

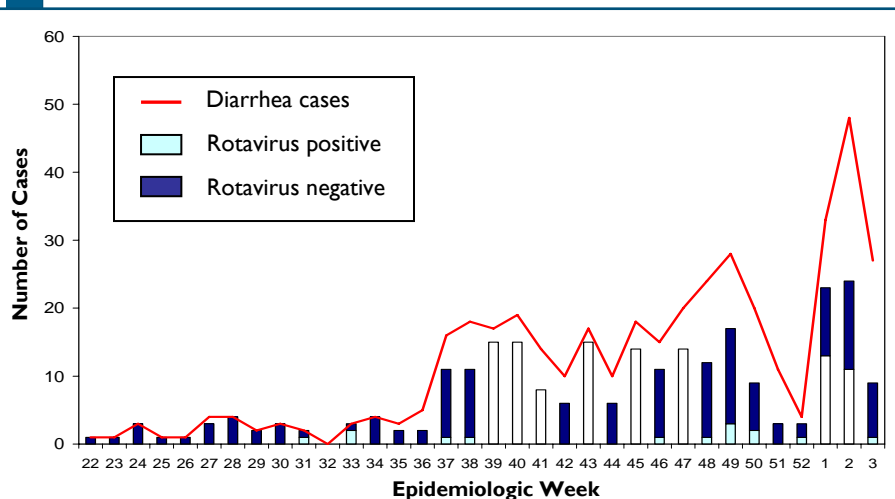
International Emerging Infections Program Central America and Panama (IEIP-CAP) Quarterly Newsletter

1ST QUARTER, 2008

Increase in Diarrhea-Related Mortality in the Department of Santa Rosa from December 2007 through January 2008

In January of 2008, the Health Area of Santa Rosa requested IEIP-CAP's assistance in investigating an unusual number of deaths due to diarrhea. Concomitantly, surveillance data from the Regional Hospital of Cuilapa indicated a sharp increase in the prevalence of rotavirus infection among hospitalized children beginning in January. To investigate the cause of the increased mortality and identify risk factors, we conducted a standardized verbal autopsy of all reported diarrhea-related deaths among children <5 years of age from December 2007 through the end of January 2008. A total of 21 suspected diarrhea-related deaths were identified; 17 were confirmed. Seventy-two percent of cases were male and the median age was 8 months (range: 3 months–3 years). The majority of cases had fever (90%) and nausea with vomiting (70%). Twenty-five percent of cases reported bloody stools. We obtained clinical specimens from 3 of 17 patients. One whole stool sample was collected and found to be negative for rotavirus. Three serum samples were also tested for rotavirus and found to be negative. Four rectal swabs were tested for bacterial pathogens. One was positive for *Salmonella* type Newport and two were positive for enterotoxigenic *Escherichia coli* (ETEC). We conducted a case-control study using two groups of controls (surviving hospitalized cases of children

<5 years old, confirmed rotavirus positive and confirmed rotavirus negative) and found that the children who died were more likely to show signs of dehydration and have experienced vomiting than both control groups, and to be more likely to have blood in the stool than the rotavirus-positive, but not the rotavirus-negative, controls. Risk factors for dying from diarrhea included not ever having been breastfed, but use of oral rehydration solution was similar between the deceased cases and both groups of controls. These data suggest that the excess mortality during this rotavirus season was due to bacterial causes; as clinical characteristics are similar between many bacterial diarrheas and rotavirus, introduction of a rotavirus vaccine could help clarify the causes of increases in diarrhea mortality.



Population-Based Surveillance in the Department of Santa Rosa

Private Providers Included in Surveillance

Results of the healthcare utilization survey conducted in the Department of Santa Rosa in 2006 indicated that, of the people who seek treatment outside the home, private physicians are treating approximately 14% of all diarrhea cases, 20% of influenza-like illnesses (ILI), and 36% of severe respiratory cases. Therefore, we are working to include private providers in our surveillance system within the *municipio* of Nueva Santa Rosa. Eleven private physicians of 13 identified as working within the *municipio* agreed to participate and received a pre-programmed personal digital assistant (PDA) to collect basic demographic, clinical, and epidemiological data on cases that the physicians suspect of having diarrhea, pneumonia, or ILI. Physicians carry the PDAs and record the basic surveillance data during the clinic visit. Data are downloaded from the PDAs monthly. To date, information has been collected on 61 patients (34 respiratory and 27 diarrhea), and problems with use of the PDAs have been minor. In future bulletins, we will present a comparison of the patients attending private clinics with those seen at the health centers and health posts.

