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Enhancing Syndromic Surveillance at a Local Public Health Department

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Objective

To demonstrate how a local public health department used the Centers for Disease Control and Prevention (CDC) Framework for Program Evaluation and a logic model to enhance its syndromic surveillance program.

Introduction

The mission of the Maricopa County Department of Public Health (MCDPH; Arizona) is to protect and promote the health and well-being of its residents and visitors. Surveillance efforts allow epidemiologists to quantify and characterize public health threats, but traditional methods take time. In an effort to enhance situational awareness, the Office of Epidemiology dedicated resources to begin developing a robust syndromic surveillance program. This abstract outlines steps for enhancing syndromic surveillance at a local public health department.

Methods

The CDC Framework for Program Evaluation was used to systematically improve MCDPH's existing syndromic surveillance program. [1] First, stakeholders from the state and county syndromic surveillance programs were engaged. The *MCDPH Syndromic Surveillance Strategic Planning and Development Workgroup* was formed to identify existing resources, current challenges, and a unified mission. Meetings were arranged with Arizona Department of Health Services (ADHS) staff to exchange ideas for future projects. Second, a logic model was created to describe MCDPH's existing and future syndromic surveillance efforts. The MCDPH logic model was influenced by the National Syndromic Surveillance Program's logic model for enhancing syndromic surveillance capacity and practice. [2] Third, the scope of the program was focused by identifying five priority initiatives for the year. The remaining steps are in progress. Plans were established to measure outcomes of the program, evaluate progress for meeting goals, and share lessons learned.

Results

The MCDPH Strategic Planning Workgroup has been meeting bi-weekly since June 2015. The Workgroup identified goals and activities and organized them in a logic model (Figure). Using input from state and county public health officials, five priority syndromes were identified: heat-related illness, arboviral disease, drug overdose, influenza-like illness, and gastrointestinal illness. For each syndrome, Workgroup members began (1) developing technical guides for accessing and analyzing data, and (2) seeking collaborations with external entities. MCDPH is now actively involved with the following activities: CSTE Heat Syndrome Workgroup, ADHS Arboviral Syndromic Surveillance Use Case Project, and "Flu Near You" local use initiative. The Workgroup plans to review its progress quarterly and adjust activities that are not adequately achieving goals. By sharing MCDPH's experience, the Workgroup is achieving a goal to contribute knowledge to the nation-wide community of practice.

Conclusions

In MCDPH's experience, the CDC Framework for Program Evaluation was an effective tool for strategic planning, while the logic model helped focus efforts on the appropriate initiatives. In less than 3 months, the Workgroup collaborated with local, state, and national stakeholders, identified challenges faced by the existing program, prioritized goals, and launched activities to enhance surveillance for five priority syndromes. The immediate next steps will be to finalize technical guides, validate syndromic surveillance queries, evaluate progress of the program, and continue to share lessons learned with the community of practice. The authors hope that by sharing this experience, other public health practitioners will be encouraged to enhance syndromic surveillance at their local health departments.

Priorities	Inputs	Goals	Short-term Outcomes	Intermediate-term Outcomes	Long-term Outcomes
Mission To protect & promote the health & well-being of Maricopa County residents & visitors using syndromic surveillance (SyS) Vision A fully-integrated, high quality SyS program Values Data integrity Timeliness Utility Representative Cost-effectiveness	Data Providers • Poison Control Center • Emergency medical services • Hospitals • Vital Registration • Office of the Medical Examiner Data Access Tools • National Poison Data System • AZ-PIERS • BioSense 2.0 Statistical Analysis Tools • RStudio • php myAdmin • SAS	1.Improve data acquisition, quality & timeliness	Identified data sources across the continuum of care Worked with IT professionals to integrate data sources with SyS systems Regularly monitored data for completeness, validity, reliability, & utility Communicated with data providers about significance of high quality, real-time data for SyS	Improved acquisition of high-quality, representative SyS data from diverse sources across the continuum of care	Developed a seamless, fully integrated system that automatically processes & analyzes all-hazard, real-time SyS data from many data sources across the continuum of care
		2. Improve SyS utility	Established priorities for SyS program projects Developed case definitions & queries Validated & modified SyS algorithms Published epidemiological findings using SyS data Developed signals that alert public health officials to potential threats Established protocols for responding to SyS signals	Improved SyS utility for public health monitoring and response in Maricopa County Epidemiologists focused on data analysis, interpretation, and dissemination of findings	Used SyS data to identify public health threats in a timely manner; made effective proactive public health decisions; initiated public health actions; and prevented morbidity and mortality in Maricopa County citizens
		3. Maintain a sustainable SyS program at MCDPH 4. "Strengthen SyS practice" [2]	Developed a strategic plan Documented protocols used by the SyS program Evaluated SyS programs Received funding from grants Collaborated with AZ partners through multiple workgroups Collaborated with national partners through workgroups Attended national meetings to network & present Shared knowledge regarding SyS best practices	Developed a robust sustainable SyS program Improved knowledge in conducting SyS Increased sharing of documents, case definitions, & code between jurisdictions	Maintained a robust, sustainable SyS program in Maricopa County that actively reviewed and improved its internal processes; collaborated with external jurisdictions & community stakeholders; and contributed to strengthening SyS practice

Logic Model of the Syndromic Surveillance Program at the Maricopa County Department of Public Health

Keywords

Strategic planning; Evaluation; Local level

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2. Centers for Disease Control and Prevention. National Syndromic Surveillance Program Funding Opportunity Announcement Logic Model [Internet]. Atlanta (GA): CDC Division of Health Informatics and Surveillance; 2015 Mar 20 [cited 2015 Aug 31]. Available from: http://www.cdc.gov/nssp/foa-logic-model.html.

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