

At a Glance

Organization

WellStar Health System
Marietta, Ga.

- 60 practice locations
- Five urgent care centers
- Five hospitals ranging from 83 to 633 licensed beds
- Four EDs
- 62,000 inpatients
- 1 million outpatients
- 255,000 ED visits

Solution Spotlight

- Horizon Expert Orders™

Critical Issues

- Patient safety
- Compliance with evidence-based medicine
- Reducing costs

Results

- Enhanced compliance with sepsis guidelines
- Reduced cost per case by 4%
- Reduced mortality of sepsis patients, saving more than 15 lives

WellStar Health System Reduces Sepsis Infections and Improves Patient Safety with CPOE

To increase compliance with the “Surviving Sepsis Campaign,” WellStar Health System deployed a **computerized physician order entry (CPOE)** solution in the emergency department (ED) of its WellStar Kennestone Hospital. The ED decreased the risk-adjusted mortality index by 17% and length of stay by 10% while also saving the lives of an estimated 15 sepsis patients.

Challenges

Headquartered in Marietta, Ga., WellStar serves a diverse and rapidly growing regional population of more than 600,000. To meet care demands, clinical leadership has long tapped into the power of information technology (IT) to improve patient safety and drive greater efficiency of care.

A particular area of concern was diagnosing and delivering appropriate care to patients with sepsis. This deadly infection is the 10th leading cause of death globally and has a mortality rate of 30% to 60%. Approximately 750,000 new cases emerge each year, resulting in 210,000 fatalities.

“Statistics show that a majority (73%) of sepsis cases are initially admitted through the ED, making early intervention vital to effective care,” explains Jonathan Morris, M.D., medical informatics officer, WellStar Health System.

To ensure that sepsis patients received appropriate antibiotic therapy, WellStar’s leadership sought tools to increase compliance with the national “Surviving Sepsis Campaign.”

Answers

WellStar Kennestone is a busy suburban medical center with ED patient volumes exceeding 110,000 annually. The ED had already shifted to a largely paperless workflow through the implementation of Horizon Emergency Care™, McKesson’s ED information system, and Horizon Expert Orders™, McKesson’s CPOE solution. ED leadership believed leveraging this technology would help improve outcomes for patients presenting with sepsis.

Sepsis bundles (groups of interventions related to a disease process) were deployed in ED CPOE content along with a comprehensive clinical process to improve the selection and timely administration of antibiotics for patients with sepsis.

CPOE also automated the task of selecting appropriate broad-spectrum antibiotics for varying types of sepsis. Instead of consulting a preprinted form or relying on memory, attending physicians ordered an antibiotic regimen by selecting the order corresponding to the clinical presentation, such as “sepsis, unknown source, penicillin-allergic.”

Case Study

"CPOE not only allowed us to implement a successful sepsis improvement campaign, but also provided us with the data to accurately judge both how well the program worked and what it achieved for our patients."

*Jonathan Morris, M.D.
Medical Informatics Officer
WellStar Health System*

"It's very difficult for physicians to carry all of that information around in their heads," says Dr. Morris. "With CPOE, physicians no longer have to remember to order the correct antibiotics because the needed information is right in front of them. They simply click the appropriate outline, and the right antibiotic in the right dose is ordered for the patient."

Access to the critically important knowledge required to manage a specific disease process was well-received by physicians and drove improved compliance with sepsis antibiotic selection.

"Consensus-driven content provided by the Surviving Sepsis initiative, combined with guidelines developed by WellStar's own sepsis committee, ensured these interventions continued without interruption when the septic patients moved into the intensive care unit," notes Dr. Morris.

Results

By implementing sepsis bundles, WellStar achieved substantial improvements in both patient safety and cost reductions. The hospital's mortality ratio for sepsis fell from 1.31 during 2007 to 1.14 in 2008, resulting in an additional 13.4 lives saved. The ratio fell even further in the first quarter of the following year to .95, reflecting 15.59 lives

saved. Cost per case for diagnoses of severe sepsis declined by 4%, while diagnosis of septic shock was reduced by 8%.

To help keep the program on physicians' minds, WellStar gave them access to Web-based presentations that showed statistical data drawn from the CPOE system. That data helped drive physician compliance with the program by demonstrating the effectiveness of the guidelines.

WellStar plans to extend CPOE to all hospital EDs by November 2010. The first inpatient pilot is scheduled for January 2010 with mandatory adoption and order entry within two years at each site.

Dr. Morris concludes: "CPOE not only allowed us to implement a successful sepsis improvement campaign, but also provided us with the data to accurately judge both how well the program worked and what it achieved for our patients. This success has positioned us for broader CPOE deployment across the rest of the organization."

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