

1661. Travel-Associated Infectious Disease Surveillance Using the Pediatric Health Information System (PHIS) Database

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Session: 204. Infectious Diseases in Travelers, Immigrants, and Refugees
Saturday, October 11, 2014: 12:30 PM

Background. International travel is increasing among US children and adolescents, potentially leading to increased rates of travel-associated infectious diseases (TAIDs). Surveillance networks for TAIDs in the United States are limited. The Pediatric Health Information System (PHIS) database now collects detailed data on all pediatric admissions to 44 children's hospitals in the United States.

Methods. We identified all discharges with an ICD-9 diagnosis for malaria, typhoid, and dengue from 1999 to 2012 from 16 participating hospitals with complete data. Readmissions were excluded. Incidence rates were determined by cases divided by total hospital discharges per year. Individual disease and pooled incidence rates were compared between 1999-2005 and 2006-2012 as well as before (1999-2006), during (2007-2009), and after (2010-2012) the US economic recession.

Results. Pooled incidence of TAIDs (malaria, typhoid, and dengue) increased significantly between 1999-2006 and 2007-2012, from 12.0 to 15.2 cases per 100,000 person-years ($p = 0.048$). Incidence rates of each individual disease also increased but did not achieve statistical significance. Four of 16 hospitals (25%) had a

statistically significant increase in pooled TAID incidence and none saw a significant decrease. When comparing before, during, and after the 2007-2009 economic recession, there was a significant change in incidence rates for dengue ($p = 0.016$) and pooled TAID ($p = 0.009$), though all diseases studied showed a similar trend (table).

Hospital incidence rates (cases per 100,000 person-years) of TAIDs in time periods spanning the US economic recession

	1999-2006	2007-2009	2010-2012
Malaria	6.7	6.4	8.4
Typhoid	5.0	4.4	7.0
Dengue[†]	1.1	0.6	2.5
Pooled^{†*}	12.9	11.3	18.0

[†] $p < 0.05$ (2007-2009 vs 2010-2012)

* $p < 0.05$ (1999-2006 vs 2010-2012)

Conclusion. Hospital admissions for pediatric TAIDs, including malaria, typhoid, and dengue, are increasing among a large group of pediatric hospitals in the United States. Incidence rates decreased in 2007-2009 perhaps related to the economic recession and reduced travel. The PHIS database may provide a useful surveillance tool to measure incidence of travel-associated diseases among children in the United States.

Disclosures. All authors: No reported disclosures.