JUNE. 2011 Vol. 1

EAIDSNet BULLETIN

EAST AFRICAN INTEGRATED DISEASE SURVEILLANCE NETWORK (EAIDSNet): JUNE-SEPTEMBER 2011 VOLUME 1 ISSUE 3

EAIDSNet is a member of Connecting Organizations for Regional Disease Surveillance (CORDS)

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1. Outbreak News

1.1. Rubella Outbreak in Tanga City, Tanzania

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On 18th June 2011 Tanzania Field Epidemiology and Laboratory Training Programme (FELTP), in the Ministry of Health and Social Welfare received a report from the Tanga Regional Medical Office of a suspected measles outbreak in Tanga city since 11th May, 2011. A total of 161 suspected cases had been reported, and the outbreak was localized in one village called "Mafuriko" which is situated about 7km on the outskirts of Tanga city, Tanga Region. 148 (92%) of the cases were aged above five years.

Figure 1: Map of Tanzania showing Tanga Region

All suspected cases presented with mild symptoms of generalized body rashes and fever. No deaths had been reported up to the date of notification, 18th June 2011. Before the investigation, five blood specimens were collected for measles confirmation and none tested positive; one specimen tested positive for rubella. From the date of outbreak detection up to 15th August, 2011, a total of 183 cases were reported with no deaths from Tanga city.

Measures taken in response to the reported outbreak

On 28th June, 2011 the investigation team made a courtesy call with the Regional Health Management Team (RHMT) in the RMO office and some members of the CHMT in Tanga city. The next day the team conducted capacity building to RHMT members about outbreak investigation and the role of laboratory in outbreak investigation: in particular, proper specimen collection, packaging, transportation and confirmation. The collaborative team from the Ministry of Health and Social Welfare and the RHMT made a field visit to the affected area of Mafuriko village where we met with local officials and conducted active case finding.

To ascertain the risk factors for the outbreak the team conducted a Case-Control study in Mafuriko village. Active case finding was done and cases in the line list who had already recovered from illness were traced in their households and controls were taken from the neighbourhoods or from the same household for interviews. Controls were persons who were not affected by the disease during the outbreak; one control was selected for every case and matched for age, sex and place.

Case definition

The investigating team used the following working case definitions:

- *Suspected:* "Any resident of Tanga city who had fever and generalized body rash and either cough, conjunctivitis or runny nose with onset from 1st May, 2011"

- *Confirmed:* "Any resident of Tanga city who had fever and generalized body rashes and either cough, conjunctivitis or runny nose with onset from 1st May 2010 AND with laboratory detection of IgM antibody by ELISA."

Data collection and analysis

Data were collected retrospectively through interview of parent or guardian at household level of both cases and control using structured questionnaires.

Blood samples (2mls) were taken from the cases who presented to Mafuriko health facility during the time of investigation, labelled and transported to Bombo Regional Hospital laboratory for separation of blood and serum. A total of 9 blood samples were collected, centrifuged and stored at cool temperatures of 2-4^{0}C then taken for laboratory confirmation of Measles/Rubella specific (IgM) antibody at Muhimbili Virology Reference Laboratory.

The data collected from cases and controls were entered into the computer and analysed by Epi info software version 3.5.3. Sera specimens were tested for Measles/Rubella IgM antibody by ELISA.

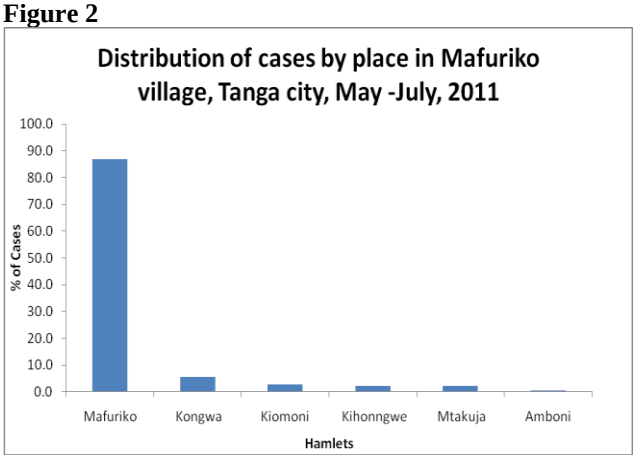
Results

The index case was a young school boy aged 10 years in class four who developed the symptoms of rash and fever on 08th May, 2011. He lived at Mafuriko village, Mzizima ward, which is located about 7KM outskirt of Tanga city. He did not attend treatment at any health facility rather he got care from home and continued to attend school. The first case was detected on 11th, May, 2011 at Mafuriko Dispensary from the same school as the index case.

Descriptive Epidemiology

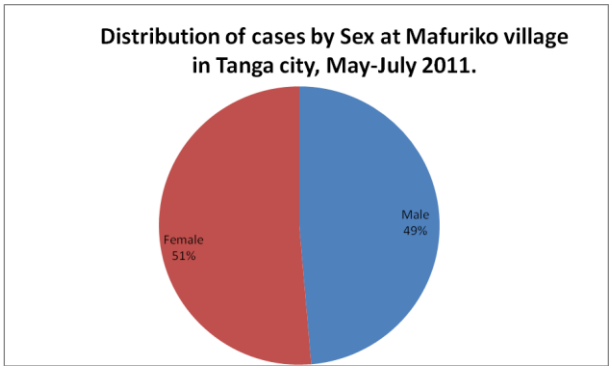
A total of 183 suspected cases of rubella had been reported up to 10th July 2011 from when the outbreak was first detected by the health system on 11th, May 2011. Among these cases, 8.2% [15] were aged under five, and 91.8% [168] were aged above five. About 87% [159] of all suspected cases were reported from Mafuriko hamlet, and the rest from other hamlets as shown by the Fig2 below.

Figure 2



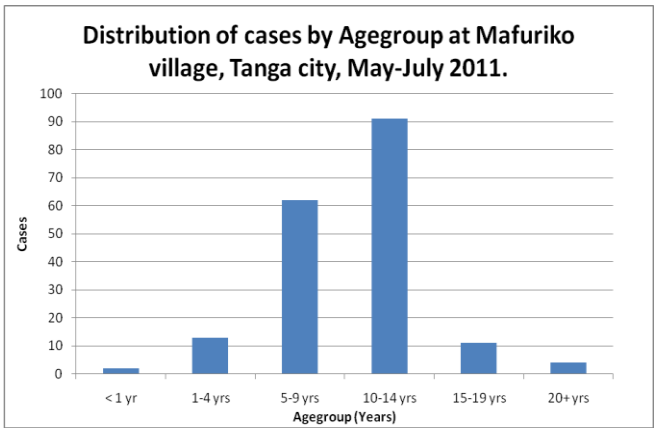
The analysis of a line list containing the 183 suspected cases of rubella showed that 51% [94] were women and 49% [89] were men. The sex distribution of suspected rubella cases is shown below:

Figure 3



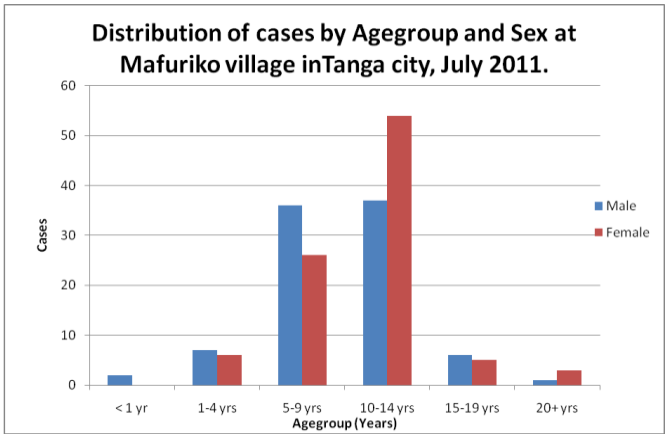
The age of suspected cases ranged from 4 months to 50 years. About 50% [91] of the affected cases were aged between 10 and 14 years; there were few cases below 1 and above 20 years of age. The age distribution of cases is shown below:

Figure 4



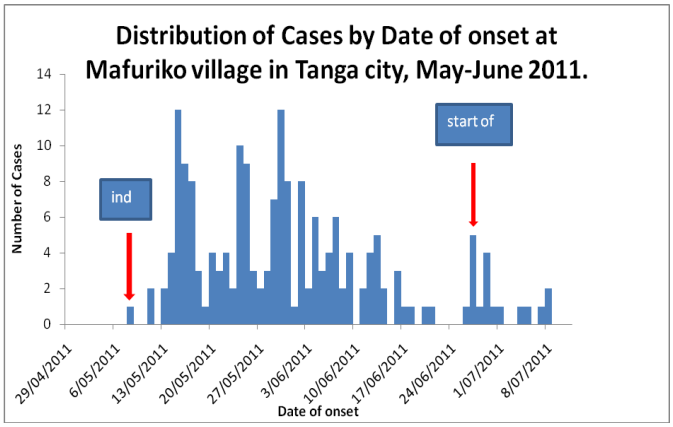
The line-list result showed that females were affected than men and the most affected age group was between 10 and 14 years. Analysis of the age group by sex revealed that more females 59% [54/91] than males were infected. In the age group above 20 years, 75% were female. Males were noted to be highly affected in the age group of 5-9 years. Age group and sex distribution of cases is shown below:

Figure 5



The epidemic curve indicates that outbreak had propagated epidemic pattern with infection being transmitted from person to person. Five epidemic peak periods are shown by the epidemic curve, the first occurring between 13th and 20th May, 2011. The second peak occurred between 21st and 27th May, 2011; the third epidemic peak occurred in 29 -1 June, 2011. The fourth epidemic peak occurred between 4th and ending on 25th and the last peak in late June, 2011 and incubation period is estimated to be between 1 and 2 weeks (Fig6). Distribution of cases by date of onset (epidemic curve) is shown below:

Figure 6



Laboratory Findings

A total number of 9 sera specimens were taken to Muhimbili Virology Reference Laboratory for detection of specific IgM antibodies of Measles/Rubella. The Laboratory findings revealed that all nine (9) samples test Negative for Measles. Out of nine (9), four samples tested Positive for Rubella IgM antibody by ELISA, 4 tested Negative and 1 sample had equivocal results.

