



TechnoHealth Surveillance Newsletter



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Editorial address

TechnoHealth Surveillance
Newsletter
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From Editors' desk

Dear reader,

We are pleased to welcome you to Volume 2, Number 8 of *TechnoHealth Surveillance*. In this issue, we share with you the experience from the Caribbean countries with interesting observations on similarities and differences between CaribVET and the Southern African Centre for Infectious Disease Surveillance (SACIDS) regarding approaches in disease surveillance.

AfyaData has been recommended as a potential tool to enhance integration of health data from multiple sources, which is presented in this issue.

SACIDS showcased its research activities during the *Nane Nane* exhibitions, which is highlighted in this issue.

Kindly find in this issue health events that have recently occurred in the community.

We are looking forward to your feedback and comments on this and other issues of *TechnoHealth Surveillance*. 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 a happy reading!

Disease surveillance from the other part of the World: Experience from the Caribbean region

“It was another experience to learn how disease surveillance is conducted in other parts of the World”. These are words from Prof. Esron Karimuribo who had opportunity to serve as a member of external evaluation team for the Caribbean-based animal disease surveillance network called CaribVET. The CaribVET is a collaborative network involving official veterinary services from 34 Caribbean countries. Membership to CaribVET is also extended to research institutions such as the CIRAD Guadeloupe (which hosts the CaribVET Secretariat) as well as academic institutions in the region including the Veterinary School of the University of West Indies, University of Guyana, Ross University and St. George’s University. Thanks to the CaribVET invitation, Prof. Karimuribo visited the Caribbean network on June 19-21, 2017 where he met and interacted with CaribVET officials and members. It is from this visitation that we are sharing experience from the Caribbean countries with interesting observations on similarities and differences between CaribVET and the Southern African Centre for Infectious Disease Surveillance (SACIDS).

Whereas SACIDS was conceived as One Health network of academic and research institutions involved with infectious diseases, the CaribVET is principally an animal health network that connects different countries and territories in the Caribbean region. It accommodates One Health issues through specific projects such as the ‘One Health, One Caribbean, One Love’ or vector-borne Epigenesis project and others with zoonotic diseases focus. It was also interesting to note that the CaribVET connects not only the Caribbean Community (CARICOM) member countries but also non-member. The non-member countries include France Territories of St. Martin, St. Barthélemy, Martinique, French Guyana and Guadeloupe, British Cayman Islands or Dutch

