



TechnoHealth Surveillance Newsletter



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Editorial address

TechnoHealth Surveillance
Newsletter
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From the Editor's Desk

Dear reader,

We have made some good progress in our strategy to promote community level One Health security, which is presented in this fourth issue of *TechnoHealth Surveillance*. We are very excited to have introduced to community our research project titled “Enhancing community-based disease outbreak detection and response in East and Southern Africa”. It is interesting to learn about where we work and reflections from community that we support. You will also find in this issue the SACIDS plans to complement national efforts to control cholera outbreak in Tanzania, and recent formative discussions with the Ministry of Health, Community Development, Gender, Elderly and Children.

In this issue, we report how prompt response could control the spread of impetigo-like disease outbreak in a community. We are also delighted to share with you how SACIDS team liaised with community to influence behavioral changes towards a neurological syndrome affecting goats and sheep in Ngorongoro district.

Kindly do not hesitate to share with us stories on health related events occurring in humans, animals and environment for the sustainability of our newsletter.

We wish you an informative read and would appreciate your feedback!

Enjoy your reading!

SACIDS introduces DODRES project to communities

From May 1-9, 2016, the Southern African Centre for Infectious Disease Surveillance (SACIDS) team (Eric Beda, Mpoki Mwabukusi, Moses Ole Neselle and Calvin Sindato) visited 10 villages and seven streets (herein after also referred to as villages) in Ngorongoro and Morogoro Urban districts in Tanzania, respectively. The aim of this visit was to introduce to communities the Skoll Global Threats Funded (SGTF) project titled “*Enhancing community-based disease outbreak detection and response in East and Southern Africa (DODRES)*”. The villages visited in Morogoro were Bigwa-Barabarani, Lukunju, Mgolole, Kasanga, Mgaza, Korogoso and Madaganya. The villages in Ngorongoro were those close to, or located along, the Tanzania (Ngorongoro district)-Kenya (Narok county) border namely Ololosokwan, Njoroi, Mondorosi, Enguserosambu, Naan, Kisangiro, Jema, Pinyinyi, Soitisambu, Sukenya and Digodigo.

During the preliminary visit the SACIDS team consulted with stakeholders including the respective District Medical Officers, District Veterinary Officers, District officers responsible for human and livestock health data management, village chairpersons, livestock extension officers, in-charges of health facilities and community health workers/reporters (CHWs/CHRs).

All the stakeholders supported the innovative idea of using digital mobile technology to enhance early detection, reporting and response to health events including disease outbreaks.

Exploration on the availability and strength of mobile phone internet connectivity revealed that all the project areas in Morogoro have wide-spread mobile phone internet coverage, with reasonable broadband speed that can support transmission of electronic data from community to various levels. On the other

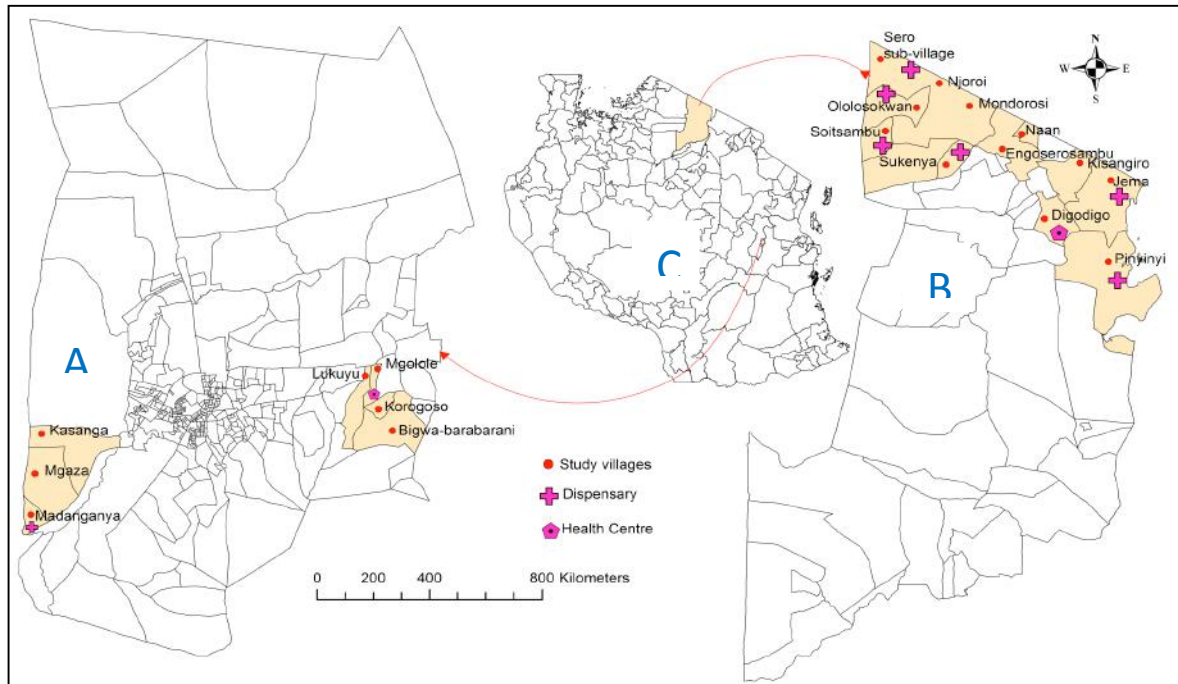
hand, the project villages in Ngorongoro have at least some patchy pockets with internet link that can be accessed to transmit data.