. **Background on Rubella**

- Rubella is one of the most contagious viral diseases caused by *Rubella virus*, in a family of *Togoviridae* the genus *Rubivirus*[1]The virus lives in the mucus of the nose and throat of the infected person.
- Rubella is highly communicable with an incubation period of 14 days (a range of 14-21 days). It is transmitted by contact with nasopharyngeal secretions of the infected person, droplets spread through coughing and sneezing, and direct contact with rubella patient.
- The disease is clinically characterized by high fever (39^0C), reddish eyes (conjunctivitis), generalized body rashes, coughing, sore throat and runny nose – symptoms that are similar to measles. The infected person is infectious one week before and four days after the onset of rashes.
- About 50% of Rubella infections are sub clinical; however, congenital rubella syndrome (CRS) occurs in up to 90% of infants born to women who were infected with rubella during the first trimester (16 weeks of gestation and rarely above 20 weeks of gestation). The disease has been associated with uterine death, spontaneous abortion and malformation to the foetus [2].
- Globally, reported Rubella cases have decreased by 82% from 670,894 in 2000 to 121,344 in 2009. However, from the same period the reported Rubella cases in WHO/AFRO increased 20 fold from 865 to 17,388 and in Asia WHO/SEAR they increased 14 times from 1,165 to 17,208 cases [3].
- Globally, a total of 165 CRS cases were reported in 2009 as compared to 157 in 2000. European states reported 127 CRS cases, 45 in Romania, 28 in Russian and 17 from France.

Background information on affected area

- Tanga city is among the eight district which constitute Tanga region, is situated at latitude 4^0 and 6^0 South and longitude 37^0 and 39^0 10 East.
- The district cover an area of 600 square KM in the East Coast of Tanzania with a total population of 305,713 of which 35,152 are under 5 years and 7762 are infants < 1 year (Census projection 2011). It is bordered by Kilindi to the East, Muheza to the South and Korogwe to the West.
- Administratively the district has four divisions and 24 wards; Mafuriko village is among the two villages of Mzizima ward located about 7 kilometers from Tanga city centre. It has a total population of 11,624 according to 2011 population projection (from 2000 Census), infants are 306 and 1524 are children under 5 years of age.
- Mafuriko is a high density village located in a low land of Indian Ocean and its residents are engaged in fishing and other types of informal employment.

Case Control Findings

A total number of 36 cases and 36 controls were interviewed in this case control study, demographic and risk factors data were collected and analysed in univariate and bivariate analysis. The mean age of cases were 9.5 years (4.2 yrs std. Dev) the median age was 10 years (range 0-15 years), for the controls the mean age was 9.5 years (4.2 yrs std Dev) while the median age 11 years (range 0-16 years).

Table1. Demographic data of Cases and Controls N=72

Characteristics	**Case (N=36)**	**(%)**	**Control (N=36)**	**(%)**
Place				
Mafuriko	25	69	25	69
Kongwa	10	28	10	28
Mtakuja	1	3	1	3
Gender				
Male	20	56	20	56
Female	16	44	16	44
Age group in yrs				
0-4	6	17	6	17
5-9	9	25	9	25
10-14	19	53	19	53
15-19	2	6	2	6
20+	-	-	-	-
Education level				
N/A	6	17	7	19
Primary	28	78	29	81
Secondary	2	6	0	0

Mafuriko hamlet had highest proportion (69%) of cases reported in this outbreak and mostly cases were in age group between 10 and 14 years old. Fifty percent 50% of cases reported to be infected while they were at school and probably transmitted the diseases to their homes/neighbourhoods. Many cases experienced the symptoms of rashes, fever and cough as shown by Table 2.

Table2. Age group by Sex of Cases (N= 36)

Age group(Yrs)	**Sex**			
	Male (N)	**%**	**Female (N)**	**%**
0-4	5	25	1	6
5-9	4	20	5	31
10-14	10	50	9	57
15-19	1	5	1	6
20+	0	0	0	0
Total	**20**	**100**	**16**	**100**

Table3. Symptoms experienced during Outbreak, Cases (N=36)

Number	Symptoms	N	%
1	Fever	29	80.6
2	Conjunctivitis	11	30.6
3	Cough	14	38.9
4	Runny nose	13	36.1
5	Rashes	36	100

To ascertain risk factors of the outbreak, five exposures were associated with the outbreak during bivariable analysis. These factors included vaccination status, number of dose (s) received, contact with rubella patient, nutrition status and overcrowding in sleeping room. Nutritional status was excluded in the analysis as most cases aged above five years.

During bivariate analysis it was observed that both the vaccination status of measles (OR=0.99, 95% CI= 0.35 – 2.77; P=0.98) and dose received by individuals (OR=0.90, 95% CI= 0.30 – 2.60; P=0.79) were not significantly associated with this rubella outbreak. On other hand sharing a sleeping room with an infected person (OR=3.7; 95% CI= 1.29 – 10.63; P=0.012) and contact with infected person (OR= 6.40; 95% CI= 1.87 – 21.89; P=0.0016) were significantly associated with becoming ill as shown by risk factor analysis (Table4) below.

Table4. Risk Factors Analysis

Variable	Cases N (Col %)	Control N (Col %)	OR (95% CI)	P-value
Vaccination status				
- Not vaccinated	8 (22.2)	11 (22.5)		
- Vaccinated	28 (77.8)	38 (77.5)	0.99 (0.35 – 2.77)	0.98
Doses received				
- 1 dose	18 (64.3)	26 (68.4)		
- 2 doses	10 (35.7)	12 (31.6)	0.90 (0.30 – 2.61)	0.79
Contact with affected person				
- Yes				
- No	31(88.6)	25 (51.0)		
	5 (11.4)	24 (49.0)	6.4 (1.89 – 21.89)	0.0016
Sleeping persons per room				
- >2 persons				
- <2 person	29 (80.6)	27 (55.1)		
	7 (19.4)	22 (44.9)	3.7 (1.29 – 10.6)	0.012

OR= Odds Ratio

CI=Confidence Interval at 95%

Table5: Attack Rates of the Outbreak

	Place	Total Population	Number of Cases	Attack Rate /1000
Attack rate of suspected rubella outbreak in general populations	Tanga City	305,713	183	0.6
	Mafuriko Village	11,624	183	15.7
Attack rate of suspected rubella in specific age population (< 5 population)	Tanga City	35,152	15	0.4
	Mafuriko Village	1524	15	9.8
Attack rate of suspected rubella in specific age population (> 5 population)	Tanga City	270,561	168	0.6
	Mafuriko Village	10,100	168	16.6

The attack ratio (16.6 per 1000 / 9.8 per 1000) of the disease in population above 5 years in Mafuriko was 1.7 higher compared to the population of children less than 5 years of age.

Discussion

Rubella is a mild illness, of high public health importance as it may result in congenital rubella syndrome. Rubella virus is circulating in Tanzanian communities, while rubella vaccine has not yet been integrated in Expanded Programme on Immunization (EPI) strategy. This study shows that the infection was highest in the school aged children in the age groups of 5 to 9 and 10 to 14 years respectively. This could be attributed to close contact and gatherings in school settings. Female were found largely to be affected compared to males.

Results from bivariate analysis showed that there was no statistically significant difference in rubella susceptibility among those vaccinated and not vaccinated for measles (p= 0.98) and number of measles doses received by an individual (p= 0.79). This was due to the fact that rubella combined vaccine recently is not on routine childhood immunization strategy in the country.

This study findings show that crowded living conditions were important risk factor and significantly associated with the outbreak (p= 0.012) This showed that rubella transmission can occur wherever susceptible children and adults congregate particularly in unvaccinated population. Spread of the outbreak among this community was facilitated by contact with suspected cases and overcrowding in living conditions. Similar results have been reported by others [6]. Attack rate from this outbreak was higher in a population aged above five years compared to under five years, as could be attributed by congregation in school and other gatherings such as games after school sessions. Mafuriko was noted by higher attack rate as the outbreak was only localized in this area of Tanga city.

Rubella vaccine is not widely used in EPI in many developing countries because it requires sustained high coverage and otherwise can paramount susceptibility among populations. Vaccination is the only key element to prevent rubella outbreaks and occurrence of congenital rubella syndrome. This is feasible when incorporated in the measles elimination strategy by using combined measles-rubella vaccine in routine childhood immunization programme (current coverage for measles vaccine in Tanzania is 85%). Furthermore, formal rubella and congenital rubella syndrome surveillance needs to be implemented in our health delivery settings.

Conclusion

The suspected outbreak was confirmed to be Rubella by ELISA. The rubella outbreak is uncommon in Tanzania, transmission was facilitated by overcrowding in living environment and contact with suspected cases. Occurrence of this rubella outbreak shed light for other suspected outbreaks of measles to be tested, and calls for introduction of combined measles - rubella vaccine on routine immunization activities. There is also need for formal rubella and congenital rubella syndrome surveillance to prevent further outbreaks.