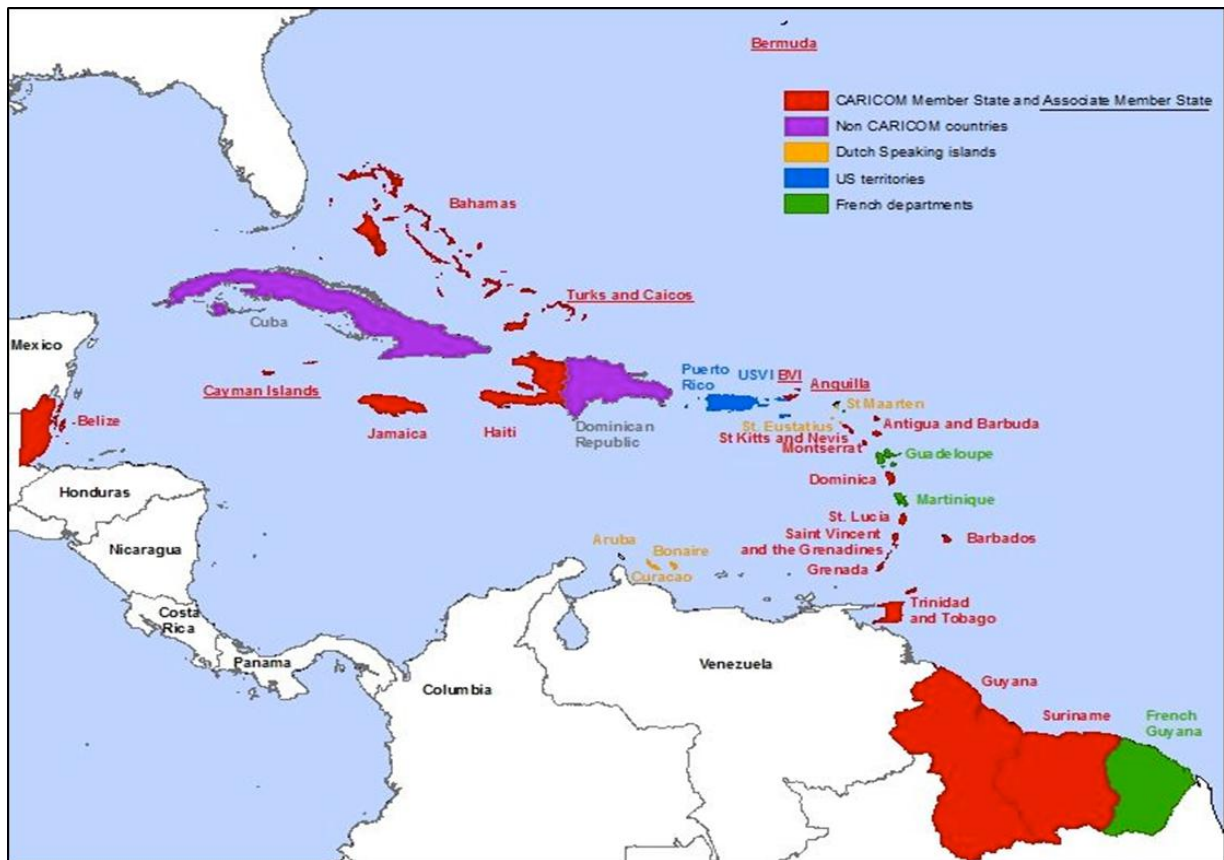
territory of Curaçao. Non-member countries can participate as either active members or just observers in the CaribVET meetings. Although CaribVET countries belong to different communities with different sanitary regulations and requirements, they are obliged to share disease information and best sanitary practices when it comes to combating Trans-boundary Animal Diseases (TADs) and those of epidemic potential in the region. Non-member countries also can benefit from training and capacity programs supported by CaribVET.

Like SACIDS, the CaribVET promotes the use of mobile technologies to enhance disease surveillance. It was found that KoboCollect® which is an open-source mobile app is being used in some CaribVET countries to enhance animal disease surveillance and resource mapping. The application, which is similar to the SACIDS AfyaData®, has functionalities allowing timely collection and submission of geo-tagged data using mobile phones. It has been used to support data collection related to diseases and animal production systems of poultry, swine and small ruminants.

Another interesting observation was on a successful story of controlling New World Screwworm (NWS) in Caribbean countries and in the United States of America. The talk by Dr. John B. Welch from USDA-APHIS on successful eradication of NWS outbreak in Florida between September 2016 and March 2017 using sterile fly release technique was interesting. Whereas some NWS-infested countries in Caribbean region including Jamaica failed to eradicate screwworm, this compares with challenges that the East African countries faced when tsetse fly eradication program using sterile male technique was implemented in the region in 1990s. The lessons learnt from the US Florida NWS eradication program could be used to eradicate tsetse flies in eastern and southern

African countries. It is concluded that we have a lot in common between Africa and Caribbean regions with respect to disease

surveillance as well as disease control and eradications.



Map of the Caribbean countries and territories members of the CaribVET Network

AfyaData has potential to integrate data from multiple sources....

The Southern African Centre for Infectious Disease Surveillance (SACIDS) in collaboration with the National Institute for Medical Research (NIMR) is implementing a project titled ‘Enhancing community-based disease outbreak detection and response in East and Southern Africa’ (DODRES). SACIDS has formed the National Advisory Committee (NAC) to provide strategic advices on the implementation of DODRES activities, and promote application of *AfyaData*, a digital technology developed to support real-time disease surveillance and response within Tanzania and cross-border ecosystems.