Residents in the visited villages reported to access health care services either within or in the neighboring villages. However, residents in Naan village reported to access health services at Orumesuti dispensary in Kenya (located 10 km from the village) rather than from the Waso hospital which is the nearest health facility in Tanzania located 34 km from Naan. All the health facility in-charge officers, livestock extension officers and CHWs visited owned basic feature phones (non-smartphones). However, they were all aware of the smartphones although almost all of them reported to have never used them before.

During the visit, it was observed that people and livestock were interacting freely across the border between Kenya and Tanzania mainly to access livestock markets and domestic needs in either country. This cross-border communication emphasizes the importance of collaborative cross-border surveillance, prevention and control of infectious diseases.

The project villages in Ngorongoro are remotely located and roads were not easily passable during the rainy season. In some locations there were no bridges making it difficult to cross the rivers. These observations emphasize further on the importance of having improved disease surveillance and preparedness plans.

Our plan within the next month is to conduct training on digital surveillance to all the stakeholders in the project villages and deploy *AfyaData* tool (mobile phone digital surveillance tool) for capturing and reporting of health events from the community to district levels. We anticipate that *AfyaData* tool will enhance early detection, reporting and response to health events including disease outbreaks.



Maps of Morogoro-Urban (A) and Ngorongoro (B) districts showing location of the study villages. The insert (C) is the map of Tanzania



IDSR focal person traffics through to estimate the depth of Oldonyo Sambu river in Ngorongoro before letting the project's vehicle cross through



Good Samaritans assisting the SACIDS team to free their vehicle that stuck in the mud in Ngorongoro Conservation Area

SACIDS pledges to support national cholera control efforts

Cholera which is an acute diarrheal infection caused by ingestion of food or water contaminated with the bacterium *Vibrio cholera* can kill humans within hours if left untreated. According to the World Health Organization sources, the recent and largest cholera outbreak in Tanzania was first reported in Rorya district in the Mara region in July 2015. By late July 2015, the Kigoma region also became affected. By end of August 2015, new foci of cholera were identified in Dar es Salaam, Pwani, Iringa and Morogoro regions. According to the

Tanzanian Ministry of Health, Community Development, Gender, Elderly and Children sources, as of May 1, 2016, a total number of 21,124 cases had been reported in the country with 331 deaths attributable to this recent cholera outbreak (Case Fatality Rate= 1.6%).

A multisectoral National Cholera Task Force provides oversight and coordination for the response to the epidemic. Aware of the national crisis, the Southern African Centre for Infectious Diseases (SACIDS) through the

DODRES Project held initial discussion with Morogoro District Cholera Response Team to explore and discuss challenges faced by the team and how DODRES project could help and complement the local and national efforts in containing the outbreaks. Thanks to SGTF who approved efforts to support cholera response on emergency basis. The SACIDS representatives attended the Task Force meeting held at the Ministry of Health headquarters on May 20, 2016. It was agreed that starting June 2016, SACIDS will complement national cholera control efforts by supporting:

- Designing, developing and deploying a surrogate-based cholera reporting system enhanced by use of ICT tools and Community Health Reporters

(CHRs) in Dar es Salaam and Morogoro Regions;

- Designing, developing and deploying a dashboard for cholera response team to manage and coordinate their activities;
- Training and equipping at least 60 CHRs, and Cholera Response teams in the most hit districts of Morogoro and Dar es Salaam on how to use these tools in the fight against cholera;
- Support laboratory confirmation of multi-agents for differential diagnosis of diarrhoea and other 'cholera-like' conditions in Morogoro and Dar es Salaam.

To implement the activities, SACIDS is planning a consensus meeting to be held on June 14, 2016 in Dar es Salaam.

Prompt response controls spread of impetigo-like outbreak in Ngorongoro

It was on April 21, 2016 when Malambo primary school in Malambo village, Ngorongoro district, with over 900 boarding- and 300 day-pupils noticed an occurrence of impetigo-like disease. The skin condition involved four male boarding pupils aged 7-12 years, living in the same dormitory at the school. Each two of the patients were reported to have been sharing a bed, which was a common practice because of limited facilities available in the school.

The school authority reported the incidence on the same day to community health reporter (CHR) in Malambo village, who immediately advised the patients to be taken to a local dispensary in the village. On the same day, the CHR also shared the event with the SACIDS established CHRs-specialists WhatsApp group. Exploring about the incidence at the dispensary, it was revealed that an index case had suffered from rashes four days before clinical signs were seen in other three pupils.