References:

1. Communicable Diseases Short Hand Book pg 264 – 269
2. WHO Europe. Strategic plan for measles and CRS Infections in European region WHO. Also available at www. who.int/document/e81567 pdf
3. P. Strebel, A. Dabbagh, M.Gacic, SE. Reef and S. Cochi (2010). Progress Towards Control of Rubella and Prevention of CRS-worldwide Morbidity & Mortality Weekly Report. 59(40):1307-1310
4. A Rafila, M Marin, A Pistol, D Nicolaiciuc, E Lupulescu, A Uzicanin, S Reef. Large Rubella Outbreak in Romania (2004). Eurosurveillance, Volume 9, Issue 4
5. SM Friedman, S Schultz, A Goodman, S Millian and LZ Cooper (1983). Rubella Outbreak Among Officer Workers in New York, MMWR 32(27); 349-52
6. Danovaro-Holliday MC, LeBaron CW, Allensworth C, Raymond R, Borden TG, Murray AB, Icenogle JP, Reef SE (2000). A large Rubella outbreak with spread from work place to community; 2 84(21):2733-9
7. Craig Corcoran, Diana R. Hardie (2005). Seroprevalence of Rubella Antibodies among patients in Western Cap. South Africa Medical Journal 95:688-690
8. National Bureau of Statistics (2010). Tanzania Demographic and Health Survey, pg 145-149

1.2 Dengue Fever outbreak investigation, Mandera East District, Kenya, 2011

Mark Odhiambo Obonyo, Victor Ofula, Ahmed Fidhow, Shikanga O-Tipo

Background

On 21st September 2011 District Disease Surveillance Coordinator (DDSC) of Mandera East district reported to the Division of Disease Surveillance and Response of the Kenya Ministry of Public Health and Sanitation of patients presenting to the hospital with high fever, severe joint pain and muscle pains with some of them bleeding from the nose and gums. Most of the patients turned negative for malaria, though the clinicians symptomatically treated the patients for malaria with no improvement.

The DDSC collected 11 samples and sent them to Viral Hemorrhagic Fever (VHF) laboratory at Kenya Medical Research Institute (KEMRI) Nairobi to rule out arboviruses and other hemorrhagic fevers. Six of the samples turned positive for Dengue fever virus (Dengue fever virus 3) on PCR.

Background on Dengue Fever

- Dengue fever is an arbovirus transmitted by aedes mosquitoes (both Ae. Aegypti and Ae. Albopiticus). Dengue is caused by four serologically distinct, but closely related viruses: dengue virus (DENV) 1, 2, 3, and 4 of the Flaviviridae family.
- Dengue fever is an emerging pandemic that has spread globally during the past 30 years as a result of changes in human ecology. Dengue is found in tropical and sub-tropical regions around the world, predominately in urban and semi-urban areas. During dengue epidemics, infection rates among those who have not been previously exposed to the virus are often 40% to 50%, but can reach 80% to 90%.
- Dengue fever is a severe, influenza-like illness that affects infants, young children and adults, but seldom causes death. Dengue haemorrhagic fever (DHF) is a potentially deadly complication that has become a leading cause of hospitalization and death among children in Asia. There is good evidence that sequential infection with the different serotypes of dengue virus increases the risk of more severe disease that can result in shock syndrome (DSS) and death.
- Epidemic dengue activity in Africa has mostly been classical dengue fever caused by DENV-1 and DENV-2 without associated mortality. The first major outbreak of DENV-3 in Africa was documented in Mozambique in 1984-1985. During this outbreak, most patients experienced secondary infections and 2 deaths were attributed to DHF and shock. In 2008, yellow fever and DENV-3 were found to be co-circulating in Abidjan, Cote d'Ivoire, however, no severe dengue cases or deaths attributable to dengue were identified.
- There is no specific treatment for dengue, but appropriate medical care frequently saves the lives of patients with dengue haemorrhagic fever.
- Infected humans are the main carriers and multipliers of the virus, serving a source of the virus for uninfected *Aedes aegypti* mosquitoes which maintain the urban dengue transmission cycle. The virus circulates in the blood of infected human for 2-7 days, at approximately the same time that they have a fever. A sylvatic transmission cycle has been documented in West Africa where DENV-2 has been found in monkeys. There is no evidence of person-to-person transmission.
- At present, the only method of controlling or preventing dengue virus transmission is to combat the vector mosquitoes using environmental management and chemical methods.

On September 26th, 2011, the FELTP residents departed from Nairobi to Mandera East district to conduct an Outbreak investigation. The objectives of the investigation were as follows:

- Determine the magnitude of the outbreak and describe the outbreak in terms of place, time and person.
- To identify the possible factors associated with the outbreak.
- Collect more samples from febrile persons meeting the working case definition for further laboratory tests.
- Give recommendations.

Standard case definitions

Dengue Fever Suspected case: Any person with acute febrile illness of 2-7 days duration with 2 or more of the following: headache, retro-orbital pain, myalgia, arthralgia, rash, haemorrhagic manifestations, leucopenia.

Dengue Fever Confirmed case: A suspected case with laboratory confirmation (positive IgM antibody, rise in IgG antibody titres, positive PCR or viral isolation).

Dengue Haemorrhagic Fever : A probable or confirmed case of dengue with bleeding tendencies as evidenced by one or more of the following: positive tourniquet test; petechieae, ecchymoses or purpura; bleeding: mucosa, gastrointestinal tract, injection sites or other; haematemesis or melaena; and thrombocytopenia (100 000 cells or less per mm3) and evidence of plasma leakage due to increased vascular permeability, manifested by one or more of the following: 20% rise in average haematocrit for age and sex, 20% drop in haematocrit following volume replacement therapy compared to baseline, signs of plasma leakage (pleural effusion, ascites, hypo-proteinaemia).

Dengue Shock Syndrome: All the above criteria, plus evidence of circulatory failure manifested by rapid and weak pulse, and narrow pulse pressure (≤ 20 mm Hg) or hypotension for age, cold, clammy skin and altered mental status.

Response to alert and action thresholds

If a single case is suspected:

- Report case-based information immediately to the next level.
- Conduct active search for additional cases
- Collect specimens for confirming the cases.

If a single case is confirmed:

- Report case-based information immediately to the next level.
- Conduct active search for additional cases
- Collect specimens for confirming the cases
- Survey the community to determine the abundance of vector mosquitoes, identify the most productive larval habitats, promote and implement plans for their elimination, management or treatment with appropriate larvicides.
- Educate the public and promote behaviours to remove, destroy or manage mosquito vector larval habitats.
- Manage and provide supportive treatment to dengue fever cases. Implement standard infection control precautions. Prevent access of mosquitoes to patients by using mosquito bed nets.

Materials and Methodology

Site

Mandera lies at the tip of Kenya, bordering Somalia on the east and Ethiopia on the north with a seasonal river called river Daua separating Kenya and Ethiopia. The district is largely arid land and indigenous population mainly persons of Somali origin. The population of Mandera East district is estimated at 130,000 persons with about 80,000 persons found in Mandera town. Due to porosity of the border, there is free movement of people between Shuftu (Ethiopia), Bulla Hawa (Somalia) and Mandera town.

Study design

We reviewed records to update the line list that was collected by the District Health Management Team (DMHT) from both public and private health facilities in Mandera town. The line list was collected using the standard IDSR health facility line listing form MOH 503 from 1st August to 3rd October 2011. The criteria of line listing as agreed by DHMT was all persons presenting to the health facilities in Mandera town

with any acute febrile illness whose cause is confirmed or not during the defined period.

We reviewed laboratory data of Mandera District Hospital on clinical and confirmed malaria cases from January 2009 to September 2011 to determine trends of clinical and confirmed malaria cases. This was to aid in determining when the outbreak began.

We collected samples and administered questionnaire to active cases who met the working case definition (Any person presenting with acute fever lasting 3-7 days, together with any of the following clinical findings: severe headache, muscle pain, joint pain and hemorrhages, residing in Mandera town between August to October 2011).

Information collected included: Identifying information, demographic information, clinical information, laboratory information and risk factors information. The serum samples were transported in a dry shipper to Arboviruses reference laboratory at KEMRI for further analysis.

We conducted a verbal autopsy from relatives of four persons suspected to have died of DF in the presence of the District Public Health Nurse.

Data management

We entered the data from questionnaire, cleaned and analyzed using EPI info version 3.5.3 and the rest of the data using Ms Excel 2007. We calculated proportions for categorical variables and means and medians for continuous variables.

Case definitions

Working case definition: Any person presenting with acute fever lasting 3-7 days, together with any of the following clinical findings: severe headache, muscle pain, joint pain and hemorrhages, residing in Mandera town between August to October 2011.

