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ISDS INTERNATIONAL SOCIETY FOR DISEASE SURVEILLANCE

An Integrated System for Enteric Disease Surveillance and Outbreak Detection

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Objective

To develop an integrated system for routine enteric disease surveillance, cluster detection and monitioring, information sharing among key stakeholders, and documentation.

Introduction

The Connecticut Department of Public Health (DPH), in collaboration with Yale Emerging Infections Program (EIP), receives funding to particpate in the Foodborne Diseases Active Surveillance Network (FoodNet) and Foodborne Disease Centers for Outbreak Response Enhancement (FoodCORE). FoodNet is an active population-based surveillance network that monitors trends for ten enteric diseases and conducts special studies to better understand the causes of foodborne illness.[1] FoodCORE develops best practices related to the detection, investigation, and control or disease outbreaks, particularly those due to to *Salmonella*, Shiga toxin-producing *E. coli*, and *Listeria* (SSL).[2] Foodborne disease surveillance and response is a collaborative effort requiring real-time data sharing between key stakeholders including: DPH Epidemiology, DPH Laboratory, DPH Food Protection Program, Yale EIP, and local health department (LHD) staff.

Methods

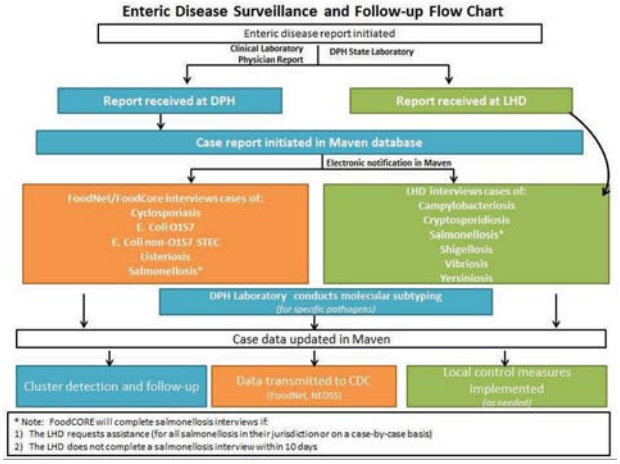
Prior to 2011, DPH and Yale EIP maintained several separate Access and Epi-Info databases to manage foodborne surveillance, disease follow-up, and outbreak management activities. Surveillance and laboaratory data were routinely reviewed to identify clusters based on demographic information or spatial/temporal clusttering. During 2011, foodborne disease surveillance and follow-up activities were migrated to Maven, Connecticut's Electronic Disease Surveillance System (CEDSS)[3]. All cases of physician or laboratory reportable foodborne illness are initiated as events in Maven. Each event contains demographic, laboratory, and follow-up information for the case. Foodborne clusters and outbreaks are also initiated as unique events in Maven; each outbreak events contains basic summary information, a repository of relevant documentation, and outcome measures data. Outbreak events are linked with associated case events. Workflows and reports have been developed to facilitate data management and analysis, and to generate automated alerts. DPH Epidemiology, DPH Laboratory, DPH Food Protection Program, Yale EIP, and LHD staff can access records in Maven to update data and to facilitate information sharing.

Results

During January 2012-June 2014 3238 enteric disease cases and 152 SSL clusters, including 16 identified outbreak events, were initiated and managed in CEDSS. During 2012 a FoodCORE student interview team was formed resulting in increased completeness of *Salmonella* follow-up from 51% (2009-2011) to 82% (2012); data management and information sharing were facilitated through CEDSS.

Conclusions

The use of a centralized electronic disease surveillance system has improved foodborne disease surveillance and outbreak detection by streamlining data management needs and improving communication and data sharing among key stakeholders. Future areas of development involve implementing electronic laboratory reporting and integrating information from the DPH Food Protection Program's foodborne complaint and restaurant inspection systems. Ongoing system evaluation is needed to continue to identify areas for increased streamlining and data sharing of foodborne disease information.



Keywords

foodborne diseases; Foodborne outbreaks; Surveillance system; Information sharing; Integrated disease surveillance

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