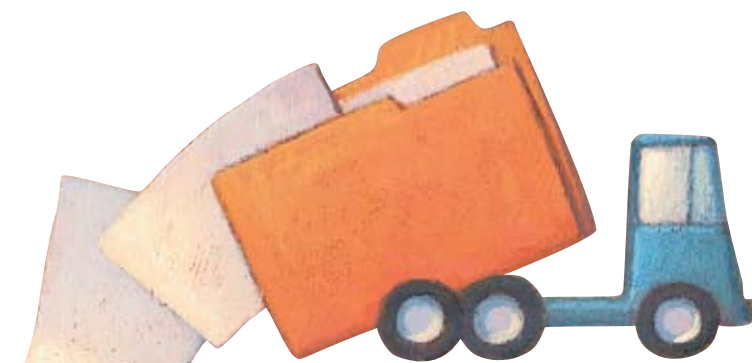


From Paper To Progress

EMR implementation at Moses Cone Regional Cancer Center

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Moses Cone Health System has long understood the need to convert manual and paper-based systems to an EMR system. When Moses Cone Regional Cancer Center (RCC), a member of the Moses Cone Health System, made the decision to implement EMR, the cancer center's steady growth and the desire of the physicians and management were the driving factors. At the time, RCC employed 10 medical oncologists and 6 radiation oncologists on site. Two satellite locations with additional physicians were planned for the future. The other force driving EMR implementation was the limitations RCC was experiencing with its paper records. Patient records were sometimes misplaced, not easily accessible from remote locations, and extremely voluminous. Simply put: the volume of "paper" was overwhelming the cancer center's system.

Similar to other large hospitals, Moses Cone's process was to initially implement EMR in non-clinical areas, and then gradually expand implementation to inpatient clinical floors and nursing units. With elec-

tronic systems in place on the inpatient side, the hospital then began to consider expansion to its outpatient facilities. Inevitably, however, the day arrived when Moses Cone Regional Cancer Center's hospital-based physician practices needed to join the electronic era in the outpatient setting as well. And here's how it happened.

From "Paper" to Progress

For Moses Cone Regional Cancer Center, the EMR process hinged on the system selected for use in its radiation therapy department. Once that decision was made, implementing the medical oncology section of the same EMR made sense. (Moses Cone evaluated several vendors before deciding that the best course of action was to use the system used in radiation oncology because it had the best medical oncology piece.) Other hospital-based cancer programs will also need to evaluate several EMR vendors—especially since even the most compatible systems require considerable integration between departments. Medical oncology is complex, and for RCC, the choice of a system that most nearly matched its current operations was a prime consideration.

Planning and budgeting are integral to any successful EMR implementation. In this article, "planning" refers to the steps that occur *prior* to system acquisition. Some of the questions your cancer program will need to answer during this planning phase include:

- ◆ Do we implement in stages? If so, what criteria determine a stage? Is a stage a department, a service line, or a system function?
- ◆ What will the impact of this change be on each profession, department, service line, and patient type?
- ◆ How do we assess what systems to improve prior to implementation? How long will this take?
- ◆ How will we prioritize improvement efforts?
- ◆ What back-up systems do we need to develop?

Keep in mind, these are just *some* of the questions RCC answered during its EMR "planning" process. For a more in-depth look at planning for EMR implementation, read "EMRs for Hospital-based Oncology Programs" starting on page 26.

RCC found it critical to identify the specific software capabilities it wanted (and did not want)—without making too many assumptions about the name and description of a certain EMR product. Making site visits and involving staff members who would use the systems also proved invaluable.

able, although few sites had both medical and radiation oncology up and running. This timing meant that our most productive visits occurred *after* we implemented EMR.

One Hospital's Guide to EMR Implementation

Moses Cone Regional Cancer Center's first step in EMR implementation was to appoint a project manager from Information Systems. The EMR project manager led the team through the entire EMR implementation process.

Our next step was to chart out all existing operations that would be converted to an electronic format. This task was much more difficult than we anticipated due to the lack of standard procedures throughout the RCC. Further, we were not even sure that the operational practices and procedures that *were* in place could be converted to an electronic format. In retrospect, this step was resource intensive; many of our processes had to be adapted to the EMR capabilities, rather than the other way around (a common problem to all EMR systems).

Once this phase was complete, RCC designated a group of individuals in nursing and management as "super-users." Because of the time commitment required from a physician group that was already short-handed and the lack of a physician champion, no physicians

were designated as super-users. In fact, even obtaining consistent input from the physician group was problematic. (This lack of physician participation would prove a source of trouble further along in our EMR implementation.) The super-users met weekly to work out all the changes needed for EMR implementation. This stage required several months of work with full IT support.

Each phase of EMR implementation presented its own challenges. Some tasks, such as the implementation of the electronic office note, proved easier than others. On the other end of the spectrum were the more arduous tasks, such as adding outside laboratory tests to the patient record. This task alone required months of detailed work designing a series of complex interfaces. Developing an effective intra-office communication system that works well with our EMR system has also been problematic.

