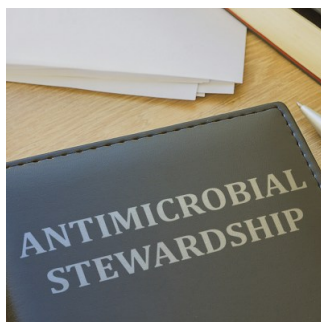

INSPIRE Trial: Improving Antibiotic Selection for Pneumonia



Over 1.5 million adults are hospitalised in the U.S. each year due to pneumonia, with about half of them receiving unnecessary extended-spectrum antibiotics. This overuse contributes to the risk of antibiotic resistance and other adverse effects. Current strategies to improve antibiotic prescribing mainly focus on shortening the duration or de-escalating antibiotics after test results. However, there's a need to address unnecessary extended-spectrum antibiotic use before results are available.

A study evaluated the INSPIRE antibiotic stewardship bundle, which includes computerised provider order entry prompts (CPOE), education, and feedback to reduce unnecessary antibiotic prescriptions for pneumonia patients.

The study aimed to assess if computerised prompts in the provider order entry system, offering individualised risk estimates for multidrug-resistant organism (MDRO) infections, could decrease the use of extended-spectrum antibiotics in non-critically ill patients admitted with pneumonia.

The study included 59 community hospitals across the U.S. and 96,451 adult patients admitted with pneumonia. It compared the impact of a CPOE stewardship bundle, including education, feedback, and real-time MDRO risk-based prompts, to routine stewardship in non-critically ill adults (aged 18 years and above) hospitalised with pneumonia. The trial consisted of an 18-month baseline period from April 1, 2017, to September 30, 2018, followed by a 15-month intervention period from April 1, 2019, to June 30, 2020.

The primary outcome was the number of days patients received empiric extended-spectrum antibiotics during the first three days of hospitalisation. Secondary outcomes included the days of therapy for empiric vancomycin and antipseudomonal antibiotics. Safety outcomes examined the days to transfer to the ICU and the length of hospital stay. The study compared differences between baseline and intervention periods across different antibiotic stewardship strategies.

When the group using CPOE prompts was compared with routine stewardship, there was a 28.4% reduction in the days patients received empiric extended-spectrum antibiotics. Safety outcomes, including mean days to ICU transfer (6.5 vs. 7.1 days) and hospital length of stay (6.8 vs. 7.1 days), did not show significant differences between the routine and CPOE intervention groups.

The study found that in non-ICU settings, hospitals utilising education, feedback, and CPOE prompts to recommend standard-spectrum antibiotics for low-risk MDRO infection patients saw significantly reduced use of empiric extended-spectrum antibiotics among adults admitted with pneumonia compared to those employing routine stewardship practices. However, no changes were observed in hospital length of stay or days to ICU transfer.

Source: [JAMA](#)

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