of 38,882 inhabitants. Including surrounding areas, approximately 70,000 individuals have access to the Agogo Presbyterian Hospital (APH). The study procedures followed the standardized protocol to ensure comparability of data across African sites and included the conduct of an health-care utilization surveys to adjust the numerator in incidence calculations for frequency of use of the APH. All admitted patients with a history of objective or subjective fever (tympanic fever $\geq 38°C$) and outpatients with objective fever in the past 72 hours were eligible for enrollment. Bacterial diagnoses were conducted using automated blood culture equipment.

Results: From January 2010 to October 2011, 5,134 patients were enrolled. In total, 389 cultures were positive for bacteria, among which 64 were positive for *S.* Typhi (16.5%). The majority (56.5%) of *S.* Typhi infections occurred in children less than 15 years of age. The highest annual incidence for *S.* Typhi was found in the 8-10 years age group (198/100,000). The annual incidence in the 2-<5 and 5-<8 age group was 134/100,000 and 149/100,000, respectively. Non-typhoidal Salmonella (NTS) infections occurred in younger children, with the highest annual incidence of >600/100,000 in children under five years of age.

Conclusion: Our study demonstrates that invasive *Salmonella* infections constitute a significant problem in Ghana, which might also be reflected in other parts of sub-Saharan Africa. Introduction of vaccines against invasive *Salmonella* infections for children should be considered.

http://dx.doi.org/10.1016/j.ijid.2012.05.284

Type: Poster Presentation

Final Abstract Number: 41.009
Session: Infectious Disease Surveillance
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Spatio-temporal dispersion of *Aedes taeniorhynchus* in Florida

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Background: *Aedes taeniorhynchus* is normally associated in high numbers with salt marshes along coastal areas in North, Central and South America. It has the potential to be a critical vector of important human and animal arboviruses. St. Louis encephalitis, Everglades, and West Nile viruses have been isolated from it in Florida, and can transmit epizootic strains of Venezuelan equine encephalomyelitis, eastern equine encephalitis, and Rift Valley fever viruses in the lab. To better identify the threat from these viruses we are attempting to better understand the spatio-temporal patterns of *Aedes taeniorhynchus* in Florida.

Methods: Eighteen years of mosquito trap data from Sarasota County, Florida were used for the analyses in this paper. The data, based on systematic mosquito traps, consists of a geographic location coordinates along with mosquito population assessments by species and date. To quantify the spatio-temporal movement of the study species a spatial auto-regressive model was used for analysis. Geographic information system (GIS) software was also used to display and analyze areas with varying population levels.

Results: The highest population numbers for Aedes taeniorhynchus are consistent during the typical Florida summer months of elevated rainfall and temperatures in June, July, and August with July being the peak of the three. Geospatial analysis identified locations that are conducive to consistently high populations of Aedes taeniorhynchus and a quantitative approach showed a marked dispersion to the east to inland areas from the Gulf of Mexico coast over time, particularly from those coastal sites with the highest mosquito numbers. Analyses of interannual differences in mosquito populations will be discussed in relation to environmental conditions such as rainfall and tide levels.

Conclusion: Knowledge of the temporal and spatial distribution of populations of potentially important disease carrying mosquito vectors is important for categorizing areas of varying risk for disease transmission. Since *Aedes taeniorhynchus* is a coastal species with the capacity to transmit indigenous and exotic arboviruses, and there is a potential for an introduction of exotic diseases into the United States through shipping ports, enhanced surveillance and control measures need to be established.

http://dx.doi.org/10.1016/j.ijid.2012.05.285

Type: Poster Presentation

Final Abstract Number: 41.010
Session: Infectious Disease Surveillance
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Impact of immunization against hepatitis B virus in areas of high endemicity in Brazil

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Background: The Brazilian government implemented immunization against hepatitis B for infants and children in the western Amazon since 1991, and gradually expanded this to other states considered how high HBV endemicity. Since 1998, the HBV vaccine has been incorporated into the immunization schedule for infants as a national policy and, in 2001, this was broadened to include children and adolescents; more recently until 29 years old. The present study is part of an ongoing population-based hepatitis survey, aimed at estimating the prevalence and predictive factors for HBV infection in all the State capitals from South and Southeast and North region of Brazil, some with highly prevalence of hepatitis B.

Methods: This Cross-sectional population-based household investigation was conducted in 2007- 2008. The inclusion criterion was individuals aged between 10 and 69 years old living in urban areas of the 14 State capitals in the three study regions with estimate population of 20.541.316. The study population was divided in two age strata (10-19) and (20-69) in each area. A random sample was obtained using a stratified multistage cluster sampling strategy, at census tract, block and household level. Blood samples were collected after the interview and specimens tested for antibodies to hepatitis B core antigen (anti-HBc) using enzyme-linked immunoassay – ELISA (AxsymÔ, ABBOTT Laboratories) in central public health laboratories. Outcomes indicating HBV infection were