



Case Study: Laboratory Information Systems

Paperless is the buzzword for a new era in clinical data management and the seemingly ever-elusive goal of removing paper from the day-to-day activities of patient care.

By Richmond E. Holly, BA

Paperless is the buzzword for a new era in clinical data management and the seemingly ever-elusive goal of removing paper from the day-to-day activities of patient care. In December of 1997, Southeast Texas Medical Associates (SETMA) began looking at information systems that would take our clinic into the new paperless millennium. We determined the need for a new Central Business Office (CBO) system, a laboratory information system (LIS) and an electronic medical record (EMR).

We needed systems that would provide the level of complex care our customers required yet control costs. The order of the day: Take care of individuals, but also populations, and do it better than has ever been possible, and do it for less money.

We chose systems, therefore, that were offered by stable companies, had a national reputation and were forward-thinking in their management and development philosophies. We approached our selection with a "best of breed" mentality as we began to look at CBO systems, LIS and EMR.

We first implemented a new CBO system, MicroMed's (Horsham, PA) EPM software product. This gave us a state-of-the-art appointment scheduling, billing and reporting system. After getting this system up and running, we focused on MicroMed's EMR product, NextGen. Finally, we focused on our LIS.

SETMA operates a Level II, moderately complex reference laboratory and performs laboratory work for 22 nursing homes and 90 other physicians. We use the Roche Cobas Integra for chemistry. Special chemistry is performed on the Bayer Immuno One; hematology uses the Abbott Cell Dyn 1700. All instrumentation utilizes barcoded samples and is interfaced with the LIS. SETMA's laboratory has always maintained a 100 percent proficiency rating and routinely receives excellent reviews by the state regulatory agency, which oversees clinical laboratories. Our lab is a vital part of our clinic and, therefore, the selection of a new LIS played a vital role in the clinic's goal to become paperless.

Going Paperless

To achieve the clinic's goal of a paperless medical record, the LIS we chose had to be fully interfaced to the CBO and EMR. Patient demographic information, billing information and laboratory results needed to be updated on a real-time basis. The LIS also had to accommodate our non-clinic customers. We needed a reliable and quick method of entering those orders and sending back results. We chose Carmel, IN-based Orchard Software Corp.'s Laboratory Information System.

LIS Implementation

The implementation of Orchard's LIS went smoothly. Orchard assigned a project manager who assisted with the system design and database building. Orchard's team then came on site to implement the product and train our lab staff. The support team was professional and worked with our employees until we felt comfortable with the system.

Orchard' intuitive windows-based user interface allowed the staff to learn the system quickly. After implementation, our lab staff saw a number of benefits related to efficiency in day-to-day operations.

However, there are other benefits. When we discuss our LIS with a new hardware vendor, Orchard's system is always recognized and spoken of as an excellent LIS. Many times, interfaces were already programmed and available. We have been able to use the auto-fax system to deliver our reports out to reference sites in a timely and more efficient manner. The biggest benefit to our clinic has been the ability to interface our LIS with our clinical information system. In April, we completed testing and went live with a real-time interface between the two. Our providers now order labs online and receive the results back into the patient's chart. All labs are reviewed and "signed off" in the EMR, which is interfaced with the LIS.

MicroMed's workflow module lets the provider know when the lab work is back, review the results online, compare to prior results if necessary and sign off. This moves SETMA dramatically closer to our goal of being paperless. Orchard is working with our major reference laboratories to develop interfaces that will soon allow SETMA to have all lab records inhouse and out-sourced documented in our EMR.

Looking Ahead

SETMA looks forward to the future of information systems when, with proper safeguards, we can offer our patients access to their medical information online, alert our patients via e-mail of abnormal lab values and remind them to get regular testing done for diabetes, cancer, etc. Our current systems will mature and grow to meet these goals. To date, they are serving us and our patients very well. The systems provide the tools to meet our patient's needs as well as the support and confidence we need to utilize those tools.

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