Pharmacists Impact C. diff Infection Rates Using AI Predictive Surveillance

CLOSTRIDIODES DIFFICILE (C. DIFF) INFECTIONS ARE A PROBLEM IN YOUR HOSPITAL

About 500,000 C. diff infections each year are responsible for 29,000 deaths

C. diff is responsible for $4.8 billion in costs each year

786 hospitals have been penalized under the HAC reduction program in 2020, and C. diff is a leading culprit

PREDICT AT-RISK PATIENTS SOONER TO IMPROVE PREVENTION AND TREATMENT

BEFORE AI: Patients at high risk of C. diff infection (CDI) are difficult to detect, and patients with CDI can go undetected by clinicians until days later.

CURRENT PRACTICE: REACTIVE Patient Management

TODAY, WITH AI: Having a CDI Risk Score as a factor in assessing a patient’s risk for C. diff will direct clinicians to begin the appropriate care for the patient, and the appropriate protection for staff and families, as soon as possible.

Timeline of C. diff Infection

Admission  Infection  Symptoms  Testing  Lab Confirmation  Isolation  Treatment for Infection

PREDICTIVE SURVEILLANCE: PROACTIVE

Target Modifiable Risk Factors

PPI—proton pump inhibitors
High-risk antimicrobials
Laxative use

Negative Impacts of Hospital-Acquired CDI:

For Patients:

Longer lengths of stay
Higher mortality
Higher readmission rates
Higher total cost of care

And Hospitals Face Potential Financial Penalties and Pressures:

Hospital-Acquired Condition Reduction Program
Value-Based Purchasing Measures

ARTIFICIAL INTELLIGENCE—A GAME CHANGER FOR TARGETING C. DIFFICILE INFECTIONS IN HOSPITALS

An AI model that works requires clinical expertise (AMS pharmacists, epidemiologists and physicians) and data science innovation to identify and validate key patient variables (labs, vitals, dosage, duration, etc.).

AI has the power to continually assess a range of interactions between key variables to come up with a more precise CDI Risk Score that updates in real time as a patient status changes during hospitalization.

Once scores are calculated and high-risk patients are prioritized, clinicians receive evidence-based recommendations to begin treating those high-risk patients.