Case Study

Redesign of Emergency Department Saves Washington Regional $4.2 Million

Washington Regional Medical Center in Fayetteville, Ark. provides medical care to the residents of Fayetteville and northwest Arkansas — the sixth fastest growing metropolitan statistical area in the nation. As the major health care provider in the area, Washington Regional has a busy emergency department. In 1998, the hospital initiated plans to build a new replacement medical center with an expanded emergency department to better meet the needs of its community.

In preparation for its move to the new hospital facility, Washington Regional called VHA's emergency department consulting team to conduct an assessment of its existing ED operations. The hospital's goal was to identify strategies and best practices to improve service delivery, increase patient satisfaction and reduce delays. A major recommendation resulting from the VHA analysis was to obtain an ED information system to enhance clinical documentation and improve billing and reimbursement.

Washington Regional's emergency department selected the ibex PulseCheck® emergency department information system from VHA supplier and Rosemont, Ill.-based ibex Healthdata Systems. The system helps emergency departments improve patient flow, increase the efficiency and accuracy of charge capture, improve access to medical information and reduce medical errors.

As a result of the departmental workflow redesign, Washington Regional was able to improve patient flow, reducing wait times and increasing patient satisfaction. In addition, by implementing ibex PulseCheck, the department saw financial and operational improvements during the first year of operation, including:

- Saving $100,000 by eliminating forms, transcription services and the time it takes to pull medical charts.
- Capturing more than $3.9 million in additional facility and professional charges.
- Recouping $208,000 in facility charges.
- Reducing patient wait times from two to three hours to 30 minutes.
- Reducing the time to draw patients' blood from 30 minutes to two minutes because the system's patient tracking revealed that a phlebotomist was needed in the ED.
- Increasing patient satisfaction by 6.3 percent.
- Reducing over- and under-coding errors from 25 percent to less than 5 percent.
- Gaining overall efficiencies, which minimized the need for additional staff due to the increasing patient volumes.

Member Profile

Washington Regional Medical Center
Fayetteville, Ark.

- VHA Partner-controlled facility
- Part of a comprehensive health care network that includes a hospital, ambulatory surgery center, long-term care and assisted living facilities, kidney dialysis centers, a rehabilitation hospital and a network of clinics and outpatient diagnostic services
- 233-bed medical center
- Included in *Modern Healthcare*'s 2003 listing of Consumer Choice Award winners
- Treated 52,000 emergency department patients in 2003

Emergency Staff Prepares for New Facility, Heavier Volume

Washington Regional's emergency department staff wanted to address overcrowding and improve patient flow through the department, as well as enhance documentation to reduce coding errors and increase reimbursement. Improving ED patient satisfaction was also critical to the hospital's success because with 45,000 visits in 1998, the ED was the entry point for 48 percent of hospital admissions. Finally, staff fully expected emergency department patient visits to increase once it moved into its new facility and recognized the need to implement new processes and technology to meet increased patient demand.

As a result of implementing ibex PulseCheck in its emergency department, Washington Regional saw a $4.2 million net ROI in less than 12 months.

The department faced many challenges.

"Our documentation wasn't reflecting the level of care our patients were receiving in the ED, and our patient wait times were two to three hours," said Becky Magee, vice president and chief information officer for Washington Regional.

Because they could not capture all of the interventions a physician and nurse performed in caring for patients, the ED was missing the opportunity to receive full reimbursement from payers.

"To help with our existing issues and prepare for our new facility, we contracted with VHA for a clinical efficiency study to look at our patient flow, communication issues and documentation," said Mark Cameron, M.D., medical director of Washington Regional's emergency department. "During the year-long study, VHA especially helped us with moving less critical patients in and out of the ED."

While the ED had improved getting patients treated and discharged, it still needed an information system to capture patient information. This system also would help:

- Improve reimbursement
- Reduce wait times and improve patient flow
- Obtain analysis tools for management decision making
- Reduce coding errors
- Decrease supply costs

Purchasing the Right Software System

The hospital needed to find an information technology vendor because its existing IT vendor did not offer a fully integrated EDIS. The system lacked level-based visit charging, CPT-4 physician levels tied to documented care and medical/legal risk flags during documentation.

