

## Florida Hospital's physicians access critical patient information over the Internet

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### Overview

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#### ■ *The Challenge*

*Physicians need to see current clinical data on their active patients, including clinical summaries, financial information and lab results*

#### ■ *The Solution*

*IBM's host-on-demand Internet terminal emulator, custom applications for physicians and digital diagnostic images available over the Internet*

#### ■ *The Benefit*

*Improved patient point of care with real-time data and lab results*

With seven hospitals and 13 Centra Care walk-in medical centers, Florida Hospital is one of the largest not-for-profit hospitals in the country. This year, the hospital staff will care

for almost 900,000 patients. Florida hospital offers a wide range of health services, including cardiology, cancer, women's medicine, neurology, diabetes treatment and rehabilitation.



In July 2001, Florida Hospital purchased Winter Park Memorial Hospital, and Winter Park's physicians were already using the Meditech clinical information system, a third party hospital information system software package that provides remote access to data. Florida Hospital wanted to integrate systems, people and processes to limit its exposure and keep delays of getting the system up and running to a minimum.

"We came up with the first edition of a Web site to meet the immediate need of emulating Meditech," explains Steve Deutchman, assistant director of Java Development at Florida Hospital.

First, the IBM team introduced IBM's host-on-demand Internet terminal emulator, an application which lets physicians access the hospital's mainframe over the Internet. "Anything they were authorized to access in house—patient census, orders and results—they could access from their office," explains Deutchman.

Next, the IBM team wrote custom applications for physicians. This stage included a more traditional Internet interface, where physicians could view a patient's face sheet, a document that shows the patient's Social Security number, insurance coverage, address and next of kin. This application replicated a report that the physicians could obtain from the legacy system, but which they now could view and print from a Web site.

The physicians can now also see a patient's clinical summary. This summary which holds a three-day moving window of information, showing where a patient was yesterday, status and results for today and anything ordered for tomorrow.

Physicians can also see what medications patients are taking and the reports they have dictated with the help of a transcription system. This gives physicians the ability to read the transcribed reports at home, after hours, approve or reject them, and electronically sign them.

Physicians also have a patient census where they can see all of their inpatients, outpatients or both, and locate them. This allows physicians to make rounds efficiently without searching for patients.

All of this information exists as current, real-time data, running directly from the IBM mainframe and database that is at the core of the hospital's legacy applications.

The third leg of functionality added to the site allows physicians to access many diagnostic images—x-rays, MRI scans, CT scans, etc.—over the Internet in digital form.

### **Protecting patient confidentiality**

The Florida Hospital physician's Web site requires 128-bit encryption, a message scrambling technique that helps prevent hackers from intercepting and reading messages in transit. When the physicians log in, and any information that could be used to identify a patient is protected with a token. When a physician logs in, he or she needs to input a user ID and a password. The password is not memorized or written down, it is generated on the token—a device about the size of a small calculator.

*“Physicians now also see what medications patients are taking and with the help of a transcription system they can also see the reports they have dictated.”*

*Steve Deutchman, assistant director of Java Development at Florida Hospital*

The physician enters a personal ID number on the token and the token returns an eight-character number that's good for 60 seconds. If he or she waits more than 60 seconds, the number expires. The token itself stays active as long as it's used at least once every six months.

#### **Focus on feedback**

“In the year we've had this system available, we've signed up about 160 physicians,” explains Deutchman. “Florida Hospital has about 1,500 very active physicians on our medical staff, and about 2,500 physicians total, so we only have a small percentage of physicians using the system. We wanted to know why, so we did a formal survey through our marketing department. We received some interesting feedback.”

Physicians found it difficult and cumbersome to access the information via the token. They also disliked having separate log-in processes for the legacy system, the applications the team wrote, and the diagnostic images. The team's goal now is to create a single sign-on process for physicians.

“The physicians also didn't like the fact that until recently, the diagnostic imaging system was grossly underpowered,” Deutchman says. “Even with fast Internet connectivity, it crawled. While the technology was very promising, the physicians viewed it mostly as a toy. They would say, ‘Let us know when you have it working so we can use it.’”

Overall, the physicians liked the applications the team had written for them, particularly the transcription, face sheets, clinical summary and patient census applications. However, “They felt as though the applications lacked a cohesive look and feel. It looked like a different developer wrote each part. It wasn't seamlessly integrated,” explains Deutchman.

The team is preparing to release a second version of the Web site, FloridaHospitalMD (floridahospitalmd.com), that has commented on all the functionality the physicians want as well as the ability to view both the radiology images at higher speeds and the transcribed radiologists' reports along with the images. The Web-site will also add drug allergy information to the pharmacy section.

### **Better functionality with upgrade**

The system now offers integrated navigation, where a physician can log on solo or as a member of a group and see the patient census. By default, it displays all inpatients at all Florida Hospitals. Physicians can change the view to see the various campuses and outpatients, among other things.

When a physician selects the report for a particular patient, a separate window appears. From there, the physician can go to any other report or any other patient who appeared on the original patient list. The physician can easily switch to any other view of whatever he or she selected first.

The updated system also gives physicians the ability to select all patients, or any one report, such as clinical summary, and print them all over the Internet.

### **IBM involvement**

The hospital used a combination of IBM components and services including:

- *Mainframe IBM platform, IBM R76 with 7 CPU's and a DB2 database*
- *IBM Visual Age for Java 3.5<sup>®</sup> Enterprise edition*
- *IBM WebSphere servers*
- *F50AIX servers*
- *Extensive IBM training for developers, systems administrators and database administration staff, particularly in WebSphere and Java programming for COBOL*

### **Lessons learned**

"The mistake we made was a lack of follow-through. We should have continuously worked with the physicians," Deutchman explains. He offers this advice: "Form a users group of physicians with administrative support from your organization. Define the scope of what is achievable with legacy back-end systems and what physicians are focused on. Develop that, but never assume you've reached the end of the road—it's an iterative process that will continue evolving and that will need refinement."

### **Find out more**

To learn more about IBM's healthcare offerings, visit our Web site at **ibm.com/solutions/healthcare**.

For more information about the Florida Hospital implementation visit [floridahospital.com](http://floridahospital.com).



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