Because of RCC's large size (approximately 150 employees), the cancer center elected to carry out user training and implementation in stages. Staff training was provided in a large room with 20 to 25 individual computer stations—all obtained from different departments within the health system. Cancer center staff participated in hands-on, instructor-led, two-to four-hour training sessions, which spanned a two-week period, including weekends to accommodate everyone's schedule. The project director led most of the sessions with the medical director assisting the physicians. This approach is effective when EMR training and implementation are closely connected; however, it is far less effective if there is a delay between training and implementation. Usually, staff retains EMR skills better when they are able to get right to work putting their training to use in a real-world setting.

Lessons Learned

As our EMR journey continues, RCC has learned many valuable lessons along the way. For example, a project leader (usually from the hospital's IT staff) is essential for any large-scale EMR implementation. Originally, RCC planned to use its project leader to develop the EMR system and to train a cadre of super-users who would then be available on a daily basis in the clinic. While RCC initially looked for a systems analyst to act as project leader, the position was eventually filled by a staff member who had skills in the hardware arena, but who was not fully involved in the EMR system itself.

As RCC moves through EMR implementation, we are realizing this plan is not as effective as it could be. Due to other work-related responsibilities, once the major portion of the go-live has been completed, the project leader will only be able to devote one or two days a week to the cancer center. Similarly, the super-users all have other duties that often make them unavailable

RCC's Top 5 EMR Challenges

- 1.** Working with an EMR vendor that underestimated our server needs. We also had difficulty judging the number of workstations, the level of function of each workstation, and the best location for each unit.
- 2.** Dealing with a lack of standard procedures that slowed down EMR implementation and required additional resources and staff.
- 3.** Realizing that even established procedures and practices had to be adapted to "fit" the capabilities of the EMR system.
- 4.** Developing an effective intra-office communication system to go with our EMR meant that we would be "chartless" before we'd ever become "paperless."
- 5.** Gaining physician buy-in and participation in the EMR implementation process.



on short notice as problems arise. Although the entire super-user team continues to meet each week with the project leader, addressing problems in real time has been problematic.

Our recommendation: hospitals should plan and budget for two staff members with IT backgrounds to be a full-time part of the EMR team (one to handle hardware issues and one for application problems and training). These individuals, who we will call systems analysts, should be available five days a week to continue training, solve software problems, and identify ongoing issues related to the EMR system.

For Moses Cone Regional Cancer Center, however, the most difficult element of EMR implementation has been bringing our physicians on board. Increasing physician involvement is an ongoing goal of the program, and physician participation continues to grow. While administration has focused on the benefits of EMR, initially the physicians generally have had a more negative view of the process. To our busy practitioners, EMR implementation is just another roadblock to slow down patient care, and one that requires longer hours to accomplish the same amount of work. (With any EMR implementation, the learning curve is long and didactic time is limited, so the ultimate benefits of paperwork reduction and more accessible records do not occur right away.)

Compared to physician practices, we found that hospital-based programs are usually more limited in their choice of EMR vendors—most often due to existing hospital systems and interface issues. Compared to their private practice counterparts, hospital-based physicians are often asked to make more compromises in terms of changing processes and practice modifications due to the need to interface with other systems. To ensure as smooth an implementation as possible, we strongly recommend that a physician panel be involved in *all* aspects of EMR implementation and modification—not just in those parts that appear to be provider related. For example, it may not appear that physician input is needed in scheduling design or laboratory interfacing, but these processes have a significant effect on a physician's daily activities and can be a continuing source of problems if physicians do not have a role in the EMR planning stages.

Finally, RCC has learned that EMR implementation in a large hospital outpatient setting *must* be done in stages. Even if several sections of the program are implemented at the same time, all parts will not proceed at the same pace. During our EMR implementation, we ran into a major stumbling block that affected the entire process—inconsistencies between the electronic and paper parts of our patient records. While

EMR “Quick Tips”

- ◆ Understand that EMR in a large hospital outpatient setting must be done in stages that require meticulous planning and budgeting.
- ◆ Designate a project leader to oversee and drive the EMR implementation process. Ideally, this individual should be someone from the hospital's information services department. This project leader will work closely with hospital IT staff and your EMR project team to ensure a smooth implementation process.
- ◆ Budget for a full-time IT staffer or systems analyst to participate in the EMR process—from planning to implementation and beyond. This staff member will address questions and problems that crop up in the EMR system, as well as provide ongoing staff training.
- ◆ Ensure that a physician panel is involved in all aspects of EMR implementation—not just in those parts that appear to be provider related.
- ◆ Since EMR implementation is conducted in stages and systems parts are often delivered at widely different times, know what EMR receivables are coming and when.

maintaining a paper record during EMR implementation is necessary, you must have a clear understanding as to which staff members are responsible for maintaining these paper records and ensuring consistent information in *both* versions.

As you can see from our experience, EMR implementation in the hospital outpatient setting presents some unique challenges. Still, the decision to move from paper to electronic medical records is rapidly being taken for granted. The government, private payers, and even our patients are pushing for “paperless records.” For example, Medicare, and some private payers are starting to drive industry-wide adoption of healthcare IT, such as EMRs and electronic prescribing, by rewarding healthcare providers based on the “quality” of the care they give. And while the question of EMR adoption may be more of a question of “when” and not a question of “if,” hospital-based cancer programs must first carefully plan and budget for this new technology. 📌

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