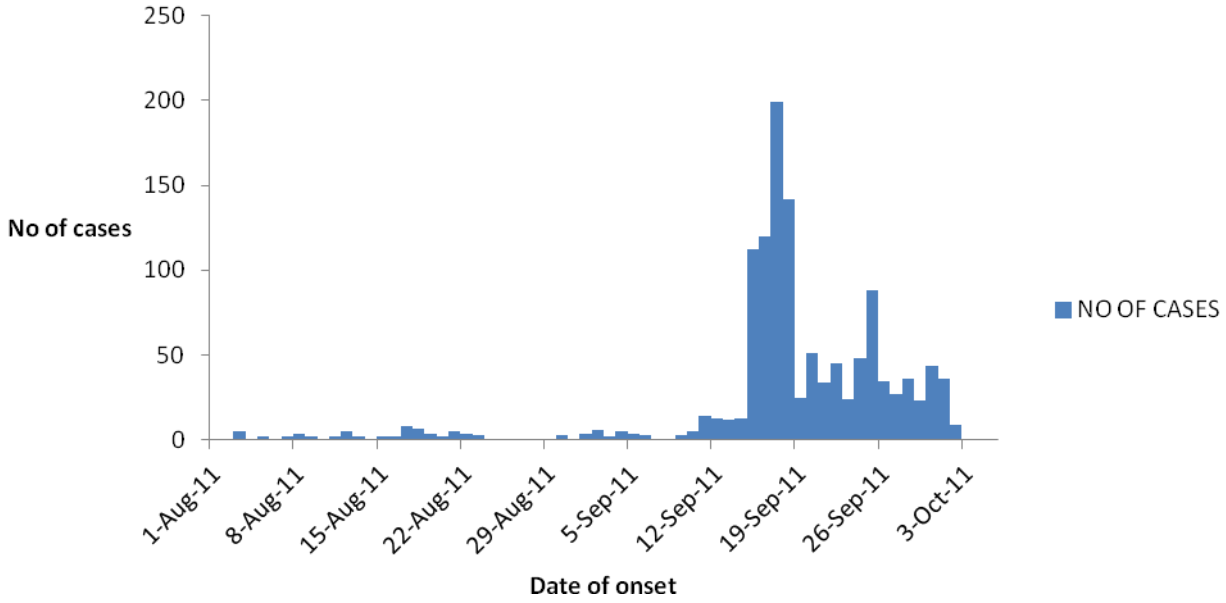
Results

Record review of line listing from health facilities

A total of 1,289 cases were line listed as from 1st August to 3rd October 2011. The median age of 1,088 (84%) persons whose ages were recorded was 18 years (range: 2 months to 100 years). Majority (29%) of the cases were aged 15-24 years**.** Males contributed 56% of all cases line listed. Of the 32 samples that were collected, 8 (25%) tested positive for Dengue virus by IgM ELISA. Out of the total number of cases line listed, 677(53%) persons had information on health facility they visited. Mandera District Hospital, the only public health facility in Mandera town, was visited by 149 (22%) patients.

Information on village of residence was available in 1,151(89%) of the cases line listed. The villages with highest number of cases were Bulla Mpya; n=173(15%), Bulla Jamhuria; n=167(15%), Bulla Power; n=143(12%) and Bulla Nguvu; n= 128(11%). Eight cases were reported to come from Ethiopia and five cases from Somalia. From the cases line listed, 1,255 (97%) persons had information on date of onset of disease. The number of cases started increasing as from 12th September 2011 peaking on 15th September 2011. Thereafter, the number of cases started declining (Figure 1).

FIGURE 1: EPICURVE OF DENGUE FEVER OUTBREAK, MANDERA EAST DISTRICT 2011



We administered a total of 33 questionnaires to persons meeting the working case definition. The questionnaire were administered at Mandera district Hospital, Super drug Medical centre, Al- Siha Nursing Home, Blue light Nursing Home, Medicare Annex Nursing Home and Jamhuri Nursing Home. Male contributed 22 (67%) of the total interviewed. The median age was 28 (range: 8 to 70). Majority of the cases were in age group 11-20 (n=11; 33%). The villages with highest number of cases interviewed were Bulla Mpya 10 (30%), Bulla Jamhuria 7(21%) and Bulla Township 5(15%). A total of 29(88%) knew of a disease outbreak in Mandera, 15(46%) got this information from Star FM, a local vernacular radio station. A total of 24(73%) had heard or seen someone else with similar clinical presentation as themselves in the recent past, of which 13(53%) were from the same house hold. Of those interviewed, 21 (64%) did not know how the disease is transmitted. Majority of those interviewed 32(97%) stated that they had noticed an increase in the mosquito population in the recent past. Of those people who sleep during the day, 20 (61%) sleep in the house and of the 23 (70%) who use nets, only 2 (9%) use nets during the day while sleeping. The under water tanks accounted for 55% (n= 18) of the mode of water storage by the respondents. Over half of those interviewed 17(52%) stated that they had bushes around their houses and 15 (88%) stated that the bushes were less than 50M from their houses.

Verbal Autopsy

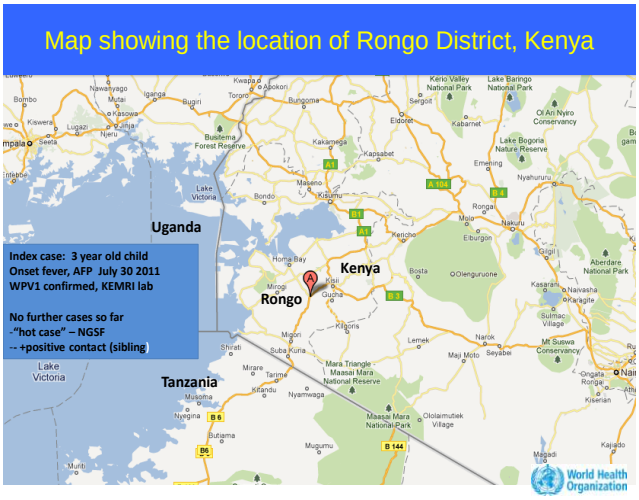
From the analysis of the history surrounding the deaths of the four persons whose proxies were interviewed, we were not able to conclude whether the deaths were as a result of Dengue Virus or not. There was a female aged 18 years from Bull Mpya who had sudden death (1 hour from the time of first complain) with history of fever and severe headache; a male prisoner 42 years old who had a history of fever and gastroenteritis and died 7 days after onset of illness. Hospital records indicated cause of death to be Peptic Ulcers Disease. There was an elder man of 60 years old with history of hypertension and Diabetes. The last person was an adult male with a history of chronic hypertension with no indication of fever and headache prior to death. We were unable to trace any relatives of the fifth person who died.

The Ministry of Health has planned indoor residual spraying, larviciding, fogging, clean up of the environment and continuing education as part of the measures taken to control the outbreak.

1.3 Polio outbreak in Rongo District, Kenya, 2011

Shikanga O-tipo, Maurice Ope and David Mutonga

In July 2011, a 3 year old child presented to Kamagambo SDA dispensary, Rongo District in Western Kenya with sudden onset of paralysis of the lower limb since 30th July 2011. Stool specimens were taken and transported to Kenya Medical Research Institute (KEMRI) Polio laboratory which subsequently confirmed Wild Polio Virus (WPV) type 1 on 25th August 2011. The virus genetically closely resembled the virus detected in Bugiri district, Uganda in September-November, 2010. Although no further cases were reported following this case, one contact (a sibling) was positive for WPV.



In response to the outbreak, the Kenya Ministry of Public Health and Sanitation together with partners initiated a number of interventions to strengthen surveillance and immunization activities. These included stepping up surveillance and ensuring all health workers are well sensitized and on high alert. In this regard all districts were asked to achieve a non-polio AFP case detection rate of at least 4 cases per 100,000 population below 15 years.

To further strengthen prevention and control efforts, the Ministry together with partners did a rapid risk analysis and identified 129 districts in the country to be at high risk of Polio transmission. Thirty two districts in Nyanza (31) and Rift valley (1) provinces were identified for immediate response vaccination campaigns. Several rounds of vaccination campaigns was conducted, the first round was conducted and targeted these 32 districts. Similarly, the second round was conducted from 22nd to 26th October 2011 and targeted the 32 districts. The third Round is scheduled for 12th to 16th November 2011 and is targeting 129 districts. The 129 districts include all the districts in Nyanza, Western, Nairobi, and North Eastern Provinces and selected districts in Coast (all districts in Kilifi, Kwale, Lamu, Mombasa, and Tana river counties), Eastern (Marsabit, Moyale counties), and Rift valley provinces (Baringo, Kericho, Nandi, Laikipia, Nakuru, Narok, Samburu, Trans-Nzoia, Turkana, West-Pokot counties). The fourth round is scheduled from 3rd to 7th of December in the 129 districts. The exercise targets all children below five years and will use house to house strategy. During the campaign health workers will move from house to house and vaccinate all eligible children, mark the vaccinated child finger, mark the house and search for any AFP cases.

Background on poliomyelitis (Acute Flaccid Paralysis)

- Poliovirus (genus Enterovirus) serotypes 1, 2, and 3 are transmitted from person-to-person via faecal-oral spread.
- Incubation period is 7 to 14 days for paralytic cases and the range is approximately 3 to 35 days. The virus may be shed for several years by immuno-compromised persons.
- Infection is usually asymptomatic, but may cause a febrile syndrome with or without meningitis. In less than 5% of infections paralysis results, often of a single leg.
- Polio infection occurs almost exclusively among children. Infection may occur with any of 3 serotypes of Poliovirus. Immunity is serotype-specific and lifelong.
- Paralytic polio, though not fatal, has devastating social and economic consequences among affected individuals.
- The Polio Eradication Program has nearly halted ongoing wild-type polio transmission worldwide through use of oral poliovirus (OPV) vaccine. Globally, poliovirus type 2 appears to have been eliminated. Serotypes 1 and 3 polioviruses still circulate in several African countries and surveillance is not yet adequate to assure eradication in many countries.
- Areas with low vaccine coverage may allow ongoing wild-type transmission.
- Other neurological illnesses may cause AFP, for example, Guillain-Barré syndrome and transverse myelitis.

Standard case definitions

Suspected case of poliomyelitis:

Any child under 15 years of age with acute flaccid paralysis or any person with paralytic illness at any age in whom the clinician suspects poliomyelitis.

