'never', suggesting that lack of PPE is a notable barrier to the effective performance of monkeypox surveillance activities.

Conclusion: We have demonstrated that the MPX curriculum developed for this initiative was effective in transferring knowledge and was associated with improved detection of human MPX cases. Similar models for training local health care workers and the provision of simple investigation tools may be useful for improving surveillance and response to other infectious diseases of epidemic potential in resource-poor settings in line with the model outlined for IDSR in Africa.

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Etiology of influenza-like-illness in Mozambique: The first 9 Months of influenza virus surveillance

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Background: Although the lower respiratory infections are the most severe form of infection and cause millions deaths, the upper respiratory infections are the most frequent presentation of Acute Respiratory Infection-ARI, and virus infections have been shown to play a major role in ARI in developed and developing countries. Respiratory viruses traditionally associated with ARI include influenza-(FLU) A and B, respiratory syncytial virus-(RSV), parainfluenza-(PIV) types 1/2/3, adenovirus-(AdV), enterovirus-(EV), human metapneumovirus-(hMpV) and rhinovirus-(RhV). However, few studies on the occurrence of these specific viruses were generated in Sub-Sahara Africa, in particular Mozambique. Thus, the objective of this study was to evaluate the occurrence of respiratory viruses among influenza virus surveillance samples.

Methods & Materials: From February to November 2013, 96 nasopharingeal swabs (NFS) from inpatients and outpatients enrolled during influenza virus surveillance in three sentinel sites in Maputo-Mozambique were collected. All samples were tested for influenza virus using RT-PCR following the CDC procedures. Therefore, 28 positive or negative NFS to FLU-A virus were randomly selected and tested for the presence of other respiratory viruses by using a SARI-Multiplex-RT-PCR (Pretorius *et al.*, 2012). Moreover, case definition criteria for FLU infection such as fever and cough were analyzed.

Results: FLU-A was detected in 11 samples. A(H3) subtype was found in 45% (5/11) samples while the h1pdm09 was detected in 55% (6/11) samples. Among non-FLU-A viruses, RhV was the most frequent pathogen 59% (10/17) followed by PIV3 and AdV (3/17) each and EV (2/17). Co-detections of only two viruses were found being the RhV the common co-detected pathogen (5/6). FLU-A and RhV were mostly detected in samples from 20-55 years old patients while RhV was co-detected with EV in children less than a year. All 28 samples were negative to PIV1, PIV2, RSV, FLU-B and hMpV. All FLU-A (11/11) positive patients had reported cough while 91% (10/11) had reported fever and headache.

Conclusion: This is the first report of other respiratory viruses in Mozambican subjects after the emergence of the h1pdm09 virus. This study provides relevant data for better understanding the viral ethiology of influenza like illness or severe acute respiratory infection during influenza surveillance.

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Malaria surveillance system evaluation, Oyo state, Nigeria 2012

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Background: Malaria constitutes a major public health problem in Africa, and Nigeria accounts for 25% of the burden of this infectious disease in Sub- Saharan Africa. Oyo state is holoendemic for malaria, and is the commonest reason for hospital outpatient attendance. The Integrated Disease Surveillance and Response (IDSR) was set up in 1998 to support concerted efforts towards priority disease prevention control and treatment. We assessed the relevance, and public health importance of the system in Oyo state, and evaluated its attributes and operations

Methods & Materials: Retrospective review of IDSR Malaria specific case summary data for January to December 2012 and descriptive analysis of cases was performed using Microsoft Excel. We conducted Key informant interviews with the program stakeholders (7 persons) and focused group discussions with the surveillance officers in the 33 Local Government areas (LGAs) in the state using self administered semi-structured questionnaires.

Results: The system provides information and data on disease trends, morbidity, mortality, and intervention coverage. Case definitions are well understood by participants, with willingness to continue in 25 out of 33 surveillance officers (76%) to sustain the system. Standardized data collection tools (stationery, paper and electronic based forms) are in place, and data communication is clear with feedback to surveillance units at all levels. The system was rated flexible in 5 out of 7 stakeholders (71%), as they believe it can accommodate the new changes in use and format. Data was essentially from public health facilities and excluded cases from tertiary and private health facilities and thus not representative. There was late reporting in 20 out of 33 LGAs (60%); and incomplete data in 195 out of 723 reporting facilities (27%), both parameters below the State's 80% target.

