

Integrating ED With Enterprise

Washington hospital implements a robust EDIS and integrates it with its HIS.

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Overlake Hospital Medical Center (OHMC), a 337-bed nonprofit, independently operated medical center in Bellevue, Wash., is located in one of the most technologically oriented corners of the world. The hospital continually pursues new technology initiatives, recognizing technology's critical role in improving communication, patient care, safety and hospital efficiency.

The emergency department (ED) is the "front door" to the hospital and also the path through which many patients are admitted. Today, the hospital's emergency department is on the cutting edge of technology after implementing an electronic medical record (EMR) to help assist physicians and nurses with the 55,000 patients treated each year.

Like the majority of EDs in the country, Overlake's ED had been using paper-based patient records. It is difficult to track the whereabouts of paper records and impossible for more than one nurse or physician to access the record at the same time.

The ED had developed small solutions for providing patient tracking and computer-generated discharge instructions, but it needed more comprehensive automation and it needed to go paperless. The Overlake ED team wanted an EMR to eliminate lost and missing charts, and to guarantee legible, comprehensive and accurate documentation capture. With complete automation, the hospital would be able to centralize critical data, eliminate delays in getting lab and X-ray results to clinicians and make charts accessible from anywhere throughout the ED, at a patient's bedside, or at the physician's home.

Addressing Needs Beyond the ED

In 2004, a multidisciplinary team including the medical director of the ED, the nursing director, senior systems analysts, the clinical nurse specialist and other staff began evaluating ED information systems on the market. All of us, together with many more hospital staff members, viewed numerous vendor demonstrations in an effort to make sure the new system would meet the needs of many Overlake staff members.

One of our fundamental requirements was that an emergency department information system (EDIS) must

fully integrate with the hospital's MEDITECH hospital information system (HIS), and also must interoperate with key systems such as the lab and radiology departments, so patient data could be stored in one central record. Additionally, we wanted rich functionality so the system could be used from triage to disposition. Finally, we wanted a Web browser-based system to minimize downtime and enable the hospital to backup data while the system remains up and running.

Together, we all selected ED PulseCheck from Wakefield, Mass.-based Picis Inc. On Jan. 18, 2005, Overlake Hospital Medical Center went live with the new EDIS, only four months after signing the contract. Using the "big bang" approach, Overlake staff immediately began using almost all of the software's features during phase one of implementation. This included an electronic tracking board, nurse documentation, physician documentation, charge by documentation, results reporting from lab and X-ray, Dragon Voice Recognition for physician documentation, a prescription writer, biometric sign-on, scanning and discharge instructions.

For more information about ED PulseCheck from Picis, visit www.picis.com

Integrating EDIS With the Enterprise

Overlake integrated several existing systems with the new EDIS. An outbound interface with MEDITECH Patient Care Inquiry (PCI) module was installed to share documentation for the PulseCheck product. This allowed ED physicians to enter patient-specific instructions into the charts. The system also integrates with ADT (admission/discharge/transfer) and incorporates detailed lab and radiology results.



In the past, the hospital paid expensive transcription fees to have ED physicians' notes dictated and typed into MEDITECH's PCI format for posting to the patient records. Now, with a direct interface to the PCI module, we have eliminated transcription fees, and the ED staff can now choose exactly which data to send to MEDITECH PCI. Also, lab and X-ray results are now incorporated into the chart, and staff are notified that results are ready via the tracking board.

Overlake utilizes an intranet, often for training purposes and to streamline internal workflows. By adding external links to the intranet, the staff can now access many important pages for training and treatment. This includes Micromedex, a training page about how to use ED Pulse-Check, a physician medical library, access to Epocrates (a mobile and online diagnostic and drug reference tool for ED physicians), and MagicWeb, a Web-based medical image distribution solution for PACS. We are customizing the system even more; soon, it will be possible to enter a MEDITECH link that will allow physicians to enter the MEDITECH PCI chart while also accessing the EDIS system, to view returning patients' previous labs and transcription reports.

Planned for the future is an interface from the EDIS to the monitors used to monitor patients' vital signs, which will save nurses from having to manually record this data. Then we will implement the Order Entry and Medication Services component, so physicians can enter their own orders for patient medications.

Easy Access, Easy Utilization

It's one thing to customize an EDIS so that data from multiple hospital departments can be pulled and utilized as if coming from a centralized repository. It's another thing to enable easy access and utilization for clinicians. Easy utilization begins with sign-on, and an easy sign-on process was critical for our clinicians.

We elected to use a biometric ID feature for sign-on that would provide immediate access with a scan of one fingerprint. This way, clinicians would not have to remember passwords or be constantly logging in. Approximately 100 staff and 20 physicians now have the option to sign on to the EDIS by touching their index fingers to a 4x2-inch reading device.

In the past, our ED was not wireless, except for the admissions staff who registered patients at the bedside. Now, wireless access is available throughout the ED, and clinicians can electronically document using Panasonic Tough Book handheld devices and Planar all-in-one rolling carts at the bedside. Physicians can also document via voice recognition. The interface with Dragon Medically Speaking voice recognition system enables physicians to create real-time, online documentation without the expense of the hospital having to pay transcriptionists.

Improvements Today and Tomorrow

Improvements in documentation have led to more accurate billing. Before, the hospital could only charge for care that was documented, even if the record was incomplete. With automated documentation, every service performed is documented and charges are captured. Then, captured charges are transmitted to the HIS billing module. In short, we have increased our ED charge capture by 20 percent, from December 2004 (prior to go-live) to December 2005. Simultaneously, we eliminated \$750,000 in transcription charges through the use of templates and voice recognition.

Also, we have updated many features since our January 2005 go-live. Dragon Medically Speaking has been upgraded to version 8.0. A few months ago, the address book was enhanced and customized, adding an MSU-interface for physician addresses. Interfaced with the MEDITECH Provider Dictionary, this feature is up-to-date with the HIS.

Working with Picis, we have created a feature that enables billing companies to be notified when a chart is completed. The customized coder can also identify what information is needed to finalize the chart. We are pleased that Picis has made this a standard feature for all its customers, as a result of Overlake's insight. We also customized the entries and forms feature, specifically assessment and procedure templates to reflect standards and policies specific to OHMC and Washington State. Examples include the trauma and stroke assessments needed for facility certification, procedural sedation and restraint template used daily in patient care, and forms used for transfer of patients to other facilities and specific forms used for school or work release.

Overlake is undergoing major construction of a South Tower, which will add 80 new beds and include a new state-of-the-art 40-station Emergency Trauma Center, operating rooms with the latest technology and a critical care unit. We expect the project to be completed in the fall. With all of the recent technological advancements in accessing complete and automated critical data for patient care across the entire care network, we believe Overlake Hospital Medical Center will continue to be one of the nation's most innovative hospitals.

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