



TechnoHealth Surveillance Newsletter



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Editorial address

TechnoHealth Surveillance
Newsletter

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From the Editor's Desk

Dear reader,

The Editorial Committee welcomes you to Volume 3, Number 4 & 5 of the *TechnoHealth Surveillance*.

The Southern African Centre for Infectious Disease Surveillance (SACIDS) has trained additional stakeholders on the use of digital technology in disease surveillance to enhance community-based One Health security, which is presented in this issue.

The One Health Knowledge Repository has been validated to enhance prediction of most likely disease conditions based on submitted clinical manifestations, which is highlighted in this issue.

We are delighted to have launched *AfyaData* at the Sokoine University of Agriculture, which is described in this issue.

The 5th International One Health Congress will be held in Saskatoon, Canada June 22 – 25, 2018. SACIDS will showcase its research activities during the event, and encourages all other African One Health Networks and practitioners to participate in the event.

We look 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.

Enjoy your reading!

SACIDS enhances community One Health security

Recognizing that early detection and diagnosis is central to triggering effective response to infectious diseases, the Southern African Centre for Infectious Disease Surveillance (SACIDS) has worked further on its strategy to empowering community to play active role in disease surveillance. The existing Community Health Reporters (CHRs) at village level were recruited and trained on the application of digital technology in the community-based disease surveillance using One Health approach. The aim of the training programme was to promote community level One Health security through improved outbreak detection, early communication and rapid response to enhance disease prevention and control at the source.



Team of researchers from SACIDS together with Mr. Gladius Mtaki, the IDSR focal person-Ulanga District Council, (first from right) walking through surface water runoff to identify and recruit CHRs for the training at community level.

Village visitation and recruitment of CHRs was conducted during the rainy season when most roads were hardly passable. The team was however well geared to park off the vehicle and traffic by foot through overland water runoff to

access the villages in the remote locations.



Team of Researchers from SACIDS together with IDSR focal person discussing with leaders in Minepa village in Ulanga on the recruitment of CHRs for the training

The training was conducted in Ulanga District from April 23-29, 2018.



Dr. Gasper Msimbe, the Morogoro Regional Veterinary Officer (standing left) and a team of SACIDS researchers, facilitating the training of stakeholders on the use of digital technology in disease surveillance

The stakeholders were drawn from five wards in Ulanga District. A total of 38 stakeholders were trained in the district including 33 CHRs and five officers-in-charge of primary health care facilities. Others included Integrated Disease Surveillance and Response Focal Person, District Medical Officer and District Veterinary Officer.

AfyaData, which is a mobile phone digital surveillance tool designed for capturing, reporting, data exploration, and provision of feedback on health events, was installed in the smartphones, which were provided to CHRs to enhance capturing of health events at community level.

The training package included recognition and recording of clinical manifestations of epidemic-prone and endemic diseases in human and animal populations, reporting using digital technology, and prevention and control measures relevant to the diseases. In addition, participants were trained on ethics and best practices during the provision of health care services, collection and submission of reports of health events to relevant authorities.



Mr. Gladius Mtaki, Ulanga District IDSR focal person (standing), highlighting on the importance of linking the health events from community level to the official disease surveillance systems for prompt actions to manage health events at the source.



Mr. Renfrid Ngolongolo, a researcher from SACIDS (standing) demonstrating to the officers in-charge from the primary health care facilities from Ulanga District the use of AfyaData in the visualization and exploration health events from community level

All CHRs were trained on how to refer patients to health care facilities and provided with referral forms. In addition, the CHR-specialist WhatsApp group network was established to assist sharing of experience, challenges and solutions.

The trained individuals were provided with certificates of participation and letters of introduction to authorities in their respective areas.

In his closing remarks, the Ulanga District Executive Director, Mr. Yusuph Daud Semuguruka thanked Sokoine University of Agriculture, SACIDS, National Institute for Medical Research and Ending Pandemics for the training and deployment of digital technology to enhance reporting and response to infectious diseases at community level in the district. He acknowledged consideration of One Health approach in the training program and said that the initiative has come timely when there is increased interaction between humans and animals putting the populations at high risk for zoonotic diseases such as rabies and anthrax.



Mr. Yusuph Daud Semuguruka, the Ulanga District Executive Director, (standing) delivering his closing remarks during the training.

SACIDS validates One Health Knowledge Repository

To enhance early detection, reporting and feedback loops, the Southern African Centre for Infectious Disease Surveillance (SACIDS) developed One Health Knowledge Repository (OHKR). OHKR is a decision-making expert system that helps local communities, ministries responsible for human and animal health to make prompt and appropriate decision required to prevent and control diseases. This database of expertly authored health contents includes guidelines, fact sheets, standard case definitions, frequently asked questions for different disease conditions, response protocols and recommendation and first aid advice

from livestock and human health perspectives.

Initially, a priority list of key diseases was established based on their epidemic potential as well as being targeted for control and eradication by the Tanzanian government. Furthermore, a template was developed to guide content generation by the medical interns and veterinary graduates. The contents developed were proof read and endorsed by medical and veterinary experts working with the ministries responsible for health and livestock development before been released for testing in the field.

