

were considered as cases and negative as controls. Data regarding socio-demographic factors were collected through a predesigned questionnaire after taking verbal consents from the patients. Data was entered and analyzed by SPSS 16. Chi square test was applied to see the association between various socio-demographic factors and dengue fever. Odds ratio was calculated to determine the risk of these factors at p -value < 0.05 .

Results: Results regarding various hypothesized risk factors were Job status (OR=1.47), Type of housing (OR=2.21), Door Mesh (OR=0.305), Mesh on Windows (OR=0.58), Use of Insect Killer (OR=0.52), Stagnant water in house (OR=1.881), Water storage tank (OR=0.31), Water leakage in main supply (OR=2.47), Buckets/Tubs Covering (OR=0.701), Disposal of house hold waste (OR=0.244), Outdoor plants near the house (OR=1.113), Water in vicinity of plant (OR=1.159), Morning Walk (OR=2.918), Covering of sleeves when go outdoor (OR=0.863), Covering of feet when go outside (OR=0.703), Going out at Dawn (OR=2.11), Going out at dusk (OR=2.189).

Conclusion: Dengue illness in Lahore is due to the presence of potential risk factors present inside/outside of homes as well as behaviour such as lack of personal and home protection which exposed them to the dengue vector.

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Room: Ballroom

The impact of insecticide treated nets on malaria transmission potential in Kamuli district, Uganda



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Background: The main entomological justification for use of insecticide-treated bed nets (ITNs)/Long Lasting Insecticide-treated bed nets (LLINs) as the main malaria vector control method in Uganda is that most biting by *Anopheles gambiae sensu lato* and *Anopheles funestus* group, the principal vectors is believed to occur between 10:00pm and 5:00am when most people are in bed and under bed nets. Hypothetically, this biting pattern changed following prolonged use of ITNs/LLINs, rendering this intervention less effective, explaining the continued morbidity and mortality due to malaria in endemic Uganda. A longitudinal study was conducted to determine the *Plasmodium falciparum* sporozoite-infective biting hours of the night and the parasite transmission intensities under prolonged use of ITNs/LLINs in Kamuli district.

Methods & Materials: A *P.f.* circum-sporozoite protein ELISA was carried out on 551 (112 pools) and 1640 (331 pools) *Anopheles gambiae s.l.* and *An. funestus* group caught at different hours of the night in intervention (with ITNs) and non-intervention (without ITNs) zones respectively. The circumsporozoite positivity of the vectors was related to the time of biting humans, while the annual entomological inoculation rates (AEIRs) were obtained by multiplying the average annual human biting rate by the sporozoite rate.

Results: Results showed no impact of ITNs/LLINs on the sporozoite-infective biting hours of the night and probably reduced

sporozoite infection rates. Infective biting by the vectors occurred throughout the night, with peak infection occurring between 20:00 and 04:00 hours in both zones, indicating protective effectiveness of ITNs against malaria sporozoite-infective biting by the vectors. In both zones, the malaria transmission potential was higher outdoors than indoors, and was several fold higher in the non-intervention than in the intervention zone, indicating that ITNs may have reduced the EIRs in the intervention zone. The AEIRs in both zones exceeded one, placing Kamuli district far from malaria elimination phase like most of the country

Conclusion: An integrated approach to malaria control should be adopted in Kamuli district and other parts of the country to reduce the transmission intensity to levels that could interrupt *P. falciparum* malaria transmission, and possibly driving Uganda closer to the malaria elimination phase.

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Risk factors for Lassa fever in endemic communities of Edo State, Nigeria



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Background: Lassa fever is an acute febrile illness caused by the Lassa virus, a member of the family of Arenaviridae, whose natural hosts are rodents of the genus *Mastomys*. The community based descriptive cross sectional study set out to assess the prevalence of risk factors and serostatus to Lassa virus specific IgM and IgG antibodies in Lassa fever endemic communities in Esan West local government area of Edo state, Nigeria.

Methods & Materials: The knowledge and risk practices on Lassa fever of four hundred and twenty one respondents selected by means of a multistage sampling technique was determined using an interviewer administered structured questionnaire. Their Lassa specific antibodies IgG and IgM were determined using ELISA.

Results: One hundred and ninety three (76.6%) respondents had poor knowledge, and 18 (7.1%) good knowledge. Knowledge was significantly associated with level of education ($p=0.02$). There was no association of knowledge with occupation ($p=0.67$) and sex ($p=0.69$).

