

Cyberinfrastructures for Public Health

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ABSTRACT

General Terms

Management, Documentation, Standardization, Verification.

Keywords

Informatics, Knowledge Management, Public Health, Networks, Surveillance, Systems, Electronic Medical Records

Background

The leading preventable causes of premature mortality are due in large measure to causes that can be changed, such as tobacco use, dietary behaviors, substance/alcohol abuse, injuries, communicable diseases. Yet addressing these major public health threats remain an acute challenge: they represent system-wide problems that would benefit network-centric approaches that have as a foundation the discovery, development and delivery of critical information. The goal of this symposium will be to explore the critical health informatics foundations that must serve as a springboard for improving the major public health challenges of our time, with the recognition that such an effort will represent and result in a fundamental transformation in the public health system as we know it. A critical theme of this panel is to assess the role of digital government in the development of these critical cyberinfrastructures.

This symposium brings together expertise from several converging fields which together represent necessary infrastructures that are needed to improve both the structure and function of the health care system.

Speakers

Scott Leischow (HHS): Vision for developing cyberinfrastructures in public health: Initiative on the Study and Implementation of Systems" (ISIS).

Brad Hesse (NIH/NCI): Conceptual and practical challenges to a health informatics infrastructure

Judith Qualters (CDC): Surveillance systems to understanding environmental influences

Helga Rippen (HHS): National Electronic Medical Record System: Relevance for Public Health

Noshir Contractor (UIUC): Developing cyberinfrastructures to enable effective networks within the public health community.

David Introcaso (AHRQ): Evaluating Cyberinfrastructures and the Social Networks They Enable

Mark Parascandola (NIH/NCI): Ethical considerations in transforming the public health informatics infrastructure

Sylvia Spengler (NSF): TBA

Symposium Summary

Scott Leischow will present an update on an initiative supported by the National Cancer Institute which explores the interplay of systems approaches (e.g. system dynamics, agent-

based modeling, econometrics, etc), social network analysis and knowledge management to better understand and improve the discovery, development and delivery of approaches intended to improve public health.

Brad Hesse, Acting Chief of the Health Communication and Informatics Branch at the National Cancer Institute, will present a conceptual framework for the development of informatics infrastructures needed to improve public health.

Judith Qualters, Chief of the Environmental Health Tracking Branch at the Centers for Disease Control and Prevention, will present on the foundation of most public health practice: surveillance. The surveillance infrastructures are critically necessary for best assuring optimal public health, and the strengths and shortcomings of this infrastructure will be discussed.

Helga Rippen, Department of Health and Human Services, is part of the team working on the creation of a national electronics medical record system that will serve as a backbone for assuring improved quality and care for all Americans. She will discuss challenges and opportunities for transforming our health care system via this cyberinfrastructure.

Noshir Contractor, Professor of Speech and Psychology, will present on the essential cyberinfrastructures needed to assure networks can be optimized for improving public health. He will discuss network analysis and development approaches used in non-health domains, and in what ways those approaches can be used to improve the nation's health.

David Introcaso from the Agency for Healthcare and Quality Improvement, will discuss the evaluation of social networks, and in what way evaluation is needed as part of the feedback loops to assure improved quality of care in a complex health care environment.

Mark Parascandola, Epidemiologist at the National Cancer Institute, will explore ethical considerations in the development and maintenance of complex cyberinfrastructures that have the potential to be used for public health tracking and quality improvement.

Sylvia Spengler from the National Science Foundation, will discuss the development of collaborative networks in the quest to improve public health cyberinfrastructures.