Syndrome	Date surveillance began	No. screened	No. eligible	No. agreed to participate	No. provided samples
Meningitis	February 2007	297	31	15	15
Encephalitis	February 2007			13	13
Acute flaccid paralysis	February 2007			3	3
Diarrhea	June 2007	1438	704	679	646
Pneumonia	November 2007	185	127	118	95
Influenza-like illness	November 2007	1269	68	59	57

Update from the IEIP Workshop on Population-Based Pneumonia Surveillance

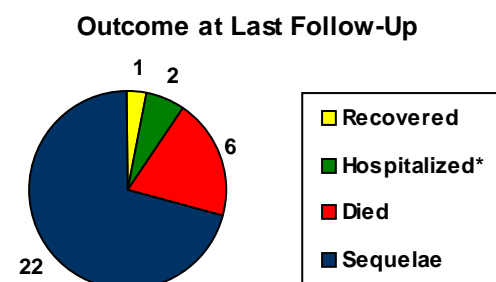
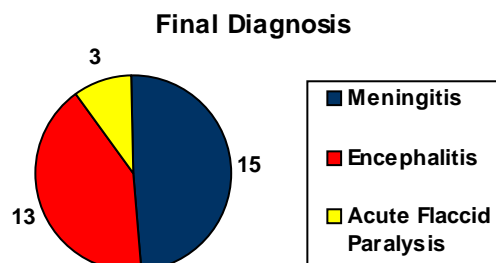
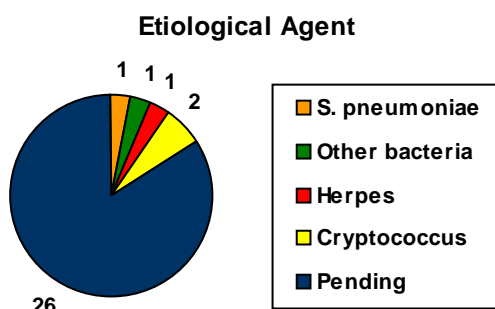
The IEIP program held a workshop on population-based pneumonia surveillance from March 12th to 14th in Decatur, Georgia. The purpose of the workshop was to identify opportunities to harmonize pneumonia surveillance that is currently underway in three IEIP sites (Thailand, Kenya, and Guatemala) and planned for two more (Egypt and China). Workshop participants listened to presentations from a variety of CDC-Atlanta staff on topics such as case definitions, catchment areas, data management, and calculation of measures of disease frequency. Sites had an opportunity to share experiences and identify areas where harmonization is both possible and desirable. Several decisions were made, including a list of 5 key respiratory pathogens to be included in surveillance at all sites (*Streptococcus pneumoniae*, *Haemophilus influenzae* type b, influenza, respiratory syncytial virus, and tuberculosis, although sites have the opportunity to add more), and a number of working groups were convened to follow up on discussions in key topic areas. Guatemala sent 3 Ministry of Public Health representatives (Dr. Lissette Reyes, Dr. Anabela Aragon, and Dr. Vinicio Perez) to the workshop.



IEIP pneumonia surveillance workshop attendees.

Report from the First 13 Months of Neurological Disease Surveillance in the Department of Santa Rosa

Population-based surveillance for neurological disease began in February 2007 at the Cuilapa Regional Hospital in the Department of Santa Rosa. As of March 27, 2008, 31 patients with neurological disease were enrolled: 16 males and 17 less than 18 years of age. Cerebrospinal fluid samples were collected from all patients for etiological agent analysis. The majority of cases had a final diagnosis of meningitis or encephalitis. Nineteen percent of the patients had died and only one patient had recovered completely at last follow-up.



*These patients had been hospitalized for 17 and 21 days as of March 27, 2008.

Program Events & Highlights

Abstracts and Presentations

International Conference on Emerging Infectious Diseases (March, Atlanta):

- ❖ *Healthcare utilization and treatment practices for diarrheal diseases in Guatemala—2006*
Presented by Dr. Wences Arvelo, IEIP-CAP Guatemala.
- ❖ *Healthcare utilization practices for influenza-like illness and severe acute respiratory infection in Guatemala: Implications for influenza surveillance*
Presented by Dr. April Johnson, National Center for Immunization and Respiratory Disease, CDC, Atlanta.

Meetings

- ❖ Drs. Lindblade and Arvelo (IEIP) and Drs. Reyes, Aragon, and Perez attended the IEIP Workshop on Population-Based Pneumonia Surveillance in March in Atlanta.
- ❖ Drs. Lindblade and Arvelo (IEIP) and Dr. Francisco Ardón attended the second meeting of the IEIP Steering Group in March in Atlanta.

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