Before reviewing vendor options, hospital leadership formed a decision-making team that included the health system's CIO, ED chief medical officer, and the ED director. To receive input from outside the department, the team added a physician informaticist who provides post-ED care and admits many ED patients to the hospital. Together, they developed a list of operational challenges facing the department and how these challenges affect business.

The team received seven responses from its requests for proposals. After reviewing the software systems from its two finalists, the team selected ibex PulseCheck because it is a Web browser-based system, making it easy to integrate with the hospital's existing information systems. In addition, ibex PulseCheck had a proven track record with other VHA member hospitals.

To put it simply, "ibex PulseCheck is the simplest system out there," said Cameron.

Before purchasing the software, the department conducted a detailed analysis to convince the hospital's board of directors that spending $450,000 on the system was a good investment. The team projected a conservative $350,000 return on investment within 14 months, and the board approved the requisition.

Implementing the New System

According to Washington Regional's staff, the information system is straightforward, intuitive and easy to use. In addition, the ibex PulseCheck implementation team assisted with training, which was held in multiple sessions over a period of four days and three shifts.

"If you are computer knowledgeable, you can learn how to use the system in about an hour," said Cameron. "Some of our new residents became functional in 45 minutes."

The system was implemented in the existing hospital in April 2002, four months before the new medical center facility opened in August 2002. According to ED Director Becky Pratt, it took a total of six months for the staff to fully adjust to the new system.

"Keep in mind that our staff learned a new system and moved into a new facility within four months," Pratt said. "We went through a tremendous amount of change."

Exceeding Expectations

Washington Regional exceeded all of its goals, especially the projected return on investment. While hoping to see a $350,000 ROI in 14 months, the ED reduced costs by $100,000, recouped $208,000 in facility charges and captured more than $3.9 million in additional charges. Net improvement was $4.2 million in less than 12 months.

Magee expects ibex PulseCheck to continue to improve the emergency department's financial performance since the system helps to better capture patient care data and associated charges. The system also helps management identify delays and locate patient flow bottlenecks by accounting for every minute of their stay.

Before implementing the program, patient wait times from triage to a bed were two to three hours. ibex PulseCheck helped management identify the need for bedside registration, which reduced average patient wait times to 30 minutes. The system also showed that laboratory blood draws took too long, so a phlebotomist was placed in the ED, reducing the 30-minute lab time to two minutes.

"VHA's analysis pointed out many areas to improve flow from triage to discharge, but the main recommendation was to develop a good tracking system," said Cameron. "This information allowed hard data for decisions as opposed to anecdotal examples or gut feelings."

As a result of implementing process changes and automating the ED, the hospital saw patient satisfaction increase significantly. In August 2002, the patient satisfaction score with the ED was 77. The ED wanted to achieve a score of 80.4 by mid-year 2003. But, by July 2003, the score was 83.4, an improvement of 6.3 percent.

According to Pratt, nursing satisfaction has increased, too. "Nurses like the challenges of emergency nursing, and they have been very impressed with the technology that helps them do their jobs," she said. "Our whole approach has been good for recruiting."

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Continuous Improvement

After moving into its new facility, Washington Regional found that its annual emergency department patient volume was greater than anticipated. The staff projected that patient volume would increase from 49,000 to 50,000, but volume actually jumped to 52,000. Management appreciated its new information system to track patients, clinically document and code charges while improving care and patient safety and reducing overcrowding.

In early 2004, the Joint Commission on Accreditation of Healthcare Organizations visited Washington Regional to review the emergency department and how it manages large numbers of patients. JCAHO is now using the Washington Regional's ED as an educational site in teaching hospitals how to handle overcrowding, and it is featuring it in one of its training films.

For more information, please contact VHA at (800) 842-5146 or *vhacustomerservice@vha.com.*

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