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Session: Infectious Disease Surveillance I

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Room: Ballroom

The impact of the expansion of urban vegetable farming on malaria transmission in major cities of BeninY. Anges^{1,*}, N. Raphael², A. Martin³¹ University of Parakou, Cotonou, Benin² London School of Hygiene and Tropical Medicine, CREC, Cotonou, Benin³ CREC, Cotonou, Benin

Background: Urban agricultural isexpanding in several cities of the Republic of Benin. This study aims to assess the impact of such practices on transmission of the malaria parasite in major cities of Benin.

Methods & Materials: A cross sectional entomological study was carried out from January to December 2012 in two vegetable farming sites in southern Benin (Houeyiho and Acron) and one in the northern area (Azèrèkè). The study was based on sampling of mosquitoes by Human Landing Catches (HLC) in households close to the vegetable farms and in others located far from the farms.

Results: During the year of study, 71,678 female mosquitoes were caught by HLC of which 25% (17,920/71,678) were *Anopheles* species. In the areas surveyed, the main malaria parasite, *Plasmodium falciparum* was transmitted in the south by *Anopheles gambiae* s.s. Transmission was high during the rainy seasons but declined in the two dry seasons (December to March and August to September). In the north, transmission occurred from June to October during the rainy season and was vehicled by two members of the *An. gambiae* complex: *Anopheles gambiae* s.s. (98%) and *Anopheles arabiensis* (2%). At Houeyiho, Acron and Azèrèkè, the Entomological Inoculation Rates (EIRs) and the Human Biting Rates (HBRs) were significantly higher during the dry season in Households Close to Vegetable Farms (HCVF) than in those located far from the vegetable areas (HFVF) ($p < 0.05$). However, there were no significant differences in HBRs or EIRs between HCVF and HFVF during the rainy seasons at these sites ($p > 0.05$).

Conclusion: These findings showed that communities living close to vegetable farms are permanently exposed to malaria throughout the year, whereas the risk in those living far from such agricultural practices is limited and only critical during the rainy seasons. Measures must be taken by African governments to create awareness among farmers and ultimately decentralize farming activities from urban to rural areas where human-vector contact is limited

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Evaluation of the Acute Flaccid Paralysis surveillance (AFP) system in Sierra Leone, 2012

D. Sowa

CENTRAL PUBLIC HEALTH REFERENCE LABORATORY,
Freetown, Sierra Leone

Background: Poliomyelitis is a highly infectious viral disease that affects children below the age of 15 years which is transmitted via the fecal-oral route from person to person. One in every 200 infections leads to irreversible paralysis, usually in the legs. Polio is preventable by immunization and earmarked by the World Health Organization for eradication. Sierra Leone is working toward certification of Poliomyelitis-free status. A suspected case of Polio is any child under 15 years of age with acute flaccid paralysis (AFP) or any person of any age with paralytic illness which the clinician suspects poliomyelitis involvement and a confirmed case is any suspected case from which the wild polio virus is isolated. The AFP surveillance system in Sierra Leone was evaluated to determine if the system was meeting its set objectives and to assess the system's attributes.

Methods & Materials: We used guidelines developed by Centres for Disease Control and Prevention, Atlanta. We reviewed surveillance records and analysed data sets on AFP from 2005 to 2012 from the National Surveillance Unit. We also interviewed stakeholders at all levels.

Results: From 2005–2012, 8 wild polio virus case were identified in the country; in 2009 six wild polio cases were identified; Bo, Moyamba, Port-Loko and Western Area (Rural) had one case each whilst Kambia had 2. In 2010 and 2011; Western Area (Rural) identified a case. The non-polio AFP rate increased from 2.4 to 6.2 cases per 100,000 children below 15 years from a target of 2 cases per 100,000 children below 15 years. The AFP surveillance system is integrated with other priority diseases and has a clear case definition and external laboratory support. The system is simple, flexible, sensitive, specific, stable and well represented. Incompleteness, poor data management and analysis at the district levels are the weaknesses. Vices are poor feedback, inadequate personnel and logistics.

Conclusion: The AFP surveillance system meets set objectives but needs improvement in efficiency in logistics planning, data management, data quality including completeness and analysis. Feedback from national levels to the districts and below should be monitored including timely laboratory results.

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