

Managing Emergencies

Rapid return on investment highlights ED automation at Daughters of Charity Health System.

by **Richard Hutsell and Michael Day**

According to a report by the Institute of Medicine on the future of emergency care in the United States, hospitals diverted more than 500,000 ambulances, averaging one per minute. The report concluded that the majority of the nation's emergency departments are overburdened, underfunded and underprepared for potential disasters. Yet with clinicians and funds often in short supply, emergency department automation technology has enabled several facilities to become more efficient, reduce patient wait times and increase revenue.

When the Daughters of Charity Health System (DCHS) implemented our emergency department information system (EDIS), we had many expectations. These included enhanced patient care, increased patient and physician satisfaction, and improved efficiency and productivity. We also expected a return on investment (ROI) within a reasonable three-to-four-year time period.

Surprisingly, the system paid for itself in less than one year because of increased ED charges resulting from improved documentation. An independent benefit validation report by First Consulting Group estimated that the potential increase in gross revenues from January to December 2005 was between \$36 million and \$42 million across the organization.

Wide range of care settings

The Daughters of Charity Health



Richard Hutsell

System, based in Los Altos Hills, operates six facilities spanning the California coast from San Francisco Bay to Los Angeles. Formed in 2001, DCHS is built on 150 years of tradition of high-quality Catholic healthcare service in the United States. Our facilities range from an inner-city hospital to community hospitals in urban, suburban, and rural settings.



Michael Day

Our strategic IT plan called for an increased focus on clinical systems. Until our EDIS project, our core clinical system exposure was limited to the traditional pharmacy, laboratory, and radiology systems. With more mature clinical products now available, we wanted to leverage this technology to proactively deal with critical issues such as patient safety and patient care quality.

After analyzing clinical automation possibilities, we decided that the ED would be an ideal test bed and reflect what we might expect with larger clinical systems. We decided to automate ED care first for several reasons:

- ▶ With more than 161,000 visits annually, ED care is central to our mission.
- ▶ It is a high-impact revenue area.
- ▶ Since many emergency patients are admitted as inpatients, our ED is, in effect, the "front door" of the hospital.
- ▶ It is a controlled environment with contracted physicians.
- ▶ ED offers the ideal test for clinical automation because it deals with every type of care, from minor injuries and illnesses to cardiac arrests and critical care patients.
- ▶ The community's perception of our hospitals is often based on an ED experience.

In addition, in the near future, we plan to implement a computerized provider order entry (CPOE) system, and the ED is a good place to start CPOE.

Extensive evaluation

Before selecting an EDIS partner, we conducted an extensive evaluation of all available products. After examining 10 different vendors and completing several rounds of demonstrations, scored valuations, and site visits, we selected the **ED PulseCheck system from Wakefield, Mass.-based Picis.**

The primary reasons that ED PulseCheck was chosen were its system architecture, performance, and Picis' ED expertise. Because ED PulseCheck is a Web-based system, it deploys easily. In addition, our physicians and clinicians were familiar with Web-based tools, which made it easier to use. Another key factor in the selection was the number of successful implementations of the ED PulseCheck product.

We knew that successfully implementing a clinical information system posed a fundamentally different challenge than implementing business and administrative systems. In order to succeed, it would require process changes, the commitment of clinical staff, and widespread physician adoption.

In addition to these general challenges, we also faced institution-specific challenges.

- ▶ We needed to implement the system in six hospitals in a very aggressive timeframe.
- ▶ IT functions were already outsourced to Perot Systems, which brought another party into the mix.
- ▶ There was a need to interface with a number of legacy systems, including some facility-specific products.

Our success in dealing with these challenges centered on three key initiatives: First, we assembled a strong project team that included an experienced project manager; two highly skilled project analysts; and representatives of ED physicians, nursing, and other impacted disciplines. Second, we solicited and received excellent executive support, which is absolutely imperative for a project

like this. Third, we realized that we couldn't succeed without good communications, and we were diligent in communicating with all parties involved, including staff; other affected areas within the health system such as HIM, laboratory, and radiology; and Picis and Perot Systems.

Phased implementation

The system was installed in five phases at each hospital: (1) tracking and triage, (2) nursing documentation, (3) physician documentation, (4) order entry, and (5) charges. The length of time between each phase was approximately two months.

Since we were bringing together teams from six different facilities, we

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took the approach that we needed standardization but also had to offer site-specific flexibility. In addition, we performed a risk assessment of the individual groups involved in each phase of installation and tailored our training, implementation time, and support services accordingly.

We also identified physician leaders who acted as internal consultants. Not only did this prove valuable in helping to predict and overcome physician acceptance challenges, but also in identifying additional functionality that was added to the product by Picis during the implementation.

Another important decision we made was to not skimp on technology. We thought it was essential that we provide users with the best tools

for the job and enough devices so that there is no queuing or contention for workstations. The technology choices we made included:

- ▶ Multiple workstation types, including in-room workstations, tablet PCs, and computer-on-wheels stations.
- ▶ A variety of input options, such as keyboard and touch screens. We also introduced Dragon voice recognition, which 70 percent of our physicians are now using to annotate templates.

At our central data center, we also installed a redundant system that is optimized for performance and uptime. Our downtime is expected to be only 360 minutes per year for patches and upgrades.

Increased revenues

By far, the biggest financial benefit of implementing ED PulseCheck was our increase in revenues. This was due to three factors:

- ▶ Charges are captured as services are delivered. Two facilities have seen gross charges per case rise by more than \$600.
- ▶ There has been a reduction in the number of lost charges in comparison to manual processes. The system's documentation now automatically generates evaluation and management codes.

We have had excellent physician participation in our online documentation effort. This is expected to reduce transcription costs by more than \$850,000 for 2006.

The project did not end with the "go-live" date. In the ever-changing world of clinical care, it is important that our EDIS continue to improve and evolve. Implementing change is easy. Staying changed is harder.

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