Confirmed case of poliomyelitis: A suspected case with virus isolation in stool.

Response to alert and action thresholds

If a single case is suspected:

- Report the suspected case immediately according to the national polio eradication program guidelines.
- Conduct a case-based investigation. Include a vaccination history for the patient.
- Collect two stool specimens. Collect the first one when the case is investigated. Collect the second one from the same patient 24 to 48 hours later. See laboratory guidelines for information on how to prepare, store and transport the specimen.
- Obtain virological data from reference laboratory to confirm wild-type poliomyelitis or VAPP.

If a single case is confirmed:

- If wild polio virus is isolated from stool specimen, refer to national polio eradication program guidelines for recommended response actions. The national level will decide which actions to take. They may include the following:
  - Specify reasons for non-vaccination of each unvaccinated case and address the identified deficiencies.
  - Immediately conduct "mopping-up" vaccination campaign around the vicinity of the case.
  - Conduct surveys to identify areas of low OPV coverage during routine EPI activities, and improve routine vaccine coverage of OPV and other EPI antigens.
- Lead supplemental vaccination campaigns during National Immunization Days (NIDs) or Sub-National Immunization Days (SNIDs). Focus supplemental vaccination activities in areas of low vaccine coverage during EPI. Consider use of house-to-house vaccination teams in selected areas.

2. Active Disease Surveillance System for Mountain Gorillas and Conservation Staff at the Volcanoes National Park, Rwanda

JF Kinani

Introduction

Mountain Gorillas are found only in two places in the world and one of the locations is the Virunga Massif comprising the Volcanoes National Park of Rwanda, Virunga National Park of the Democratic Republic of Congo, and the Mgahinga National Park of Uganda. .The population of critically endangered mountain gorillas living in Virunga Massif has grown by 26.3% to approximately 480 individuals in the past seven years (Mountain Gorilla Census, 2010). Most habituated Gorillas live close to park boundaries and interact with park employees, host communities and domestic animals that move in and out of the parks.

Mountain Gorilla doctor taking samples from baby Gorilla

Studies have shown that people, cattle, and mountain gorillas can be infected by common intestinal pathogens, e.g., *Giardia Lamblia,* viruses. Viral screening performed on samples collected from wild Gorillas also reveals a range of antibody titers to select human pathogens, such as hepatitis and influenza. Indeed humans and gorillas have about 97% of their genetic make-up in common. The implication is that there is increased risk of disease transmission from humans to gorilla and vice versa. These underscore the importance of a "one-health" initiative.

Conservation personnel in Volcanoes National Park

Methods

We used a standardized data collection system known as IMPACT. IMPACT is a web-based syndromic health monitoring system designed to help identify a health problem. The system uses a "Clinical Decision Tree" model to assess the level of risk based on the number of animals affected. If the risk is low with few animals affected, as in the case of scabies mite mange; veterinary personnel respond appropriately. If the risk is high with many animals sick, as in the case of measles or TB, the model recommends a coordinated action plan that calls for outside technical and logistical support; this action plan is known as the Contingency Plan.

Results

Data generated through IMPACT in 2009 revealed an outbreak of a respiratory infection in the *Hirwa* group of Gorillas. Eleven of the twelve gorillas presented with moderate to severe respiratory infection and two died (CFR 17%). Multiplex polymerase chain reaction (PCR) analysis for the presence of respiratory pathogens revealed *Human Metapneumovirus* (HMPV) in serum, lung tissue, and throat, nose, anus and vagina swabs.

A total of 440 park personnel and their families participated in the Conservation Personnel Health Program. Fifty five percent (55%) of the park workers reported defecating in the park. Laboratory examination revealed varying levels of different parasite among those enrolled in the program; the common organisms detected included *Ascaris lumbricoides*, *Entamoeba coli* (21%), *Entamoeba histolitica* (7%), *Giardia lamblia (*15 %), T*richomonasintestinalis* (12%), and Trichuris *trichuria* (3%).

Conclusion

The Joint surveillance of gorilla and human diseases is important in reducing the risk of zoonotic disease transmission between employees and the park's mountain gorillas. It also helps Gorilla doctors understand the incidence of possible transmissible diseases that could threaten the health of the endangered mountain gorillas and therefore promotes conservation efforts and the "one- health" initiative.

3. Technical Working Group on Medicines and Food Safety in the East African Region

Harrison Nganga and Jane Mashingia

The 18th EAC meeting of the full council of Ministers approved the establishment and operationalization of the Medicines and Food Safety Unit under existing EAC Organizational structure (EAC/CM18/Decision 91). The main purpose of the unit is to facilitate the development and implementation of EAC regional policies, strategies and programs to enhance access to safe, effective and affordable medicines as well as ensure safety of food in the region.

The EAC Secretariat (Heath Department) in collaboration with the Tanzania Ministry of Health and Social Welfare (MHSW) and the Tanzania Food and Drugs Authority (TFDA) organized a regional workshop to develop draft harmonized EAC regional Pharmaceutical Policy and Food safety and Quality Policy. The workshop was attended by experts from Partner States including Chief Pharmacist from Ministries of Health, Heads of National Medicines Regulatory Authorities (NMRAs), Heads of Pharmaceutical Procurement Agencies, Nutritionist, Food Technologist and EAC Secretariat Technical Staff.

Objectives of the workshop

The main objective of the workshop was to develop EAC draft policies on Pharmaceuticals and Food Safety and Quality. The workshop was held as part of the initial consultation process with EAC Partner States towards development of the common regional policies to enhance access to safe, effective, affordable Medicines for treatment of communicable and non-communicable diseases of public health importance and ensure food safety to the people of the region as provided in Article 118 of the Treaty for establishment of the East African Community.

Specific objectives of the workshop included:

- develop draft EAC Regional Pharmaceutical Policy
- develop draft EAC Regional Policy on Food Safety and Quality

- review the 4th draft of the protocol for establishment of the EAC Medicines and Food Safety Commission(EACMFSC)

Workshop Proceedings

The workshop was held at Blue Pearl Hotel, Ubungo Plaza in Dar es Salaam, Tanzania from 13th to 17th June 2011. Presentations on pharmaceutical policies from each partner state were made highlighting the main components of the different policies. It was noted that in Burundi the national laboratory will start to analyze medicines for the purpose of quality control as from July 2011. The workshop was informed that the Kenya National Pharmaceutical Policy was in line with the country's vision 2030 which addresses Millennium Development Goals (MDG 8, Target 17). The policy addresses aspects of administration, supply chain, human and financial resources. However, there is no clear and sustainable implementation strategy in the national health agenda.

In Rwanda the workshop noted that the components of the policy includes pharmaceutical sector organization and management, legal and regulatory framework, financing, resource mobilization and pricing, procurement, distribution, appropriate use of medicines, human resource development, traditional medicines, emergency responses, monitoring and evaluation. The country is in the process of establishing Rwanda Food and Medicines Authority for effective implementation of the Policy.

Tanzania has a National Medicines Policy which was developed in 2001. The Policy facilitated establishment of the National Medicines Procurement Agency (MSD) in 1993 and Tanzania Food and Drugs Authority in 2003. The policy was reviewed to take into account new emerging issues such as research and development, inter-sectoral collaboration, international cooperation and other cross-cutting issues. The revised Policy has been submitted to the Inter-Ministerial Technical Committee for review.

Uganda National Drug Policy is a dynamic document which aims to attain good health through access of safe and effective medicines. The Policy focuses on legislation, regulation, selection, herbal medicines, research, technical cooperation and rational use of medicines.

Technical Working Group members also reviewed the terms of reference for the consultant to carry out a baseline survey of the local Pharmaceutical Manufacturing capacity for Human, Veterinary and Medical Supplies within the East African Community Partner States. The activity is being supported by GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) and the main objectives is to carry out a comprehensive analysis of the local Pharmaceutical manufacturing industry in the five (5) EAC Partner States focusing on capacity and capability of local production, technology and production processes, standards and quality infrastructure, ownership structure, level of investment and financing mechanisms.

In terms of Food Safety and Quality Policy, two Partner States shared with the meeting their national policies. The United Republic of Tanzania has a draft Food Safety and Quality Policy which is under review. Multisectoral stakeholder's consultations meetings are being conducted to input into the policy. The Uganda Food Safety Policy acts as a backbone to a comprehensive and effective food safety control and management systems in Uganda. Other Partner States experts were urged to prepare their presentations and share electronically before the follow up meeting.

The outcome of the five (5) day workshop was a draft EAC Regional Pharmaceutical Policy. The scope of the policy covers human and veterinary medicines, medical and veterinary supplies, biopharmaceuticals, genetically modified/engineered products and cosmetics. The policy will lay down principles that will guide each EAC Partner State in facilitating access to safe and good quality essential medicines, medical supplies, cosmetics, genetically engineered products for both human and veterinary use. The experts deferred development of draft EAC regional Policy on Food Safety and Quality due to time limitations.

The following are the recommendations of the 1st Technical Working Group Meeting Experts:

- There is need to revisit situational analysis of the Pharmaceutical sector in the EAC Partner States which should clearly identify weakness and challenges
- Development of the regional policy on pharmaceuticals should follow all necessary consultative processes, involving key multi-sectoral stakeholders and the policy should be tabled in the East Africa Legislative Assembly and the World Health Assembly.
- Develop an implementation plan (master plan) for policy implementation
- Establish a task force to develop regional guidelines for accreditation and inspection of pharmacy

training institutions and local pharmaceutical production.