The main clinical manifestations observed included swelling of hands with itchy rashes

and red sores that subsequently turned into painful fluid-filled blisters. On the day of presentation at the dispensary, the blisters in the index case had eroded and were found discharging whitish-yellow fluid. Prescription was made for antibiotic ointment and patients were instructed to wash the affected regions gently with warm water. Although the antibiotic ointment was out of stock at the dispensary, alternative drug store where parents/guardians could purchase was advised through CHRs-specialists WhatsApp group.



The impetigo-like condition was considered contagious and therefore, to control its spread to other schoolchildren, the ill ones were excluded from school to complete

medication at their respective homes. While on medication at home, a boy aged 5 years who shared the bed with his ill brother also suffered from similar clinical manifestation. He was put to similar management.

Five days from the date the patients had started treatment, the CHR visited the households of the victims to provide public health education. Public health education was also extended to Malambo primary school and other villagers in Malambo. Schoolchildren, teachers and community were educated on personal hygiene measures that included washing hands regularly using water and soap, bathing

regularly, avoiding direct contact with lesions on the affected person, not sharing personal items including towels, beds and clothes, and making environment clean. In addition, they were advised to promptly seek medical care if similar clinical manifestations develop. All patients recovered after a week and thereafter the pupils resumed studies. Information shared with the CHRs-specialists WhatsApp group facilitated prompt management and controlled the spread of impetigo-like outbreak in the community.

SACIDS team influences behavioral changes towards '*ormilo*', a neurological syndrome of goats and sheep, in Ngorongoro

Using an outcome mapping (OM) approach, the SACIDS researchers (Peter Mangesho, Janeth George, Moses Ole Neselle, Kevin Queenan, James Mlangwa and Eron Karimuribo) have been monitoring behavioral changes among the Maasai pastoral communities in Ngorongoro district. Through an ongoing ecohealth-based study, '*ormilo*' was reported as one of the threats to pastoral livelihoods in Ngorongoro district.

Ormilo is a local Maasai term that is used to describe a neurological syndrome affecting livestock especially small ruminants. Its main signs range from "dizziness to madness" characterized by the animal failing to walk in a straight line, or walking in circles. The syndrome is linked to *coenurosis*, a parasitic condition associated with larval stage infection of the dog tapeworm, *Taenia multiceps* in goats and sheep.

The importance of *ormilo* in pastoral areas is due to its high prevalence and contribution to premature slaughter of affected goats and sheep or sales in livestock market in Ngorongoro district. The fact that it affects small ruminants, it is directly impacting on

pastoral livelihoods as goats and sheep are dependable sources of day to day cash flow of most pastoralists. Not only does *ormilo* have no treatment, it also affects sale price and slaughter yields.

The local approaches reported by pastoralists to identify sick animals were squeezing the ear of suspected animal. They believe that if the animal is truly infected, it will eventually die. They also believe that giving water to drink will kill an infected animal. Therefore, denying water was used as a strategy to keep the animal alive until it reaches the market for its sale.

It was also evident that the Maasai pastoralists were unaware on how the disease is transmitted or maintained in their ecosystem. They were also not aware of various factors associated with high prevalence of this condition in their areas. Some factors that were perceived by the Maasai to be associated with *ormillo* were: cold weather, rains and ticks. Others associated it with sharing drinking or sleeping space. Some pastoralists reported to have attempted treating *ormilo* cases using acaricides, while others used some antibiotics such as oxytetracycline or even anti-protozoal drugs such as buparvaquone.

However, all these attempts were not effective.

Following interviews and focus group discussions, the SACIDS team took an initiative to educate pastoralists on the association between *ormilo* and dog tapeworm. The education was also aired through a local radio, *Loliondo FM* using an interactive radio programme that allowed listeners to ask questions that were promptly answered by researchers. Proper disposal of affected brain parts of slaughtered goats or sheep was most emphasized. This means pastoralists were advised not to allow dogs to eat such parts so that the life cycle of the causative parasitic worm is interfered with.

People were very surprised to hear that their own habits were responsible for spreading and perpetuating *ormilo* in their areas. As the news spread within the district, many pastoralists, who were not directly part of the study, approached the SACIDS team with

more enthusiasm to find out if what they keep hearing was true.

Some asked whether they should actually kill their dogs for spreading harm to their livestock. It has been learnt that following public health education, the pastoralists in Ngorongoro have changed their behavior, particularly by not providing their dogs with raw offal and animal cadavers.

We hope that such behavioral change will progressively contribute to reduced prevalence of *ormilo* which in turn will improve livelihoods of these communities. The SACIDS team has drawn more intervention plans including setting up a community radio and using other innovative campaigns to educate pastoralists on various matters affecting animal and public health.

This work was supported by the IDRC-funded project entitled 'Integrated Human and Animal Disease Control for Tanzanian Pastoralists Facing Settlement.



Dogs at a slaughter place in Malambo, Ngorongoro



Taenia multiceps cyst in a slaughtered goat in Malambo, Ngorongoro

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