# The implementation of an outbreak management solution in New York State

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### Objective

To provide a flexible solution to perform an outbreak investigation by improving communications during an incident; to provide all users with a common set of data for decision support; to provide standard forms for a consistent approach and to improve data quality.

### Introduction

Most outbreaks are small and localized in nature, although it is larger outbreaks that result in the most public attention. So, a solution to manage an outbreak has to be able to accommodate a response to small outbreaks in a single jurisdiction scalable up to outbreaks that involve thousands of cases across multiple jurisdictions and to handle different types of situations with different questions and response required. To make this happen, information and resources need to be shared more consistently and efficiently to help facilitate the communication that occurs at all levels and to support day-to-day operations in order to ensure consistent use.

### Methods

During the period from early 2008 through mid-2009, representatives from many of the operational public health groups across the state worked together to identify the requirements necessary to support the improvement of outbreak management in New York. These requirements were prioritized by the project team and the highest level requirements were approved to begin the design and development of the Outbreak Management System (OMS). The system included the following features: creating a central outbreak incident to record incident level information, generating a unique identifier that can be shared across integrated applications to facilitate aggregated query and reporting capabilities with a common data set shared across the jurisdictions and program areas involved in an outbreak investigation and providing forms that are customizable for an outbreak but use standard sets of questions and a common vocabulary where possible. The OMS user guide and training were provided to those who will be using it to manage outbreak incidents.

### Results

A project charter including project mission, proposed solution, guiding principles, project scope, critical risk factors, communication plan and project team was approved in 2008. Regular project team meetings were conducted, and functional requirements and software specification documents were completed in 2009. A diagram of data flow is shown in Fig. 1. An incident screen with create, update and search utilities was designed and completed in May 2011. The incident screen collects incident, disease- and event/facility-specific data, case definition and coordinator/investigator information. Web services were applied to create basic reports (Fig. 2), including case counts by case status, county, age group and a de-identified line list extracting
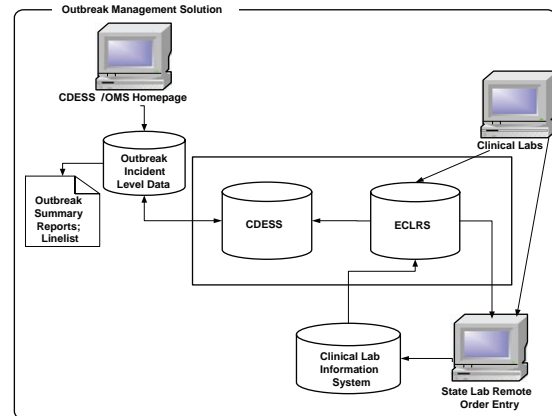


*Fig. 1.* Data Flow of Outbreak Management System.



*Fig. 2.* Screen of an Outbreak Summary/Line Listing Report.

from the Communicable Disease Electronic Surveillance System (CDESS). User acceptance testing was completed in July and webinar trainings to all users were completed in September 2011. The content and structure of food and waterborne outbreak investigation forms have been developed. The prototype of user interface for entering forms currently is under development.

### Conclusions

The Outbreak Management Solution consists of a combination of systems development, training and technical communications enhancements. The OMS will increase ability to provide timely and consistent information to the public and healthcare practitioners, to improve ability to coordinate response activities. The system will be able to answer general inquiries and generate reports and to calculate performance measures.

### Keywords

Outbreak Management; informatics; integrated system

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