- Develop a regional centre of excellence for laboratory testing of pharmaceuticals which meets WHO accreditation standards.
- There is need to develop health technology policy which covers medical equipments.
- Develop regional guidelines/policy to regulate dumping of pharmaceutical products
- There is need to have an overall body to oversee food safety issues in each EAC Partner State.
- There is need to define roles of each player in Food Chain to ensure safe food from the Farm to the Fork e.g., regulatory bodies, bureau of standards, ministry of agriculture, local government etc.
- At regional level we need a harmonized policy for food safety and quality that can guide each Partner State. TWG members propose a follow up meeting in August 2011 to develop draft policy on food safety and quality, Kampala, Uganda.
- The regional policy on food safety should have a section on mutual recognition on the control of food products.
- EAC Secretariat to facilitate establishment of the centres of excellence on Food Safety and Quality.

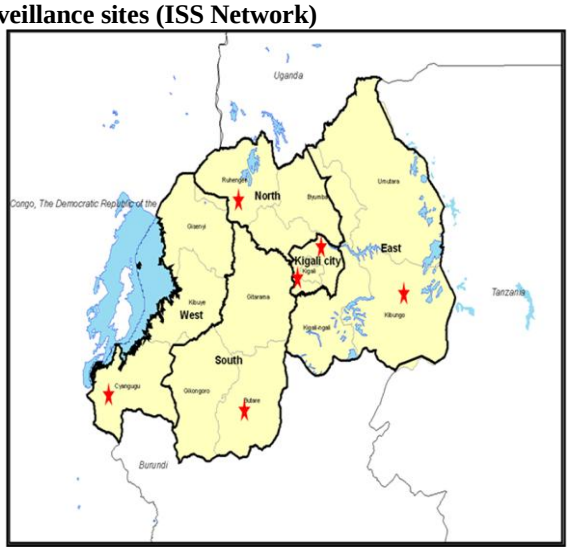
4. Influenza Surveillance in Rwanda; January to July 2011

Marie Aimee Mahimpundu

Introduction

In resource limited systems, sentinel surveillance is a good alternative to population-based surveillance for the collection and analysis of individual patient related information on influenza to determine trends and detect new strains of influenza viruses. In July 2008, the Ministry of Health of Rwanda in collaboration with CDC and WHO established an Influenza Sentinel Surveillance (ISS) system in Rwanda. The objectives of the ISS system are: to describe the epidemiology and seasonality of influenza, to monitor for the emergence of novel influenza viruses, to describe the circulating influenza types and subtypes, and to detect influenza outbreaks promptly.

Figure 1: Map of the Location of Influenza Sentinel Surveillance sites (ISS Network)



Methods

Influenza surveillance in Rwanda is a collaboration of multiple stakeholders: Institute of HIV and Diseases Prevention and Control /Epidemic Infectious Diseases Division (IHDPC/EID) which provides the program oversight, National Reference Laboratory (NRL) conducts all the influenza testing and the six (6) sentinel surveillance sites spread all over the country. The sentinel surveillance uses two standard case definitions to screen for patients likely to have influenza namely- severe acute respiratory infections (SARI) among inpatients and influenza-like-illnesses (ILI) among outpatients. If a patient fits either the SARI or ILI case definition, they are counseled and an oropharyngeal and nasopharyngeal swabs are taken for laboratory testing. A case investigation form containing the patient's demographic details and exposure history is filled and accompanies the specimen to the testing laboratory.

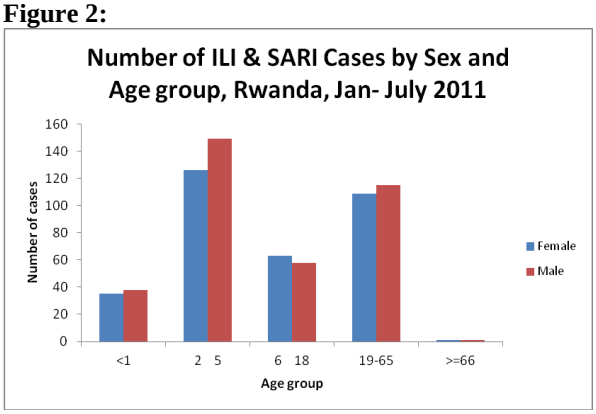
Each site has a medical doctor assigned as focal point to coordinate surveillance activities and a dedicated and full-time surveillance officer (nurse) responsible for specimen and data collection, transportation of specimen to the NRL and weekly reporting. The focal point persons perform influenza surveillance as an additional responsibility besides other clinical work without additional pay.

Results

From the beginning of January to end of July 2011, a total of 958 samples were collected from all the six sites and tested at NRL for influenza virus. Of these, 498 (52%) were males while 466 (48%) were females. The mean age of patients was

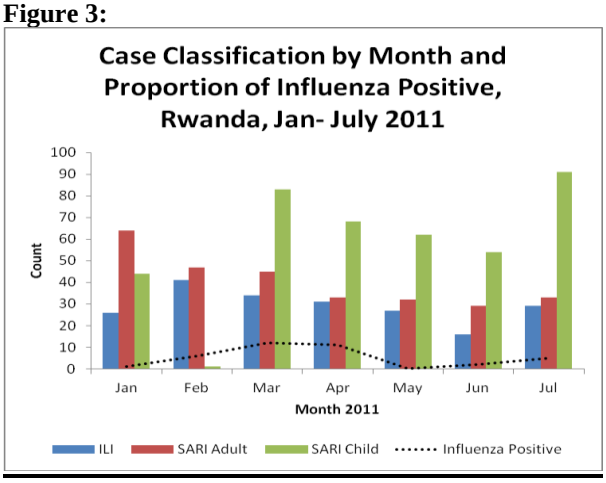
13 years (range: 0-93 years). Most patients were in the 2-5 and 19-65 age categories (fig.2).

Figure 2:



Of the 958 samples tested, 55 (6%) were positive for influenza. Of the positive ones, 91% were Influenza A (H3N2), 7% Novel H1N1, and 2% Flu B. Below is a case classification by month and proportion of Influenza positive samples.

Figure 3:



Other than cough and fever which are part of the ILI and SARI case definitions, the other common clinical symptoms reported include; difficulty in breathing, sore throat, headache and vomiting.

Conclusions & Recommendations

We concluded that Influenza A (H3N2) is the predominant strain. The positivity rate of samples is 5% and influenza activity was highest between February and May. We recommend the continuation of the program so as to be able to determine long term trends and any new strain of influenza virus that may emerge.

5. East African Public Health Laboratory Networking Project: Laboratory Management Training case study

Martin Matu

Background and problems in laboratory services

Laboratory services are an essential component of health care delivery and can be utilised effectively at every level of health care delivery, including primary health care level, particularly in tropical countries where many commonly presenting diseases may be diagnosed using basic, essential laboratory tests. Measures to improve rational use of medicines are of prime importance in improving the quality of patient care, and reducing health care expenditure and misuse of drugs. Among these measures is the establishment of stronger diagnostic systems for laboratory staff.

Appearance of many peripheral health facility laboratories in East Africa

Laboratory management in many facilities is weak and this has resulted to poor management of equipment with much of the equipment present being non-functional without disposal. Uneconomical and outdated laboratory diagnostic methods are in place with few established quality control procedures, resulting in unreliable laboratory tests. Laboratory staff particularly in remote stations lack opportunities for refresher training and have no access to reference books or guidelines, and little support supervision is provided. Some laboratories, particularly in outlying areas, are operated by personnel that have received no formal training (bench trained staff).

Health facility management often sidelines the laboratory and does not recognise diagnostic services as an integral part of quality health services delivery. Identification and training of laboratory managers in various aspects of laboratory management will improve the operations and management of medical laboratories.

The laboratory environment is rapidly changing in response to trends in healthcare. Laboratory managers who can create solutions to today's problems and effectively manage change are in high demand. A laboratory head should be good at setting the direction, as well as defining and communicating the work clearly. Country specific continuing professional development programs (CDPs) are currently being established to support continuous skills improvement for laboratory staff. Specialized training in management of laboratory services has been limited with only a few facilities offering courses in laboratory management and therefore remains largely inaccessible to many laboratory supervisors, managers and scientists who need it. The laboratory training course was developed to support the high growing demand for high quality services in resource limited environments.

Vish Krishan of University of California, commenting about laboratory management, says "*the day to day operations of your laboratory will require both a strong leader and an effective manager. Managers are good at doing things right; leaders do the right things."*

Methodology

The information was collected through various approaches; this included observation and participation in the video conferences discussing the development of training modules. During the training 17 of the 20 course participants were given questionnaires to complete. These questionnaires obtained information such as; key management issues they learnt from the course facilitators and colleagues', priority actions in their countries and facilities based on the training, share experiences of the training, support required to help them improve in their services. The interviewer also conducted face to face interviews to the participants to obtain additional information regarding their perception about whether it was useful and what they are going to implement when they return to their home countries. Further complimentary information was obtained through observation by participating in some training sessions.

Results

Development of Laboratory Management Course

The training modules were developed by the Regional Training Technical Working Group i.e. originally developed by the Secretariat (Tanzania) and shared with the TWG members and experts from other countries leveraging on regional experience. This involved regional collaboration, where government officials, experts and non-profit organizations found common ground in developing training programs for laboratory staff with ability to tackle complex intercountry differences.

Experts in a video conference to discuss the training modules

The modules were based on international standards borrowed heavily of the WHO, ASCP and CDC training in laboratory management but customized to meet the needs and address the problems in East Africa. The modules covered the basic elements in laboratory quality management, including; Quality System Essentials developed by Clinical Laboratory Standards Institute (CLSI), CDC and WHO; Laboratory System design, policy and Organization Management; Business practices in a health laboratory and Laboratory legal issues.

