1117. The Acute Febrile Illness Surveillance Study in Puerto Rico: Findings from the First Two Years

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Background. Dengue has been endemic in Puerto Rico for four decades, but little is known about other acute febrile illnesses (AFI) on the differential diagnosis of dengue. To study this, an AFI surveillance study was implemented at a Sentinel Enhanced Dengue Surveillance Site consisting of a teaching hospital and a small rural hospital in Puerto Rico.

Methods. Outpatients with fever or history of fever for <7 days were enrolled with informed consent and followed through their illness. Serum and nasopharyngeal swabs were collected and tested by PCR and immunodiagnostic methods as appropriate for the four dengue viruses (DENV-1-4), influenza virus A (Flu A), influenza virus B (Flu B), five other respiratory viruses (ORV) including adenovirus, respiratory syncytial virus, metapneumovirus, and parainfluenza viruses 1 and 3, 122 enteroviruses (Entero), *Leptospira* spp. (Lepto), and *Burkholderia pseudomallei* (Burk).

Results. From May 7, 2012 through May 6, 2014, 5,207 of 23,627 AFI patients seeking care were enrolled; 31.3% were hospitalized, 50.2% were female, and the median age was 12.0 years (range: 0-103 years). Half (49.3%, 2,567) of all enrolled patients had a pathogen detected; 963 (37.5%) were DENV, 794 (30.9%) Flu A and B, 675 (26.3%) ORV, 48 (1.9%) Entero, 8 (0.3%) Lepto, and 2 (0.1%) Burk. In addition, 77 (3.0%) co-infections were confirmed by PCR; nearly half (34, 44.2%) were DENV co-infections and most (31, 91.2%) were PCR positive for DENV and a respiratory virus. Almost all (95.1%) of the 719 DENV PCR positive cases were DENV-1; 33 DENV-4 and two DENV-2 cases were detected. Dengue patients were slightly older than other enrolled patients (median age 15.0 vs 10.0 years) but similar in age to influenza patients (median age 15.0 vs 17.0 years). Dengue patients were more likely to be admitted than other enrolled patients (OR 2.33, 95%CI 2.02-2.70) and influenza patients (OR 3.26, 95%CI 2.62-4.06).

Conclusion. Most AFIs were caused by either a DENV, a viral respiratory pathogen (Flu A, Flu B or ORV), or an enterovirus. Leptospirosis and melioidosis cases were sporadic and focal; study of these diseases may require additional study sites in high risk areas of the island. Reasons for why dengue cases were more likely to be hospitalized will be studied further and data for the first two years will be presented.

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