Saying Good-bye to the White Board

New technology makes emergency departments more efficient

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WHY HAS I.T. FAILED to deliver in the Emergency Department (ED)? The ED offers tremendous opportunity for improving care, service, and cost-effectiveness, yet IT has yet to make meaningful inroads. A new breed of system offers the potential for success in this life-saving department.

A recent report from the Centers for Disease Control and Prevention indicates that trips to emergency departments (EDs) rose 20 percent over the past decade. Another study from the American Hospital Association indicates that 62 percent of hospitals are at, or over, operating capacity. That number jumps to 90 percent for Level 1 Trauma Centers and larger (300+ beds) hospitals. These statistics indicate the extreme pressure healthcare providers suffer in the extremely complex, quick-response environment of the ED. The outcome is often life or death, but access to critical information is frequently limited. Healthcare providers must triage, determine and provide treatment, specify follow-up care, while simultaneously work toward the best medical outcome and the best possible service to patients.

In this real-time environment, traditional management tools have focused on keeping track of patients, their medical needs, and their healthcare providers by using a manual "white board". With most information provided on paper and by word-of-mouth, the white board is an apparently reasonable choice. In today's medical world, however, with so much information already available on computers, this approach completely ignores such valuable information. It is subject to all the problems of any manual system—human error, legibility, timeliness, and no permanent record remains for follow-up afterwards. As workloads increase, along with the need for more information, these problems increase exponentially and the performance of the ED deteriorates.

Essentially, the white board focuses only on operational management, and it is flawed even in this area. Information available in other systems that could help diagnosis, triage, and planning follow-up care for patients is handled quite ineffectively. "First generation" IT systems targeting the ED generally failed to help the clinical team, because they were designed to deliver information to the hospital's administrators rather than being a patient management tool designed for the caregivers. Frequently, these systems are hard for the already overworked staff to learn; demand duplicative data entry; and require a substantial investment of time and effort for training. Medical professionals have routinely not seen sufficient benefits to counter the cost and effort, and therefore, have not supported them. Needless to say, this has routinely led to abandonment of these systems in practice.

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Newer and better systems are beginning to appear, which seek to address both clinical and administrative needs. They integrate with other hospital systems to provide timely access to important medical information about patients and the hospital's resources. This promotes better outcomes as well as supporting scheduling of care by other hospital departments, whether for immediate or follow-up treatment. They provide automated support for triage and operational management, achieving what the white board cannot without requiring extra clinician effort or time. They promote management analysis, planning and documentation, allowing for service and quality improvements, and providing lasting evidence for regulatory and quality purposes. For all of these benefits, they are still easy to learn, easy to use, and quick to install.

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This "best of all worlds" outcome comes from a few basic achievements. First, rather than force administrative changes on clinicians, the systems have been designed by clinicians, and they are set-up to be easily adapted to whatever operational design a hospital has found to be effective. Second, they have been built using flexible Web-based tools that allow for rapid customization and integration with existing hospital systems. System and human interfaces can be quickly optimized and customized for a given hospital and its ED. Thirdly, they have been field-tested in demanding ED environments to assure that all of these features play-out in the real world successfully. The benefits in quality of care, patient service, clinician satisfaction, and cost effectiveness are just too great to ignore, now that systems are available that can actually provide those results.

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An example of one such application has been developed to meet the challenges of providing care in an ED setting is ED Dashboard, offered by Forerun, Inc. The technology behind Forerun was developed by doctors with extensive experience of emergency-room operations. The early pioneers were Dr. John Halamka, now Chief Information Officer of Harvard Medical School, and Dr. Richard Wolfe, Chair of the Emergency Department, and Dr. Larry Nathanson, Director of Emergency Medical Informatics, both of the Beth Israel Deaconess Medical Center (BIDMC). Through its evolution at BIDMC, a teaching hospital for Harvard Medical School in Boston, it has enjoyed a six-year success record. The system has evolved into a commercial product and is currently in use at five other hospitals.

ED Dashboard was built using the InterSystems post-relational technology and architecture, Caché. This provides a technical base that makes it easy to integrate with existing hospital applications as well as the full range of Web technology. This technology has evolved over a 40-year period and now supports a large number of leading commercial medical applications, including Epic, Meditech, McKesson, GE, and many others.

The ED Dashboard provides timely access to the clinical information needed to assure efficient operations and deliver the optimal level of care. The Dashboard makes it easy for ED clinicians, consultants and support staff to provide efficient and safe care for their patients during their visit. It integrates all existing patient's information into one seamless interface. The data is intuitively organized for all members of the care team, providing immediate access to medical records, diagnostic test results, physical location and the essential details health professionals need to provide the best care.

Patient information is continuously displayed on a large-screen LCD monitor centrally located in the ED. It is also available on the computers in the department and wireless devices throughout the hospital that allow the caregiver to easily drill down to access critical information needed to care for their patient.

The features within ED Dashboard are designed to increase ED throughput, improve patient outcomes and reduce clinical delays and errors which lead to improved financial performance and patient satisfaction.

ED automation will be covered in more detail in future issues of Healthcare IT Viewpoint. To learn more about the ED Dashboard, a short video has recently been produced by Forerun that shows the application in operation at BIDMC. Forerun has offered to mail a copy of the video on DVD to those who might be interested in learning more. Should you be interested in a copy, send an e-mail to editor@proxicom.com. Additional information on ED Dashboard can be found at www.forerunsystems.com.

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