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Patient Safety

**Comprehensive
Automation in the ED**

**Recovering Millions
in Underpaid Claims**

**HIM Embraces
Speech Recognition**

ED on Track With IT

Pennsylvania emergency department computerizes order entry, documentation and charge capture to increase efficiency, reduce length of stay and grow its business.

Emergency department (ED) visits are up 26 percent in the last 10 years, according to the Centers for Disease Control and Prevention. Altoona Hospital is no exception, seeing its ED visits climb to a record high over that time as the number of patients and the complexity of their illnesses increased. To handle the volume, move the patients along faster and increase revenue, we acquired an emergency department information system (EDIS) as we upgraded our services.

Problem

Altoona Hospital, a 346-bed hospital in Altoona, Pennsylvania is located in an isolated area 90 miles east of Pittsburgh and one hour from the nearest trauma center. In 2001, our ED of approximately 50 clinicians handling 38,000 patient visits annually, was losing revenue because patient charges were not being documented and staff had a difficult time tracking supplies. We also needed to get patients in and out of the department faster. Our problems were about to intensify because the hospital had applied for Level II Trauma Center status and planned to increase the patient volume to 45,000 over a four-year period.

All nursing documentation in the ED was handwritten so staff vied to get their hands on patients' charts throughout the day to record nursing assessments, procedures, and medication orders or to look up test results. Since paper records could only be viewed by one person at a time, this caused unnecessary delays while staff searched

for records or waited until they were available. For ordering labs, physicians used check boxes on paper templates and wrote any that were missing. Secretaries then sent orders to lab and pulled test results off the printer to put on a rack for physicians to view once all were available. If the printer jammed or only *some* of a patient's tests results were ready, both the patient and physician would wait unnecessarily.

Physicians documented patient care by dictation, recording notes by phone. Transcriptionists typed these records, filling physicians' mailboxes with patient charts of transcribed notes. If a busy doctor overlooked a detail during treatment, the chart did not reflect it, which posed legal and medical risks. And if a physician did not review

transcribed notes before signing them, he risked missing a glaring transcription mistake in documentation.

Lost charges could also be tied to documentation. Nurses who recorded all chargeable supplies, medica-

tions and procedures on separate charge sheets felt they were capturing all charges, but it was hard to measure. Two to three full-time medical coders reviewed charts and added any that were missed before sending them to billing; however, many still slipped through because of illegible handwriting and incomplete documentation.

The average length of stay for patients in the ED was 3.6 hours, higher than the average 3.2 hours patients spend in emergency departments, according to the CDC report. To improve efficiencies and communication, our emergency department needed a comprehensive information system to accommodate more patients, improve patient flow and provide reports.

When we began capturing charge data electronically at the point of care, we doubled our capture of charges monthly from \$800,000 to \$1.6 million.

Source

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Product/Company

Ibex PulseCheck
Picis Inc.
Rosemont, Ill.
www.picis.com

Solution

As part of our upgrade to Level II Trauma Center status in 2000, we hired a new ED director and assembled a team of nurses and physicians to research information systems that could help us deliver better care and improve documentation and tracking. After talking to users and reviewing systems over a six-month period, in January 2001 our team selected Ibex PulseCheck of

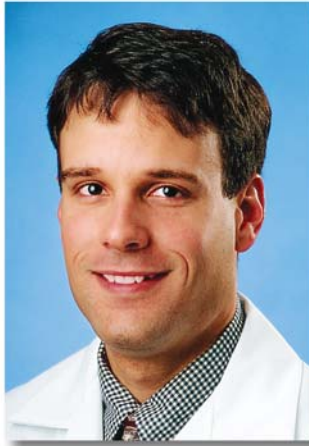


Emergency Department Information Systems

What Works

the Rosemont, Ill. division of Picis Inc. because it is Web-based and user friendly. With it, our clinicians could track patients from triage to disposition and document and capture charges electronically. Our physicians felt confident that since the software was designed by an emergency medicine physician for the ED, it would meet our needs. Plus, we liked that we could access the system from home, other parts of the hospital or almost anywhere using the Web.

In the summer of 2001, we began a multiphase approach to implementation. We created super users within the ED including two physicians, the charge nurse and a few others who gained a high level of knowledge and became administrators of the system. The Ibex PulseCheck implementation team trained groups of nurses, physicians, technicians and registration staff prior to go-live, demonstrating how each would use specific features for their areas. The nurses were the first to go live in June. While moving work areas and re-designing the emergency department for greater capacity, nurses began using online patient tracking and nursing documentation. Once they got used to it, they loved the electronic record because it created a much more detailed chart, gave them access to prior patient visits and was legible and easily accessible.



Matt Boucharde, M.D.

In November, the ED went live with physician order entry and then phased in electronic physician documentation and discharge instructions—initially for fast-track patients and later for more complicated patients. Interfaces between Ibex PulseCheck and the hospital's information system, and features such as order sets and physician shortlists provide easy online ordering. When test results are available for patients, flags appear on tracking screens to keep everyone updated and reduce downtime since doctors usually need to act on these results. Our physicians use customized templates and system prompts for electronic documentation to ensure we respond in patient records based upon risk. Despite physicians' concerns about online documentation taking longer than dictation and reducing the quality of charts, it did the opposite.

When Ibex PulseCheck's charge management module was complete in the fall of 2002, we phased in these features and linked nursing documentation to the charge master and billing. We got an unexpected and pleasant surprise when billable charges skyrocketed following implementation of these features.

This year, we began beta testing the Ibexpen, which allows us to chart the patient encounter on paper at the bedside, using a specialized pen that captures the content digi-



tally. The pen is then placed in a cradle that transfers the data into Ibex PulseCheck computerized documentation. Notes are easy to pull up later and look the same as records documented on a computer.

Results

Our emergency department had an initial return on investment in six months by saving \$175,000 in coding and dictation costs a year when we reassigned our five-member dictation team to other departments. Plus, when we began capturing charge data electronically at the point of care, we doubled our capture of charges monthly from \$800,000 to \$1.6 million. This also helps reduce denials for reimbursement and allows us to bill payers faster.

We achieved our goals of increasing patient visits, and now our ED easily accommodates 47,000 ED visits a year—up from 38,000 in 2001. As a result of a merger, we also have extended the EDIS to a second hospital nearby that handles an additional 15,000 ED visits a year.

We get lab and radiology results back more quickly on patients and records are kept in one place, eliminating duplication and protecting patients' privacy. Multiple users can document on one patient at the same time, which moves patients through the facility faster. Average length of stay within the ED has decreased from 3.6

hours to 2.3 hours. Electronic documentation also saves an additional \$50,000 a year in paper costs.

Approximately 100 nurses, physicians and part-time staff now use the EDIS. New staff can be trained quickly, within 30 minutes to an hour, now that the core group knows how to use the software. Within two or three shifts, new physicians are up to speed and can track patients, document online and enter orders quickly so they can see the same number of patients as more experienced users of the system.

This automation has helped improve the detail and accuracy of nursing and physician documentation, promoting patient safety and minimizing the risk of litigation. It also tracks and measures physician and nurse productivity and makes reporting a snap. Before the EDIS, we compiled only basic statistics such as length of stay and this was very time-consuming. Now we report physician performance, acuity by nurse, acuity by physician, 14-, 48- and 72-hour callbacks and all kinds of information, and when JCAHO visits, we use Ibex PulseCheck reports instead of pulling medical records or being concerned about incomplete documentation.

The results have been remarkable, and we look forward to seeing the system evolve to include even more risk management so we can provide greater patient safety.

HMT