Conducting the training

These finalized training modules in laboratory management were used for piloting a two weeks Training of Trainers (TOT) workshop at the National Health Laboratory Quality Assurance and Training Centre (NHLQATC), Dar es Salaam from 18th -29th July 2011. The training brought together 17 participants from countries in East Africa participating in the East African Public Health Laboratory Networking Project (EAPHLNP), from Kenya (3), Rwanda (3), Tanzania (8) and Uganda (3). Different cadres of laboratory professionals with various supervisory roles in the national and satellite laboratories participated in the training including; laboratory technologists (5), staff in-charge of MDR TB culture laboratory (1), deputy laboratory managers (2), laboratory

managers (4) and laboratory scientist (2) and quality officers (3).

Participants in a training session at NHLQATC

The participants covered various topics using different approaches and teaching methodology suitable for adult learning participating in active dialogue with participants, open to change and new experiences, entering into personal relationships with learners rather than consistent adherence to the prescribed principles. The methodology involved included; didactic class room lectures, physical real life activities, case scenarios (problem solving), field trip and group discussions. The participants also took pre-test and post-tests to evaluate the training effectiveness. The mean pre-test and post test results rose from (40%) to 60% respectively. Besides learning, participants indicated that they created helpful professional networks.

Sharing experiences

Besides the didactic training provided in the training the staff had an opportunity to share experiences in their countries and facilities. Participants indicated that they learnt a lot from their colleagues in the training; some indicated that they had an opportunity to openly discuss their challenges and got ideas to solve them, learnt cross cutting experiences from different countries on laboratory practices and how to manage various issues including waste management, supplies management and quality assurance approaches. Some of the common problems highlighted were;

- Unreliable supply chain system in the countries and lack of involvement of laboratory personnel in procurement,
- Poor support in equipment maintenance and repairs by biomedical engineers and reception of donated equipment that are closed and fully automated with limited reagents supply and maintenance (spare parts),
- Inadequate funds to support the activities and improvement to ensure consistent and quality service,
- staff shortage and retention challenges
- Disposal Policy of waste was a major issue particularly expired reagents and obsolete equipment. "*It's good to learn that many of the problems that we encounter are not unique to our laboratory and country, but they are problems that also affect others in the region and the solutions lie with us" one participant commented.* Another participant was quoted saying **"***Lack of appreciation of quality laboratory services results to lack of commitment and negative attitudes of laboratory staff*".

Inspirational talk

Motivational inspiration and need for advocacy for more recognition of laboratory professions by the ECSA-HC representative, Ms Sheilla Matinhure- Manager, Human Resources for Health & Capacity Building

ECSA staff's giving an inspiration talk to course participants

"*Laboratory services are critical in health care, and laboratory staff must stand up and advocate for greater visibility and recognition*"

Carry home improvement projects

The training was successful and the participants appreciated the opportunity and promised to roll out the training in their facilities and countries. Some of the key priority areas that the participants identified to immediately address when they return to their facilities include:

- Improving documentation and record management as a way to improve quality, put laboratory policies,
- Standard operating procedures (SOPs) and protocols in place and make sure they are followed,
- implementation of continuous quality improvement though identification of improvement projects, handling occurrence in laboratory,
- Develop work plans and operational budget to support efficient running of the laboratory.
- The participants' highlighted specific areas that they required support in order to succeed in making the above mentioned improvements in the laboratories. The key issues were; enhance their skills more in Laboratory assessment techniques, Safety management and risk assessment, understand more on Laboratory legal and ethical issues, support supervision, mentoring and coaching as well as involvement of Laboratory managers in strategic planning. There was a call by the participants of the need of an avenue/website for sharing knowledge and information emanating from these activities.

> One participant said *"When I get back to the laboratory, I will give priority to training my fellow colleagues on laboratory safety as it is a critical and important area in laboratory management."*

Weaknesses

A few weaknesses were noted in the program execution. Although the development of the modules followed a regional approach with contribution from other countries, the training did not involve regional facilitators, the trainers of this course were mainly from Tanzania. The participants did not develop plans of action plans for what and how they will implement the skills obtained in the course and roll out the training. The mentors did not provide a follow up plan for participants to ensure the implementation of improvements in the laboratories when they go back to their facilities.

Addressing the weaknesses in the training course

- There is needed to get regional facilitators with the expertise in specific areas to train in various courses. Database of trainers will support this effort and trainers should be vetted to ensure they are the right trainers.
- Develop generic plan of action to ensure measurable results are obtained in the implementation of improvement and rolling out training in the countries.
- Generic follow up plans should be developed to ensure skills are not lost

Best practices identified during the training

- Regional approach in development of training courses
- Bringing laboratory with different levels of training in a common training and different countries and allowed to share experiences and identify ways to address common problem that face them
- Using adult learning approach i.e. use of role plays, problem solving case scenarios, group discussions in training medical laboratory staff
- Follow up of participants is suggested as a good way to ensure skills are utilised and training is rolled out in countries.

6. Training Report: Training of Trainers on Integrated Disease Surveillance and Response, Kigali, 29th August to 9th September 2011.

Adeline Kabeja, Jose Nyamusore, Felicien Nshimiyimana

Background

Many outbreaks experienced in Rwanda over the past years have not been timely detected and hence not responded to appropriately. In other words, the surveillance system has been lacking in terms of timeliness, completeness and accuracy of information gathered. Many challenges were identified as leading to the malfunctioning of the surveillance system; among them we could cite lack of adequate human resource dedicated for operating the system, with the ones available lacking in terms of capacities to run the system. In light of this situation, coupled with limited diagnostic capacities, IDSR technical guidelines with standardized case definitions of priority diseases were revised by IDSR experts and submitted to the Ministry of Health for validation before conducting a training of trainers for IDSR focal persons, head of laboratories and data managers all from District Hospitals for adequate implementation of the guidelines.

Capacity building of the disease surveillance players from all levels of the healthcare system is essential for strengthening disease surveillance and response. The Division of Epidemic Infectious Diseases planned and conducted District Hospital Training of Trainers (TOT's) to build capacities for the entire health care system.

Dr Thierry Nyatanyi, the Head of EID Division and Dr Simon Antara, the FELTP Resident Advisor opening IDSR ToT. L a Palisse-Nyandungu, September 2011

Trainings were held at La Palisse-Nyandungu, from 29th August to 9th September 2011. Three participants were invited from each district hospital; these include the IDSR Focal Point, the Head of District Hospital Laboratory and the Data Manager.

Training Objectives

- Explain the IDSR strategy and the importance of the district's role in its implementation
- Support detection and accurately report on priority diseases to relevant authorities
- Analyze, Interpret data, and use data to respond on priority diseases
- Investigate and respond to suspected outbreaks
- Prepare the district for controlling outbreaks
- Supervise and provide feedback
- Advocate with communities and district officials to support IDSR implementation
- Monitor and evaluate performance of IDSR implementation
- Develop a plan for strengthening IDSR in districts

Training Method

Three main documents were used during the training, namely:

- IDSR training manual for DH, Facilitator manual
- IDSR training manual for DH, participants manual
- IDSR Technical Guideline, version 2011

The EID team providing guidance to participants in IDSR ToT, September 2011

The training method was participatory. The followings strategies were used to impact knowledge, competencies, and skills needed in disease surveillance system:

- Pre-test evaluation,
- Power point presentation teaching as well as hard copies with the support of CD's which were distributed to all participants at the end of training
- Individual and group tasks
- Daily evaluation and daily summary presentation by participants to emphasize courses learned during the
- Post-test evaluation
- Course evaluation by the participants

