Hospital Epidemiology in the 21st Century: Innovations Using Electronic Data

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Healthcare-associated infections are a major cause of morbidity and mortality. An important strategy for preventing these events is to monitor them in a systematic way and provide feedback to healthcare institutions regarding both infection epidemiology and prevention interventions. In the United States, the Centers for Disease Control and Prevention (CDC) is developing an electronic Internet-based reporting system for monitoring and preventing healthcare-associated adverse events, the National Healthcare Safety Network (NHSN). The NHSN is organized into several components that contain adverse event modules. The initial components are the Patient Safety Component and the Healthcare Worker Safety Component. The Patient Safety Component consists of three adverse event modules: Device-associated Module, Procedure-associated Module, and Medication-associated Module. Within each module are adverse events for which specific protocols have been developed for collecting and reporting appropriate data. Examples of adverse events to be discussed include central line-associated primary bloodstream infection and data on antimicrobial use and resistance. In addition to providing infection incidence estimates, data collected by the NHSN will be linked to CDC guidelines and other educational resources to create a "knowledge system" to support local and national efforts to promote safety among patients and healthcare workers.

In addition to discussing the NHSN, the speaker will review a portfolio of CDC sponsored research currently supporting the development of electronic surveillance including projects related to automated electronic reporting through secure data networks and clinical decision support systems.