Conclusion: The Oyo state IDSR Malaria surveillance system is simple, flexible, acceptable and useful, however it is not representative, not timely, and data quality is low. There is a need to channel efforts towards integrating tertiary and private health facilities into the system, improve on data completeness and timeliness and increase supportive supervision for data quality assurance to health facilities, to improve feedback to reporting sites at all levels.

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Infectious diseases with changing geography

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Background: Human migration during the last decades and the subsequent spreading of infectious diseases beyond the boundaries of their usual habitat changed the diagnostic philosophy of infectionists and epidemiologists. We present two cases treated in our clinic with the diagnoses of visceral leishmaniasis and malaria associated with Crimean hemorrhagic fever.

Methods & Materials: Clinical observation, epidemiological investigation, laboratory testing with serological and virological diagnostics were done on the two patients.

Results: ***Case 1*** - A 33 year old man was treated with serologically proved diagnosis, ELISA (+) of visceral leishmaniasis. The disease started in Tavira, Portugal with fever (up to 39°C) and headache. *Objective status*: the patient was intoxicated with, anemic syndrome, splenohepatomegaly, Hb-94 g/l, Leuc.-1.95.10^9/l, Plt-44.10^9/l. He was treated for 28 days with meglumine antimoniate (amp. 5 ml. daily) combined with allopurinol and ketoconazole. After dynamic tracking the patient was clinically healthy, with normal laboratory indices. ***Case 2*** – A 39 year old man became ill 5 days after he return in Bulgaria from Zambia with symptoms of fever, headache, myalgia, vomiting and blood and mucous in diarrhea. *Objective status*: the patient was in severe state, intoxicated with craniopharyngeal and hemorrhagic syndromes, hepatosplenomegaly. Laboratory tests showed anemia, thrombocytopenia and uremia. The thick and thin smears proved tropical malaria with high number of plasmodium falciparum (224 000/μl). The PCR was positive for CCHF. He was treated with hyperimmune globulin, artequin and hemostatic drugs. The rarely observed association between the two diseases led to potentiation amid immunodepression with the development of cerebral complications and multiple organ failure with a fatal end.

Conclusion: The early diagnosis and adequate therapy of visceral leishmaniasis are crucial for its favorite outcome and the prevention of diagnostic errors with unpredictable effects. The most important measures are: WHO Global Malaria Programme, health education, medicine prophylactics of endemically exposed individuals, detailed epidemiological anamnesis and early etiological treatment after the onset of symptoms.

References**:**

1. Lagadinou M, Recurrent visceral leishmaniasis in an immunocompetent patient: a case report, J Med Case Rep. 2013 Mar 14;7(1):68.

2. B Sharifi-Mood et al., Co-infection of Malaria and Crimean-Congo Hemorrhagic Fever**,** Iran J Parasitol. 2011 August; 6(3): 113–115.

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Ocular complications associated with acute monkeypox virus infection, DRC

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Background: Monkeypox (MPX) is an acute febrile rash illness caused by infection with a zoonotic Orthopoxvirus. The disease is endemic in parts of the Democratic Republic of the Congo (DRC). In 2010, the Centers for Disease Control and Prevention (CDC) partnered with the Congolese Ministry of Health to conduct enhanced surveillance for monkeypox in the Tshuapa Health District. As part of enhanced surveillance, health-workers investigate suspect cases, collecting diagnostic samples and information pertaining to signs and symptoms of illness. Of particular concern are ocular manifestations, which can lead to blindness.

Methods & Materials: Data collected on MPX positive cases during 2010-2013 were analyzed to gain a better understanding of ocular complications in relation to demographics and symptoms of MPX illness. Cases were considered MPX positive if a single diagnostic specimen tested positive by real-time PCR at either CDC or the national laboratory in Kinshasa.

Results: "Conjunctivitis" was reported for a total of 68 (23.1%) MPX cases. The majority were male (61.7%) and under 10 years of age (61.8%). 51.8% of the MPX cases that identified as "non-student child" and 17% that identified as "student" had reported "conjunctivitis". Cases where "conjunctivitis" was reported had a higher frequency of other symptoms, such as nausea, chills/sweating, mouth ulcers, sore throat, lymphadenopathy, fatigue, and sensitivity to light compared to those with no reported "conjunctivitis". 47% of cases with "conjunctivitis" reported being "bed-ridden", compared to 16% of cases where "conjunctivitis" was not reported.