Training Outputs

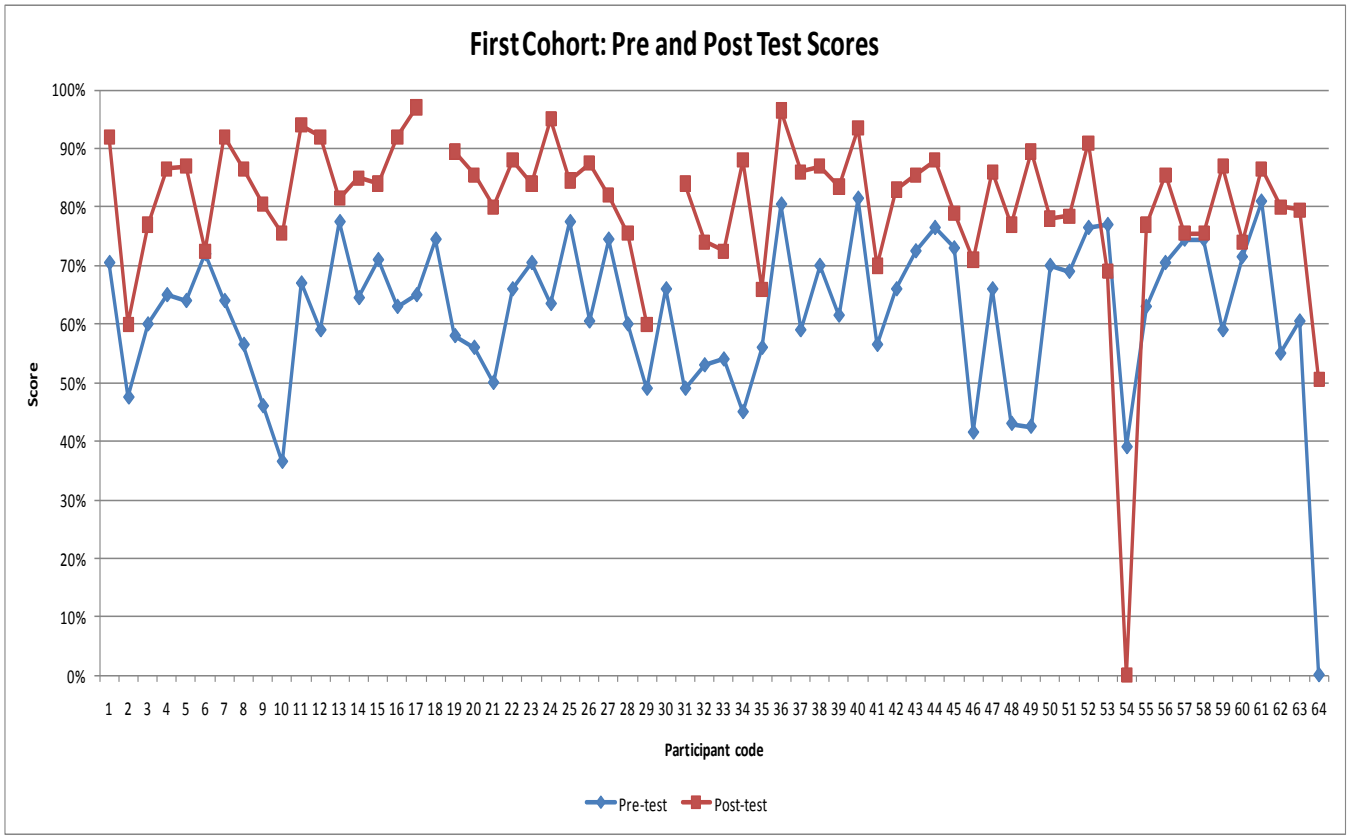
Dr Thierry Nyatanyi the head of EID Division delivers certificate to participants of IDSR ToT, September 2011

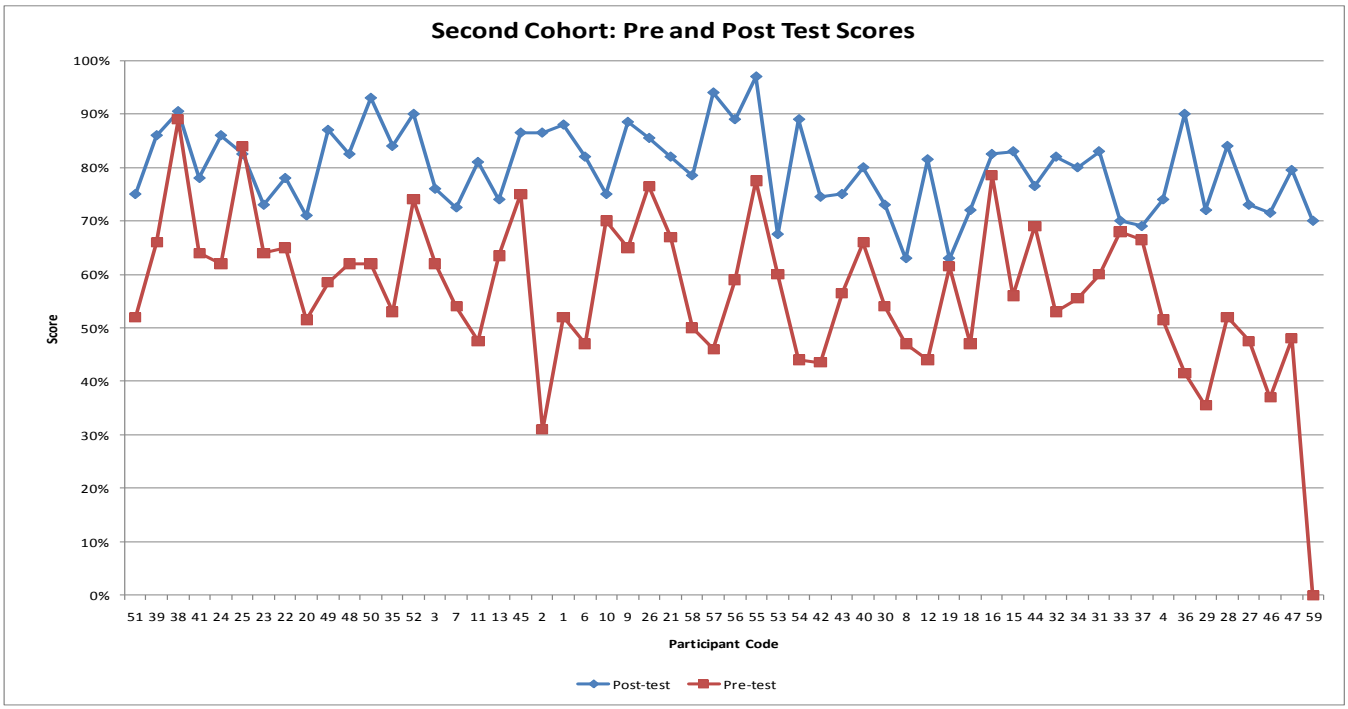
122 health workers from all DHs out of 126 invited attended the first training of trainers on IDSR. Participants were organized in two cohorts. The first cohort was composed of 64 HWs from DHs of Eastern Province and Western

Provinces attended training courses from 29th August to 2nd September 2011 while the second cohort was composed by 58 HWs from DHs in Northern Province, Southern Province and Kigali City attended training courses from 5th to 9th September 2011.

At the end of the training sessions, participants acquired knowledge on how to identify cases using standard case definitions, analyze and interpret data collected, analyze and interpret data collected, case based reporting and compiling and submitting weekly reports to the next level. Additional to courses provided on all aspects of IDSR, the training was an opportunity to give to laboratory its rightful place in the response and management of epidemics.

Trainees were also equipped with knowledge on how to prepare an outbreak preparedness plan, investigating and responding to suspected outbreaks. Furthermore, they were trained to conduct supportive supervisions and provide feedback to health facilities under their responsibility; and to monitor and evaluate the surveillance system in their setting to assess strengths and weaknesses for reorienting surveillance strategies.





At the end of training, all DHs trainers developed an action plan of IDSR activities including a training plan for health centers. The training provided a suitable opportunity to remind and to improve some indicators of disease surveillance including timeliness and completeness of weekly report.

Recommendations

At the end of the training participants were requested to provide recommendations to the Division of Epidemic Infectious Diseases for improvement of the surveillance system. They requested that:

Central level

- Should hold a coordination meeting once per semester with district surveillance team
- Elaborate standard M&E tool for surveillance
- Equip laboratories with specific reagents and equipments for diagnosis of epidemic prone diseases
- Avail training budget for training of Health Center teams at the hospital level

- Avail of Guideline in both languages, French and English at HC.
- Avail of IDSR training modules in French at DH and HC level
- Avail of supervision budget and data audit at DH level
- Elaborate and provide supervision tools
- Supervise HFs at least once per semester
- Set up outbreak management committees
- Develop terms of reference for epidemic management committees
- Organize a special training on data analysis, interpretation and how to calculate the thresholds.
- Review and adapt the format of weekly reporting form (diarrhea <5 years and malaria <5 years, etc)
- Collaborate with RARDA (Animal Department) for some diseases (e.g. Rabies)

District level

- Build or identify isolation facilities to be used in case of outbreaks.

Health Center level

- Set up outbreak investigation committees composed by Responsible of HC, In-charge of social services at Sector, Veterinary of Sector, Data Manager, In-charge of CHWs and the president of cooperative of CHWs.

Community level

- Give information on time if an outbreak is suspected

7. Announcements

7.1. **The 3rd Annual African Network for Influenza Surveillance and Epidemiology (ANISE), Nairobi, Kenya, 1st to 3rd February 2012.** This meeting follows on from the 2nd Annual ANISE Meeting held in Accra, Ghana in January 2011 and is sponsored by the U.S. Centers for Disease Control and Prevention (CDC) and the Kenya Ministry of Public Health and Sanitation. The theme of the meeting will include; Burden of Disease (including risk factors and economic studies), Virologic Surveillance, Co-infections and Other Respiratory Pathogens and Vaccines & Other Interventions. See details at https://www.team-psa.com/anise/2012/home.asp

7.2. **International Conference on Emerging Infectious Diseases (ICEID), Atlanta USA, 11th to 14th March, 2012:** Registration for the conference is currently ongoing: See details at http://www.iceid.org

7.3 The 4th AFENET Scientific Conference, Dar es Salaam, Tanzania, 11th to 16th December, 2011: The Tanzania Ministry of Health and Social Welfare (MoHSW), African Field Epidemiology Network (AFENET), and the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) are co-sponsoring the 4th AFENET Scientific Conference which will be held in Dar es Salaam, Tanzania from 11-16 December 2011: See details at http://afenet-conference.net/

8 Events in Pictures

A worker explains ARVs manufacturing to chiefs / heads medical services of EAC Partner States Armed Forces at quality chemicals plant in Kampala, Uganda

EAIDSNet participates in a CORDS meeting to document best practices by regional networks: James Kariuki - Kenya Medical Research Institute and Dr. Maurice Ope - EAC represented EAIDSNet

EAC donates Personal Protective Equipment (PPE) to various hospitals as part of Viral Haemorrhagic Fever Outbreak Preparedness

PPEs delivered to St. Mary's Hospital Lacor (Uganda) by EAC driver Mohammed Lutaaya

PPEs donated by EAC to Gulu Regional Hospital (Uganda)

PPEs donated by EAC to Kitgum Government Hospital