The members of the DODRES NAC are Dr. Ntuli Kapologwe (President’s Office Regional Administration and Local Government Authority), Dr. Emmanuel Swai (Ministry of Agriculture, Livestock and Fisheries), Dr. Janeth Mghamba (Ministry of Health, Community Development, Gender, Elderly and Children) and Dr. Florence Temu (Amref Health Africa). The Chairperson of the DODRES NAC is Dr. Deo Mtsiwa (Former Deputy Permanent Secretary, Regional Administration and Local Government).

The first DODRES NAC meeting was held in Morogoro on August 12, 2017. In his opening

remarks, Prof. Mark Rweyemamu (The SACIDS Executive Director) welcomed the DODRES NAC members and highlighted on the objectives of the meeting. During the meeting, the evolution of SACIDS disease surveillance strategy; DODRES Project objectives, an overview of activities and relevance to One Health disease surveillance, and strategic establishment of community radio were shared with participants. Demonstration was conducted on how *AfyaData* works to support One Health disease surveillance, and vertical disease surveillance systems. In addition, strategic rolling out plans for *AfyaData* to enhance early detection, timely reporting and prompt response to disease outbreaks was shared with participants.

Participants highlighted that One Health approach in disease surveillance has brought the animal and human health sectors closer and working together to solving community health problems more effectively than ever before. Multiple health data sources were reported to exist in Tanzania including

health facilities, Zonal Veterinary Centres, veterinary clinics, animal slaughter houses, research and academic institutions. It was highlighted that there is a need to include One Health course in the training curriculum for community health attendants in the country.

Based on its functionality and compatibility with other surveillance systems, *AfyaData* was recommended as a potential tool that can integrate data from the multiple sources to enhance appropriate policy formulation and implementation in the country. In his closing remarks, Dr. Ntuli Kapologwe highlighted on the potentiality of *AfyaData* to enhance collaboration between ministries responsible for human and animal health, higher learning institutions, research institutions, policy makers and policy implementers. Dr. Ntuli urged SACIDS to collaborate with the President's Office Regional Administration, and Local Government Authorities to enhance disease surveillance.



Prof. Mark Rweyemamu welcoming the participants of the DODRES NAC meeting



Dr. Deo Mtasiwa, Chairperson of the DODRES NAC, insisting a point during the meeting



Dr. Ntuli Kapologwe giving closing remarks during the DODRES NAC meeting



Participants of the DODRES NAC meeting

SACIDS showcased research activities during the *Nane Nane* exhibitions

The “*Nane Nane*” (Farmers’ day) also known as the Agricultural Exhibition, is a one-week fair that takes place every year during the first week of August in various locations of Tanzania. In the *Nane Nane* Agricultural Exhibition, farmers and other stakeholders showcase new technologies, ideas, discoveries and alternative solutions concerning the agricultural sector. It is a fair where government and private firms exhibit products, services and other activities to the public.

During the regional *Nane Nane* show held in Morogoro from August 1-8, 2017, the Southern African Centre for Infectious Disease Surveillance had an opportunity to showcase its scientific work in promoting

One Health security including application of *AfyaData*.

The community-level participatory surveillance approaches to support One Health disease surveillance using *AfyaData* is being implemented through “Enhancing Community-Based Disease Outbreak Detection and Response in East and Southern Africa” project funded by the SGTF.



The SACIDS-ACE Centre Leader, Prof. Misinzo, welcoming the Tanzania Deputy Minister for Health, Community Development, Gender, Elderly and Children, Dr. Hamisi Kigwangalla at the SACIDS booth during *Nane Nane* exhibition



SACIDS Communications Officer, Mr. Yunus Karsan, welcoming the Tanzania Minister for Natural Resources and Tourism, Prof. Jumanne Maghembe, at the SACIDS booth during *Nane Nane* exhibition



Mr. Mpoki Mwabukusi, from SACIDS, speaking to press about *AfyaData* app during the *Nane Nane* exhibition



Mr. Godluck Akyoo, from SACIDS, demonstrating *AfyaData* to the delegates from Nigerian Embassy during the *Nane Nane* exhibition



DODRES Project Leader, Prof. Eson Karimuribo, welcoming the Nigerian Embassy delegates at the SACIDS booth during the *Nane Nane* exhibition



