in 2016 to fight the outbreak of polio related virus and strengthen the surveillance due to the reported outbreak of the Wild polio Virus in 2013/14.

The main reason why Hodan chose to become a community mobilizer was to support her community members on the dire situation they were facing in terms of their health. It was clear to Hodan that her community was in need of community health workers due to outbreaks of circulating vaccine derived polio viruses (cVDPVs) and other diseases such as Cholera. Despite her demanding family schedule, Hodan was able to go an extra mile attending to the community needs where she found a lot of passion in her community work and was able to strike a balance between the two. According to her, women knew little about the importance of hygiene, especially during deliveries. Mothers had unsanitary ways of delivering babies at home and furthermore not take their children to the health facilities for vaccination. Mothers in the communities believed that immunizing their children would bring more harm than good.

Using CORE Group strategies of community-based disease surveillance towards eradication of polio and other vaccine preventable diseases, Hodan’s routine activities include, conducting active case search for any suspected polio child, outreaches for hard-to-reach areas as well as, defaulter tracing, and sensitization of the communities. She is considered as the link between the community and the health facilities. Hodan is always at the forefront of visiting households and educating parents especially mothers on the importance of immunizing their children. She empowers and enlightens them on the benefits of each antigen their children will be receiving, the schedule for the antigens, destigmatizing and mystifying any vaccination related rumors or stigma in her community.

The entire community setting regards Hodan and the work she does in her own community. She concluded, "Investing in women in the community is investing in the overall progress of the entire community".

About CORE Group Polio and Global Health Security Program:
CGP-GHS is a multi-year project funded by the United States Agency for International development (USAID) under award No. AID-615-A-16-0011. The project contributes to polio eradication initiative through community-base AFP surveillance, routine immunization, social mobilization and outbreak response in Kamukunjji, Nairobi, Turkana, Marsabit, Mandera, Wajir, Garissa, and Lamu counties in Kenya and Lower-Juba, Gedo region and Elbardhe & Rabdure districts in Bakool region of Somalia. In 2018, CGP-GHS received additional investment to support Kenya’s health security programming by integrating community-based surveillance for five priority zoonotic diseases-Anthrax, Trypanosomiasis, Rabies, Brucellosis and Rift Valley Fever.
Outreach session services to strengthen routine immunization session at Eymole in Mandera county.

Pastoralist community sensitization on VPDs, RFV and other priority zoonotic diseases along Wajir-Isiolo and Wajir-Marsabit border in Wajir County.

Community Dialogue Yaballo dispensary in Moyale, Marsabit county on the surge of suspected trypanosomiasis cases in the area and Rift Valley Fever sensitization.

Sample collection and vaccination of Rift Valley Fever on the affected herds in Mandera North, Kenya.

The team investigating a suspected Anthrax case in Mandera county reported by the community volunteer.