

E-mail Alerts Help Biomed Department Manage Its Business

Jill Schlabig Williams

Subject: Baylor Health Care System

Location: Dallas, TX

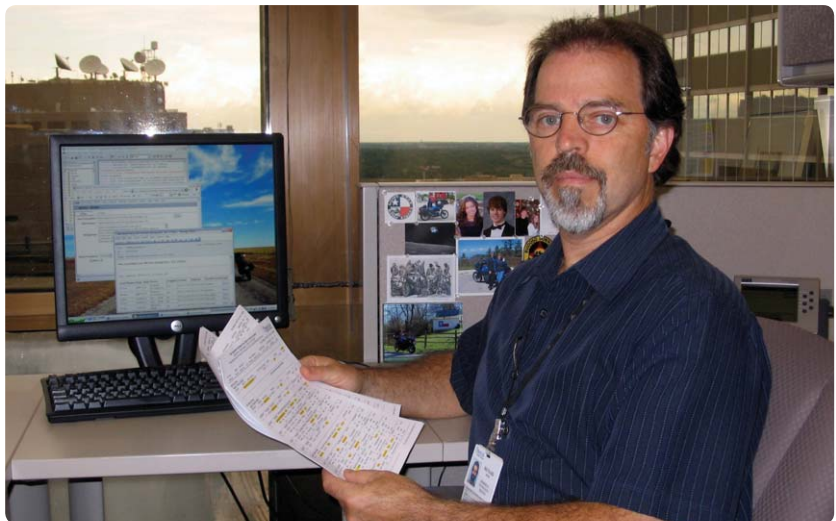
Size: Nonprofit hospital system with 19 owned, leased, or affiliated hospitals

Staff: 51-person in-house clinical engineering department

Richard Swim, technology manager with Baylor Health Care System's biomedical technology services department, used to dread doing data clean up on the health systems' computerized maintenance management system (CMMS). He had to print countless pages of equipment inventory and work orders and then review those reports line by line. Now, he has found a way to do this job in one-tenth the time, and simplified the jobs of Baylor's biomedical engineering and imaging managers and technicians. The secret? Automated e-mail alert queries that remind staff to enter missing data, clean up data problems, check on open work orders, finish overdue preventive maintenance (PM) checks on critical lifesaving equipment, and more.

Challenge

Staying on top of the data entered into Baylor's CMMS was no easy task, with 51 biomedical technology services staff members and almost 43,000 pieces of equipment in the



Richard Swim compares his old, paper-based method for finding data problems in Baylor's computerized maintenance management system to the new e-mail-based system, which automatically alerts him of data issues.

inventory. "It was an overwhelming task to remember and carry out along with all of the other job responsibilities we all have," says Swim.

Swim's director—Kenneth Maddock, Baylor's corporate director of biomedical technology services—agrees that managing data was a difficult job. "Having accurate, timely data in the CMMS is critical," says Maddock. "Managers use the data to stay on top of the work to be done. However, in the real world, people get swamped and don't have time to enter the data or clean it up."

Baylor's CMMS got a comprehensive overhaul in 2003 when the healthcare system purchased new software called iTMS from Four Rivers Software Systems, Inc. It wasn't until 2005, however, that Swim con-

sidered implementing the software's imbedded e-mail alert module, which could automatically generate and send alerts to solve a problem they were having with open work orders. He and Maddock launched a project to leverage this built-in software feature into a valuable business tool.

Solution

With a background in clinical engineering, networking, and database management, Swim was uniquely qualified to take on the project. He wanted to implement a system that would automatically run queries to provide information or identify data issues, and automatically e-mail those query results to the appropriate managers or technicians. The e-mail alerts would include hyperlinks di-

rectly back to the CMMS so that a specific record could be opened with a single click for further review or edits.

The first step was creating the alerts. Writing alert queries typically takes a matter of minutes, Swim says. Managers and technicians requested specific alert contents, frequencies, and distributions, and Swim used the Transact-SQL language to write them. No hardware or software costs were involved; the only cost was the investment of Swim's time and expertise. He created the queries, set them up as scheduled jobs to run within the database, and used the e-mail alert module to distribute the alerts via SMTP. He easily obtained permission from the hospital's IT department to distribute the alerts over the network.

Dozens of alerts are now run and e-mailed from the system on an hourly, daily, weekly, monthly, or as needed basis. Every technician receives a daily list of open work orders, and can follow up by simply hitting an "EDIT" link on the e-mail that opens the appropriate record in the CMMS database. Managers receive weekly alerts of active unscheduled work orders by tech and service group, work orders more than 45 days old, and other alerts that help them manage their responsibilities.

Since the Joint Commission is emphasizing timely completion of PMs for life support equipment, Swim created an alert to help the department comply. Now, every Monday, managers get a list of open PMs on life support equipment more than 15 days old, making follow up on this key metric easy. "The system gives the Joint Commission a clear demonstration that we're managing things effectively," says Maddock.

Alerts are easy to add or change. Swim recently modified a series of alerts to clarify responsibilities for new managers. And, the team has been using the system to monitor purchase order creation. "Now, we are alerted automatically when a large purchase has been requested. It allows us to close the loop on authorizing expenditures from an auditing standpoint," says Maddock.

Biomed departments whose CMMS does not include the e-mail alert system or who don't have someone on staff who can program the query should not despair, says Swim. "Ask your software vendor to add the e-mail option," he suggests. "And a software vendor or in-house data expert can always be contacted to develop the code necessary for the alerts."

Results

Swim reports that since the implementation of the alerts, the accuracy and completeness of asset data entry has im-

proved dramatically, as has equipment service turnaround time. "It has been a great benefit to have the database 'remember' to run a report, analyze the data to focus only on what needs to be presented, and deliver those reports to the specific staff members who need the information," he says. "The system pushes data to your desktop rather than your having to pull it from the database."

"I feel very strongly about this as a best practice," says Maddock. "This tool helps you manage your business. The system automates the manager's job, helping him or her do what needs to be done without having to remember every detail. As they say, you manage what you measure, and this system lets you pick out what you want to measure, measures it for you, and reminds you to review it frequently. It's an excellent tool to highlight and follow up on the things that are most important to us."

Maddock also likes the fact that the system sends a clear message to staff: these are the things we're focusing on, this is what's important, and we will follow up.

Do the constant e-mails get annoying? No, say both Swim and Maddock. A whole day's alerts can be reviewed and forwarded for action in a matter of minutes. "It's a constant reminder of what needs to be done," says Maddock. "If I get a message and I don't have time to follow up on it this week, I'll get another one next week and will handle it then."

"The system makes us more effective," agrees Swim. "Things get done that otherwise wouldn't get done."

Even the dreaded data clean-up task has been simplified by the system. Rather than going through printouts line by line, an automated alert now sends data errors it uncovers to the person who created the error and to his or her manager. The system finds missing data and illogical entries, notifies the user, and makes it easy to quickly fix the problem.

"Before, our reports had lots of missing data. Now, the data is there," says Maddock. "This system has helped with regulatory compliance, department management, and budgeting."

And what do the biomed think of the system? "They love it," says Swim.

Maddock agrees. "Any biomed will tell you how critical the database is and what a pain it is to maintain. Our goal was to make the biomed's jobs easier, and help them do their work. It's been a success." ■

Jill Schlabig Williams is AAMI's senior writer.