Mpoki Mwabukusi, from SACIDS, explaining functionality of *AfyaData* to the Deputy Minister for Health, Community Development, Gender, Elderly and Children, Dr. Hamisi Kigwangalla, at the SACIDS booth during *Nane Nane* exhibition

Participatory disease surveillance from community perspectives

Through *Enhancing Community-based Disease Outbreak Detection and Response in East and Southern Africa (DODRES)* project supported by Skoll Global Threats Fund (SGTF), the Southern African Centre for Infectious Disease Surveillance (SACIDS) is implementing participatory One Health community-based disease surveillance using digital technology in Tanzania. The trained Community Health Reporters (CHRs) have continued to report health events occurring in human and animal populations using *AfyaData*.

In this issue, we report clinical manifestations that have been reported by CHRs in Ngorongoro and Morogoro districts from March to August 2017, and potential likely disease conditions as identified by One Health Knowledge Repository (OHKR), which is a database of expertly authored health content of priority infectious diseases of human and livestock.

Overall, a total of 268 livestock cases have been reported from a total population of 870 animals, of which 105 died, translating to a population morbidity rate and case fatality rate (CFR) of 31% and 39%, respectively. Over half (59%) of livestock cases (n=296) were reported in Ngorongoro and over half (57%) were from the animals aged < 1 year old.

Clinical manifestations in livestock from Ngorongoro were reported from four flocks of goats, three flocks of sheep and one flock

of chicken. Those reported in Morogoro were from three flocks of chicken, three herds of pigs and two flocks of goats.

The frequently reported clinical manifestations in goats and sheep included loss of appetite, diarrhea, coughing, difficult breathing, rapid breathing, reduced milk production, reluctant to move, abortion and sneezing. Those in chicken included diarrhea, sneezing and reduced egg production. The clinical manifestations in pigs were diarrhea and loss of appetite (Figure 1).

A total of 28 human cases were reported in Morogoro (15) and Ngorongoro (13). Over half (15/28) of the cases were reported among females and two thirds (19/28) were reported among individuals aged ≥ 5 years old. The frequently reported clinical manifestations in humans included body weakness, head ache, loss of appetite and diarrhea (Figure 2)

Based on the clinical manifestations reported, the most probable infectious conditions identified in goats and sheep by OHKR and likelihood percentage (p) were Peste des Petits Ruminants (60%) and Contagious Caprine Pleuro- Pneumonia (50%). The most probable disease in chicken was Newcastle disease (50%), and in pig was African swine fever (10%). The most probable diseases in humans were cholera (60%), malaria (50%) and typhoid fever (50%).