For human disease conditions, OHKR content was developed for the 15 priority diseases namely: Dengue, Ebola Virus

Disease, Marburg virus disease, Crimean-Congo Hemorrhagic fever, Rift Valley fever, Cerebrospinal meningitis, Anthrax, Highly Pathogenic Avian Influenza, Rabies, Plague, Measles, Typhoid fever, Malaria, Cholera and Yellow fever. Fourteen animal disease conditions whose OHKR content were developed are: Foot and Mouth Disease, Rift Valley fever, Peste des Petits Ruminants, Brucellosis, Trypanosomosis, Newcastle Disease, Contagious Bovine Pleuropneumonia, Contagious Caprine Pleuropneumonia, Lumpy Skin Disease, Anthrax, Rabies, Highly Pathogenic Avian Influenza, African Swine Fever and Malignant catarrhal fever.

In order to improve the functionality of OHKR, its validation was carried out by involving key stakeholders purposively selected. From veterinary side, these included farm/ranch veterinarian, wildlife veterinarian, those in small animal and mixed practice, poultry practice, and scientists from Tanzania Veterinary Laboratory Agency zonal centers. From human health side, professionals included experienced medical specialists from Muhimbili National Hospital, Muhimbili University of Health and Allied Sciences (MUHAS), University of Dodoma Faculty of Human Health and Allied Sciences, Dodoma Regional Referral Hospital and Morogoro Regional Referral Hospital. Other stakeholders included private practitioners, academicians from the College of Veterinary Medicine and Biomedical Sciences at Sokoine University of Agriculture (SUA) and MUHAS.

During the validation exercise that was carried out at SUA on May 18, 2018, the initially developed contents of OHKR were subjected to scrutiny process to enrich the built knowledge base. This was followed by development of scoring matrix of the clinical manifestations for diseases archived in the OHKR. The matrices were eventually used to create algorithms in the process of developing a decision-making system to support the prediction of most likely disease conditions based on the reported signs and symptoms from community level. The outputs of the scoring matrix have been integrated into the *AfyaData* platform.



Workshop participants posing for a group photo

A list of recommended actions created earlier for targeted users (community health workers/reporters, livestock extension officers, in-charge of health facilities, and district medical/veterinary officers) were improved. The contents are available in audio, video and text formats. The contents for OHKR, prepared in English and Kiswahili languages, have been archived in the multilingual web-based interface at SACIDS server. The OHKR archiving system has been programmed to receive data from community level, and

automatically send messages to relevant user on artificial intelligence and alerts of possible disease conditions occurring in human and animal populations. This output format enable the user to quickly establish the trend in terms of host, space (location) and time (date) of disease occurrence, and take necessary actions to manage the disease.

SUA launches AfyaData

The Southern African Centre for Infectious Disease Surveillance (SACIDS) based at the Sokoine University of Agriculture (SUA) in collaboration with the National Institute for Medical Research (NIMR) has designed a digital disease surveillance tools packaged as *AfyaData*. The tools are those which enhance community-based and official disease surveillance systems in the detection, reporting and feedback loops of health events occurring in animal and human populations and their environment. This program is implemented through the Enhancing community-based Disease Outbreak Detection and Response in East and Southern Africa (DODRES) project and is supported by the Ending Pandemics.

Using participatory One Health approach, *AfyaData* has been deployed to enhance community-based and official animal disease surveillance in five districts in Tanzania. It has also been deployed to support cholera surveillance in five districts in Tanzania.

AfyaData was officially launched at SUA on May 24, 2018 by Prof. Raphael T. Chibunda, the Vice Chancellor of Sokoine University of Agriculture. The event was attended by stakeholders from different sectors related to human and animal health in Tanzania including representatives of the Regional Administrative Secretary for Morogoro, Director General of the Tanzania National Park Authority, Director General of the National Institute for Medical Research, Director of Health, Social Welfare and Nutritional Services of the President's Office Regional Administration and Local Government Authority, Director of AMREF Health Africa in Tanzania, Executive Director of the Southern African Centre for Infectious Disease Surveillance and District Executive Directors for Ulunga, Malinyi and Kilosa District.



SUA VC, Prof. Raphael T. Chibunda (in the middle) launching AfyaData



SUA VC, Prof. Raphael T. Chibunda delivering his speech during Afyadata launching

In his remarks, Prof. Chibunda, highlighted on potential effect of AfyaData to enhance collaboration between the sectors responsible for human and animal health in the early detection, control and prevention of infectious diseases especially those transmitted between animals and humans. He argued the stakeholders to use AfyaData to capture health events occurring at community level to inform the relevant sectors on timely basis.

On his part, Mr. Yusuph Sonda who represented the President's Office Regional Administration and Local Government Authority emphasized on the need for the sectors responsible of

human and animal health and their environment to collaborate towards strategic control and prevention of infectious diseases. He highlighted further that the effectiveness of surveillance systems largely depend on timely availability of good quality data.



Mr. Yusuph Sonda (from PORALG) delivering his speech during Afyadata launching



Prof. Esron Karimuribo, DODRES project leader, addressing the audience during Afyadata launching



AfyaData launch participants posing for a group photo

Upcoming events

The 5th International One Health Congress will be held in Saskatoon, Canada June 22 – 25, 2018. The Congress is organized by the One Health Platform and the University of Saskatchewan, in cooperation with SACIDS. Special attention will go to antimicrobial

resistance, translational science, and recent advances in the fields of zoonoses and emerging infectious diseases. SACIDS will showcase its research activities during the event, and encourages all the African One Health Networks and One Health practitioners to actively participate in the event. For more information, visit <http://www.onehealthinitiative.com/news.php>.

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