Northeastern University
Healthcare Systems Engineering Institute

NEWS RELEASE
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FOR IMMEDIATE RELEASE

HSyE Institute and Duke Medical Center Receive $2.5 million AHRQ Grant to Develop Better Methods to Detect Hospital Infection Outbreaks Across U.S.

Researchers at the Healthcare Systems Engineering Institute (HSyE) and Duke Medical Center are partnering on a $2.5 million grant from the Agency of Healthcare Quality and Research (AHRQ) to develop and test new statistical surveillance methods for detecting infection outbreaks in hospitals across the southeast United States. Hospital-acquired infections remain a significant concern in hospitals worldwide, with an estimated 722,000 infections, $9.8 billion in costs, and 75,000 in associated mortality in the U.S. annually. The 5 year R01 award will optimize methods previously developed by HSyE researchers and test their ability to detect local outbreaks earlier in a randomized study with 40 hospitals within the Duke Infection Control Outreach Network (DICON).

"This is an excellent opportunity, by partnering with leading infection control expects, to scale these methods for broad national impact on patient safety", said Dr. Benneyan, HSyE director and a national expert in healthcare systems engineering and statistical surveillance. Related methods developed by Benneyan and colleagues are widely used for monitoring infection control and patient safety data by hospitals across the U.S. and have been adopted into well-known statistical software such as SAS, Minitab, Stata, SPSS, and others. Preliminary analysis by the Northeastern-Duke research team applied similar methods to 10 years of historical data and detected every known outbreak 1-8 months faster than current practice, as well as previously unknown outbreaks, which combined could significantly reduce patient harm, costs, and mortality. The current award now will prospectively test these methods in a randomized blinded study to evaluate their benefits when used in real-time and on a larger scale.

The HSyE Institute focuses on improving healthcare through research, application, and education in systems engineering methods. HSyE houses five federally-awarded centers, multi-institution grants and contracts, and undergraduate through postdoctoral training programs, with core funding from the National Science Foundation, National Institutes of Health, Veterans Administration, Centers for Medicare and Medicaid, and AHRQ. DICON is a collaboration between Duke and 40 hospitals across 5 states to improve infection control, analyze comparative data on nosocomial infections, identify trends and areas for improvement, and help hospitals develop state-of-the-art programs.

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