One hundred and ninety three (45.8%) respondents had high risk of rodent contact, 228 (54.2%) had low risk. Overall, 142 (33.7%) were at risk of disease from poor food hygiene practices, whereas the majority, 279 (66.3%) had low risk. IgM was found in 2 (1.3%) respondents, and IgG, in 62 (35.0%). Sex ($p=0.09$) and occupation ($p=0.21$) were not found to have any statistically significant association with IgM status. IgG status was significantly associated with educational level ($p=0.025$), age ($p=0.003$) and marital status ($p=0.006$).

Conclusion: Transmission of Lassa virus is still largely due to low level of knowledge of the disease in these communities. Current awareness campaign strategy is not winning. There is need to seek for an effective method of Community health education such as mass production and distribution of information leaflets on lassa fever in the local language.

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Yellow fever outbreak investigation and response, Darfur State, Sudan, September–November 2012



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Background: Sudan is in the yellow fever (YF) belt of Africa. In 2005 last outbreak of YF was detected in South Kordofan. In September 2012 Darfur States started to report the emerging of YF cases. The ongoing field investigation and management of YF outbreak was conducted to establish existence of outbreak, describe epidemiology of disease and to provide feedback for prevention and control

Methods & Materials: A Field based assessment was conducted by, interviews, lab test, questionnaires and standard lab forms. Interviews conducted with key informants, patients, health personnel, family of deceased and nomads in the city and market. Blood samples taken. Quantitative and qualitative data analyzed using SPSS for interpretation of results.

Results: From Sep 1st thru 28th Nov 2012 a total of 578 cases reported to Federal Ministry of health (FMOH) and resulted in 129 deaths, with CFR = 29%, AR 22.3. Common symptoms include; fever (98%), headache (71%), bleeding manifestation (50%), jaundice (39%). The most affected age group was 15–29.9 years (51%). All cases were notified from Darfur states, (Central 62%), East (0.5%), West (17%), North (11.5%) and South (9%), where 30 localities out of 57 were included. Male to female ratio 2:1. Similar sex and age distribution of exposure found among nomads and residents. Risk factors include; nomadic lifestyle, refugee camps, mountainous areas, presence of monkeys and vectors. Two samples out of first five were confirmed by IgM ELISA test and RT-PCR by the WHO reference laboratory for YF in Dakar, Senegal. Total of 67 samples from outbreak processed locally in National Public Health lab revealed 11 positive, 11 negative for YF, 2 negative 2 positive for flavivirus.

Conclusion: FMOH detected YF outbreak in Darfur states and the causes of the disease are declining after measures were taken to control and prevent further outbreak which include cases management and isolation. Mass vaccination Parallel direct control measures: environmental-vector control, health education and community mobilization. Lack of infrastructure and the poor security situation in the area certainly complicate situation. Recent report received about the circulation of the mosquito to several parts of the country risking further spread of the disease

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Management of *Mycobacterium ulcerans* disease (buruli ulcer) in the Territory of Songololo, Democratic Republic of Congo: Outcomes, challenges and prospects



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Background: Buruli ulcer is caused by infection with *Mycobacterium ulcerans*, an organism which belongs to the family of bacteria that causes tuberculosis and leprosy. Without treatment, the infection leads to destruction of skin and soft tissue with large ulcers usually on limbs, resulting to long-term functional disability. The General Reference Hospital of the “Institut Médical Evangélique” of Kimpese, located in the Territory of Songololo, known to be one of the main Buruli ulcer (BU) foci in the Democratic Republic of Congo, launched in 2004 a specialized BU program, offering in-patient treatment free-of-charge and supplementary aid. Although the number of BU cases admitted in the hospital was rising, a survey conducted in July–August 2008, in the Territory of Songololo, showed that only one in thirteen active BU cases was notified at the hospital at Kimpese in the 8 months prior to the survey.

Methods & Materials: We conducted a prospective observational study from 2009 through 2012 to assess the impact of decentralization and integration of BU control activities at the primary level of the health system in Songololo.

Results: The preliminary impact evaluation of the decentralization showed: (i) strong increase in case detection (3.6 times more cases detected), four years (2004–2007) before the Songololo survey conducted in 2008, 183 new cases have been reported, while 655 were detected after (2009–2012); (ii) the preponderance of category I lesions the last four years; (iii) around 50% of reported cases were confirmed by at least one laboratory test; (iv) three-quarters of reported cases have been treated in peripheral health centres; (v) increase in number of health areas reporting cases: On average, 15 out of 40 health areas before and 28 out of 40 after.

Conclusion: Decentralization and integration of BU control activities seem to be key ways of improvement of access to diagnosis and care at the most peripheral level of the health system. Partnership with health zones are of utmost importance for the implementation of a simple, functional, and efficient surveillance system in a resource-limited context, exportable in other BU endemic regions of the country. Meanwhile, sustaining the project's impact remains a big challenge in the region.

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