Public Health Informatics

Abstract

Public health informatics applies the theories and methods of computer and information science to support the work of public health organizations, which is to improve health outcomes for populations and communities. Over the past 20 years, informatics methods and approaches have helped address challenges in public health. For example, early warning information systems help public health officials identify disease outbreaks and monitor the spread of diseases, including Ebola and the 2019 novel coronavirus (nCoV). Information technologies and standards have further revolutionized data collection and exchange to facilitate management of Big Data. Analytics and visualization methods are supporting decision-making at county, state, and national levels.

This seminar describes the principles, methods, and current state of public health informatics. We examine common public health information systems and the informatics methods used to support disease outbreak detection. The seminar further explores the tools and methods used by public health organizations to manage the growing array of Big Data available to support development of health policies and the implementation of population health interventions. The seminar will use case studies as well as hands-on learning with informatics tools to analyze health data to examine and solve real-world public health challenges, including disease detection and identification of social determinants that impact population health outcomes.