A Thirty Year Journey: Successes and Challenges in Infection Prevention and Control

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The field of hospital epidemiology began in 1970 in the United States with the inception of the Centers for Disease Control and Prevention's National Nosocomial Infections Surveillance System (NNIS) and the first training course for Infection Control Professionals (ICPs). This was quickly followed by the CDC Study on the Efficacy of Nosocomial Infection Control (SENIC), which showed that hospitals with effective infection control programs reduced rates of nosocomial infection; whereas, hospitals without effective programs experienced increased infection rates.

US healthcare has changed dramatically since SENIC. Changes in reimbursement have caused a decrease in hospital admissions and length of stay. Healthcare is increasingly delivered in ambulatory, home and long term care settings. Hospitals are focused on intensive care because of increased patient acuity. These changes and the increasing demand for infection prevention and control services have encouraged ICPs to design outcomes focused infection control programs that incorporate evidence based practices. A 1990 goal for healthcare in the US was to decrease nosocomial infections in intensive care units by 10% by 1999. This goal has been met and exceeded by hospitals participating in the NNIS program, in part, as a result of the adoption of evidence based guidelines published by CDC’s Healthcare Infection Control Practices Advisory Committee (HICPAC). Successes in lowering rates of central line associated bloodstream infection and ventilator associated pneumonia in ICU’s and remaining challenges are described in this lecture.

While success has been experienced in lowering rates of device-associated infections in US ICUs the increasing incidence of infections with antibiotic resistant organisms poses a significant challenge. Solutions to this problem remain controversial even in the face of compelling evidence. Successful interventional strategies that have lowered rates of colonization and infection with two prevalent antibiotic resistant organisms: Methicillin resistant Staphylococcus aureus (MRSA) and Vancomycin resistant Enterococci (VRE) are described.