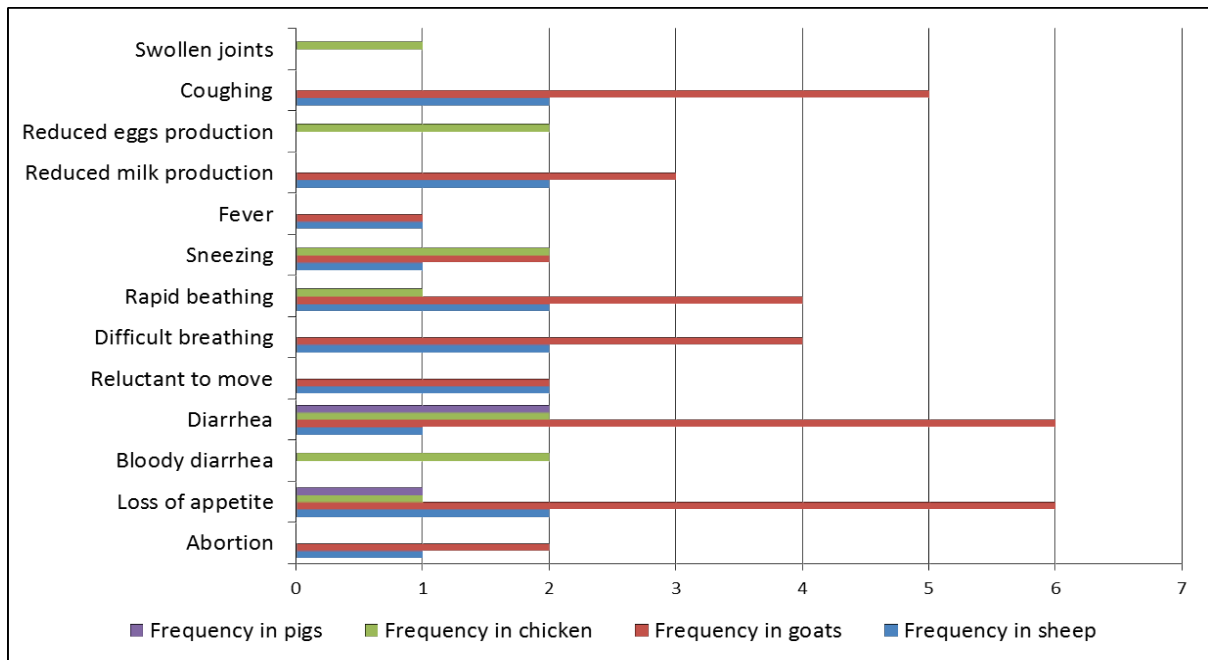


Figure 1: Clinical manifestations reported in livestock in Ngorongoro and Morogoro Urban districts

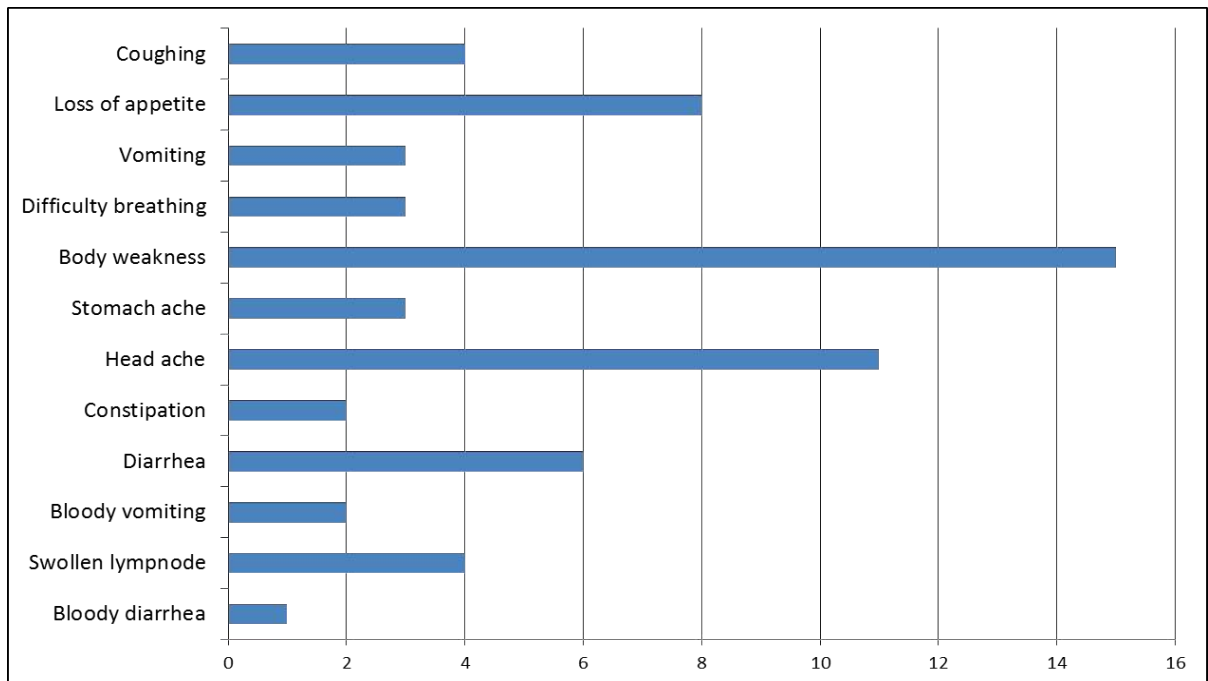


Figure 2: Clinical manifestations reported in humans in Ngorongoro and Morogoro Urban districts

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