NIH PRAGMATIC TRIALS COLLABORATORY

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Intelligent Stewardship Prompts to Improve Real-Time Empiric Antibiotic Selection for Patients Trials for Abdominal and Skin and Soft Tissue Infections (INSPIRE)

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ClinicalTrials.gov Identifiers
INSPIRE-ASP Trial for Abdominal Infections: NCT05423743
INSPIRE-ASP Trial for Skin and Soft Tissue Infections: NCT05423756

ABSTRACT

The INSPIRE Demonstration Project consists of the INSPIRE-ASP Trials for Abdominal and Skin and Soft Tissue Infections, 2 cluster randomized trials using personalized clinical decision support to improve judicious antibiotic prescribing for non–critically ill patients hospitalized with abdominal infections or skin and soft tissue infections. More than half of non–critically ill patients with these infections receive extended-spectrum antibiotics, though fewer than 5% have an antibiotic-resistant pathogen. The goal of the trials is to advise physicians to prescribe either standard-spectrum or extended-spectrum empiric antibiotics on the basis of an algorithm that estimates each patient's personalized probability of having an antibiotic-resistant infection. This personalized probability is based on routinely collected patient information in the electronic health record (EHR) and the local prevalence of resistant organisms in abdominal or skin and soft tissue infections. The trials will compare routine care under hospital-based antibiotic stewardship programs with an enhanced program using the predictive algorithm plus audit and feedback to reduce unnecessary empiric prescribing of extended-spectrum antibiotics. The study team will first develop disease-specific prediction algorithms for abdominal infections and skin and soft tissue infections. The study team will then integrate the predictive algorithm into the computerized provider order entry (CPOE) system to prompt physicians when the antibiotic they select is discordant with the estimated need for that antibiotic. Physicians will be prompted to use a standard-spectrum antibiotic when the risk of an antibiotic-resistant infection is low. More than ninety hospitals have been randomly assigned to routine care or to the CPOE prompt intervention plus audit and feedback. The 18-month study will evaluate approximately 53,000 patients with abdominal infections and approximately 37,000 patients with skin and soft tissue infections. The trials will evaluate the ability of the intervention to reduce unnecessary extended-spectrum antibiotics while maintaining good clinical outcomes as measured by length of stay and transfer to an intensive care unit. The methods will be readily applicable to other EHR-based prescribing systems.