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Binomics of mosquitos in Anambra State, Nigeria

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Background: Mosquito-borne infections constitute major public health challenge in Nigeria. Following indoor residual spraying (IRS) in some communities, there was the need to study species distribution, breeding habitats and infection rates to inform efforts at the elimination of mosquito-borne infections.

Methods & Materials: Collection of larval mosquitoes was carried out using appropriate sampling techniques for specific habitats. Adult indoor and outdoor biting mosquitoes were sampled using Pyrethrum Knockdown Collection (PKC) and Human Bait Collection (HBC) techniques, respectively. Blood fed mosquitoes were dissected for infection using the pressing method.

Results: 307 mosquito larvae comprising 3 genera and 5 species (*Anopheles gambiae*, *Aedes simpsoni*, *Ae. albopictus*, *Ae. aegypti* and *Culex quinquefasciatus*) were collected from 4 different breeding habitats (ground pools, domestic containers, drainage/gutters and plant axils). 684 indoor mosquitoes comprising *An. gambiae* 39.3%, *Cx. quinquefasciatus* 60.5% and *An. moucheti* 0.2% were collected. 143 outdoor mosquitoes comprising *Ae. aegypti* 72.7%, *Ae. albopictus* 23.0%, *Ae. africanus* 2.8% and *Ae. simpsoni* 1.4% were collected. Zero infection rates were recorded for dissected species.

Conclusion: Dissected mosquitoes showed zero infection rates probably due to the recent IRS in the area studied. The 5 species identified are potential vectors of diseases of public health importance and action is needed in manipulating the identified 4 breeding habitats in order to protect community members from mosquito bites and possible transmission of infections.

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Hospital Based Surveillance for Radiological Pneumonia in children under 5 years of age in Uttar Pradesh and Bihar: Project protocol and preliminary results

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Background: Pneumonia is responsible for about 2 million deaths in children <5 years, mostly in developing countries like India and within India in the states of Uttar Pradesh (UP) and Bihar. Hence dedicated efforts are required to focus on strategies to reduce pneumonia specific mortality.

Methods & Materials: Aim: To estimate the incidence of radiological pneumonia in children <5 years.

Objectives: Primary objectives are to estimate the annual incidence of radiological pneumonia in children aged 2 – 59 months in districts of Lucknow and Etawah in UP and Patna and Darbhanga in Bihar. residing in pre-specified district as well as to document clinical and demographic characteristics of cases of WHO defined community acquired pneumonia (CAP) with lower chest indrawing (LCI) and severe CAP by establishment of hospital-based surveillance network.

Study design: In a prospective design, hospital-based radiological pneumonia surveillance is being done in Lucknow district and will begin in other 3 from 1.1.16. Cases will be enrolled from network hospitals. Clinical and demographic data will abstracted and chest x-ray (PA) view obtained and archived electronically. An independent panel of radiologists trained in the WHO standard reporting methodology, will interpret x-rays. In Phase I (2015), standard operating procedures were developed and validated as well as web-based data entry software developed by Central Coordinating Unit, King George's Medical University (KGMU), Lucknow. Thereafter in Phase II surveillance will be initiated in three other districts in addition to Lucknow.

Sample size: Assuming incidence of radiological pneumonia is 3.0/100 child years and for a margin of error of 1.5, incidence of pneumonia in community of 20/100 child years, alpha level of 0.05 and power of 90% when the estimated population of children <5 years in Lucknow district is 750,000; 693 cases have to be included in radiological surveillance study.

Results: Preliminary results will be shared.

Conclusion: Implications: Baseline incidence of radiological pneumonia in high infant mortality states will be estimated which could form the basis of taking evidence based informed decisions for instituting control measures.

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