Implementing an Electronic Imaging System

by Debra Graham

More and more is being seen and heard about the computerized patient record (CPR). The desire to embrace this new technology is often checked by fear of such a project's magnitude. A myriad of questions regarding computer literacy suddenly emerge: *Do I, or anyone in my department, really understand computer systems? Is my staff ready for such a major transition? Will our medical staff accept this change? Do I understand the confidentiality requirements for a CPR?* If the answer to any of these questions is "no," don't let that stop you. What you need to prepare your hospital and staff to accept and welcome a CPR can be learned. One important CPR component is an imaging system (IS). In this article, we'll focus on steps to implementing an imaging system.

Selecting an Imaging System

Before looking at different IS solutions, outline your facility's requirements for an imaging system. Some of these functions may include a user-friendly interface, automatic electronic workflow, quick response time in pulling up images, and the capability to communicate with your existing computer system. There may not be a system available that meets all of the requirements, but a good match can be found.

When meeting with an IS vendor, ask a lot of questions. Have the vendor set up conference calls or site visits with existing customers so you can learn how the vendor performed during and after the implementation. Ask questions like *did the vendor meet expectations? How did the implementation really go? If you had it to do over again, would you select this product?* An IS solution is quite expensive, so it is crucial to have all available information to make the right choice for your setting.

Ingredients of IS Success

Strong administrative support for the IS is essential for success. When configuring an IS solution, there are many hardware options, and none of them are inexpensive. Ideally, administration will support an investment in a hardware configuration that optimizes the software solution. The choices made here will determine the strength of the solution and, potentially, the image response time. Administrative assistance is also needed to communicate the plan to physicians. There will not be 100 percent acceptance of the IS by the medical staff in the beginning, and administration will need to back the IS by requiring the medical staff to complete records online.

Recruit an implementation team that includes HIM and information systems personnel, nursing and medical staff, and administration. The information systems personnel will provide the technical expertise to allow the IS to communicate with the host system and other systems that can interact with it. The nursing staff will assist in redesigning the forms and creating buy-in from the staff. Involve the medical staff in the decision-making process to ensure their support of the solution. Rely on administration to help with communication problems. Global direction for the IS from the HIM director, plus a dedicated HIM system administrator for technical support, will lay a solid foundation for a successful implementation.

Finally, build or designate a dedicated computer training room. Because implementing an IS will affect your physicians and many other departments in the hospital, numerous staff members will need to be trained. Having a dedicated training area is beneficial for everyone involved.

Preparing for the New System

1. **Evaluate the necessary forms.** An ideal form for scanning has a bar code large enough to be read by a scanner, and it has neither heavy black areas, such as lines or logos, nor areas of color. Bi-fold and tri-fold forms require special

handling but can be managed through bar codes. A software package that would enable online access and printing of forms in patient care areas with easily read patient identifiers is a worthwhile investment. Because these forms are digital, when revisions are needed, changes can easily be made online. This would eliminate costly printing and storage of forms.

2. **Determine how much of your existing patient record is digital.** A digital record is any part of the patient record that is captured electronically. Ideally, plan to have Computer Output to Laser Disc (COLD) feeds for these digital records. The advantage of a COLD feed is that a digital record can be instantaneously transferred from one computer to another without human intervention. Evaluate what it will take to have each of these digital records COLD fed. Many digital records, such as EKGs, are in a proprietary computer language that would require very costly interfaces. Concentrate on the records in more universal languages, such as transcribed reports, which require a less costly interface and bring the most benefit.

3. **Reconsider your workflow.** First, chart the current paper process. Then, design the ideal workflow. With an electronic image, there are no limitations to accessing the record. Multiple tasks can occur at the same time, including completing deficiencies, coding, analyzing for deficiencies, and record auditing. Careful design of the electronic workflow can maximize an HIM department's efficiency.

