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The Centers of Excellence in Public Health Informatics: Improving Public Health through Innovation, Collaboration, Dissemination, and Translation

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The Centers for Disease Control and Prevention (CDC) Centers of Excellence in Public Health Informatics (CoE) program was established to advance the research and practice of public health informatics through several collaborative efforts (1). The CoE program supports the development, translation, and dissemination of informatics knowledge; and provides expertise to public health professionals to maximize the potential of information systems to improve the health of the nation. The Office of Surveillance, Epidemiology, and Laboratory Services (OSELS) funds the Centers using a Program Project Grant (P01) with each Center leading two major research projects in collaboration with local public health partners (2). Five original Centers were funded in 2005 to serve as innovative incubators for transformational public health informatics research. A new competitive announcement was released in 2009 which resulted in awards to the four current Centers: Harvard Pilgrim Children's Hospital Boston Center of Excellence, Rocky Mountain Center for Translational Research in Public Health Informatics, Indiana University Center of Excellence in Public Health Informatics, and University of Pittsburgh Center for Advanced Studies of Informatics in Public Health.

The current Centers conduct research that leverages and builds upon the developmental accomplishments achieved by the original Centers and supports CDC's goals and strategic priorities. The Centers' research strengthens surveillance and epidemiology at CDC while supporting state, tribal, and local health departments to improve the public's health (3). The Centers activities address many of the critical priorities that CDC has determined to have large scale impact on health with known and effective strategies to include obesity, healthcare-associated infections and foodborne diseases (4). This Special Issue includes two articles from each of the four Centers that highlight their recent contributions to the field of public health informatics.

Harvard Pilgrim Children's Hospital Boston Center of Excellence

Harvard's research focuses on uses of personally controlled electronic health records in the prevention, control, and reporting of chronic disease. Klompas et al. describe the utility of an electronic medical record system to augment the Behavioral Risk Factor Surveillance System

(BRFSS) and other traditional methods for diabetes surveillance. Weitzman et al. present a novel approach to monitoring preventive and self-care practices for diabetes using an online social network.

Rocky Mountain Center for Translational Research in Public Health Informatics

Utah's research activities include implementing a visual analytic and decision support system to enhance community health assessment and public health surveillance and deploying new methods and models from computer science, social and behavioral sciences and other disciplines to represent knowledge and exchange information relevant to public health practice. Staes et al. present an evaluation and analysis of Reportable Condition Mapping Tables relative to nationally defined reporting logic and recommend "using knowledge management tools to author, verify, improve, and authenticate logic, and continually incorporate improved logic that has been validated in clinical systems" (5). Xu et al. describe how their framework for collaboration leads to successful translation of their research into public health practice.

Indiana University Center of Excellence in Public Health Informatics

Indiana's research includes developing Adaptive Turnaround Document systems (computer-interpreted paper forms) to support newborn screening and immunization tracking and enhancing basic infrastructure capabilities to support public health. Downs et al. review technical challenges in exchanging data between clinicians in the Indiana Health information Exchange and the Indiana State Department of Health. Dixon et al. describe a process for developing a framework to continuously analyze public health data to improve data quality.

University of Pittsburgh Center for Advanced Studies of Informatics in Public Health

Pittsburgh's research focuses on developing Bayesian disease surveillance methods including case detection and outbreak detection and characterization and translating them into technologies for public health practice. Wagner et al. present a probabilistic, decision-theoretic system for disease surveillance and control and use the example of influenza surveillance to describe how the software components transform data collected by the healthcare system into useful data for public health practice. Tsui et al. demonstrate how a probabilistic case detection system uses emergency department dictated notes and laboratory results to compute the posterior probability of influenza and influenza-like illness.

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Conflict of Interest

The authors declare that they have no real or apparent conflicts of interest.

Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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