4. **Provide computer training.** Some members of the HIM staff and other users of the patient record will need basic computer training before learning the specifics of the IS. The HIM department will need specialized process training for preparation of the record for scanning, scanning the paper record, and indexing the paper documents to the proper document labels.

   Also, the HIM staff will need time to get comfortable with the new processes. It is essential to get the right employees plugged into the right positions. Scanning and indexing require attention to detail and repetition. The preparing of records for scanning is parallel to analyzing a record in the paper world. Implementation will identify anyone that might be mismatched in his or her new positions.

5. **Educate the medical staff.** Use meetings, flyers, and word of mouth. Or provide demonstrations in staff lounges and eating areas or throw a kick-off party. Plan the announcement based on what has worked well in other situations.

6. **Consider the office space.** Are the work areas designed for large computer workstations and long periods of work on a computer? What needs to be redesigned to accommodate the new equipment? Take this opportunity to design a workspace that suits everyone.

Project Implementation

At implementation, set clear-cut goals. The volumes needed to be processed and expected time frames should be established. Expect an initial delay in consistently meeting these goals. The early stages of implementation will reveal any part of the system that is not working properly. Plan to make alterations to optimize the processes.

Track bugs by using a problem identification log. In the log, any system problem that occurs can easily be identified and once identified, your information systems department can work to solve it. At times, problems will be user-specific and follow-up training will be needed. There is no way to implement such a pervasive system without a few technical problems. After the initial few weeks, most of these problems are sorted out and then there are only occasional glitches.

Frequent quality checks of online work are essential. Any difficulties need to be identified as soon as possible. Quality checks will identify areas of training that need to be revisited and possible system problems, and ensure the quality and accuracy of the system.

Benefits of an Imaging System

1. **Easily accessible patient information.** The limitations of a paper record are no longer an issue. Multiple users can simultaneously access the same patient record at multiple access points. Best of all, no one can accidentally misplace

the record.

2. **COLD feed efficiency.** COLD feeds are another advantage to the information flow of a facility. As soon as a COLD feed is generated, it will reach the system in a real-time feed. In other words, as soon as a lab report or transcribed report is released, it will go directly to the patient's online record. This information will then be available to the physician from any access point into the IS. Improving the information flow improves patient care, and COLD feeds are a great tool to accomplish this.

3. **Decrease in delinquent records.** Once physicians are accustomed to completing records online, they complete records more efficiently. When they log into the system, their deficient records are queued up for them and signing their records is as easy as a click of the mouse. They also are no longer limited to coming to the HIM department to complete these records—they are able to complete them at any access point into the IS.

4. **Increased morale and efficiency.** Improved morale and efficiency in an HIM department is a natural outcome of a successful implementation. Easily accessed information from all departments and no more loose reports and stacks of charts to file, audits to pull, or shifting of files are just a few of the staff benefits.

5. **Audit trails.** The system offers audit trails that track every access on each patient record, even down to the page that was accessed. Audit trails can be compiled by a specific user or by a record. This feature is critical to assuring the confidentiality of the patient records in a CPR.

6. **Long-term staff reduction.** Immediately after implementation, the HIM department runs a dual system. To accommodate this, expect to increase staff. Temporary staffing is a good solution for the transition period. Many factors play into the amount in reduction of staffing, but an imaging system implementation will ultimately reduce staff.

Lessons Learned

Administering an IS system requires a great deal of training and learning. Appoint the information systems and HIM system administrators early so they have time to familiarize themselves with and prepare to set up the system. Their readiness is critical to the success of the implementation.

Training, educating, and validating are an ongoing process. Computer literacy varies in most departments, so plan to train and retrain. The HIM department will be expected to be the experts on operating the IS system so it is important that everyone in the department can train other users, physicians included. Attitude is a major factor in this process. If your staff is excited about the conversion, their attitude will spread to other users, thus enhancing the acceptance of the system.

Implementing an IS is a challenge; however, the benefits far outweigh the difficulty of installing it, and the greatest benefactor is the patient.

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