Requirements Information and Interview

This document contains information that along with previous handouts will let each student team to determine the system requirements. Additionally, students should draw upon their experience visiting doctors, use the Internet to research electronic medical (health) records, and make any necessary assumptions for completeness.

Electronic Medical Records (EMR)

EMRs include information about:

1. Physician, nurse, and other clinician notes
2. Consents (procedural)
3. Medical record/chart tracking
4. Releases of information (including authorizations)
5. allergies and adverse drug reactions,
6. medications (including dose and how often taken) including over the counter medications and herbal remedies,
7. illnesses and hospitalizations,
8. surgeries and other procedures,
9. vaccinations,
10. laboratory test results,
11. and family history.

The terms "electronic medical record (EMR)" and "electronic health record (EHR)" are used interchangeably. Also, the terms medical record, patient chart, and patient medical charts are used interchangeably. Currently, a medical record is a folder that holds all the medical records related to a single patient.

Interview

An interview was conducted with the office manager, nurse manager, and physician manager.

Interviewer: The purpose of this meeting is to understand the problems with the existing system for patient appointment scheduling and patient medical records, and to understand what requirements we have for the new system. I'm going to first focus on patient appointments and then discuss the electronic medical records. To start, let me ask, what types of functions should the appointment scheduling system be able to handle?

Office Manager: The appointment scheduling system needs to allow us to schedule a patient appointment. We schedule appointments in 15 minute blocks, so that means 9:00, 9:15, 9:30, 9;45, 10:00, and so forth. Usually we schedule 2 patients on the hour (e.g., the 9:00 am slot, 10am slot, etc.) to handle no shows and to prevent any office idle time. However, I think some work needs to be done to understand how to best overbook the schedule.

Other than making the appointments, the system needs to automatically send reminders via telephone, let us change or delete appointments, and generate reports. We need to generate daily schedules, weekly, and monthly.

Physician: The appointment scheduling system also needs to create a daily provider's schedule, for example, each day I need to receive a schedule of the patients I will be seeing.

Nurse manager: The appointment scheduling system also has to be integrated with the electronic medical records such that it sends the daily schedule to nurses so that we can review the patient's records just prior to their appointment. Also, authorized staff such as nurses should be able to go in and make changes and read information on the schedule.

Interviewer: What are some of the details that should be in these schedules?

Physician: The provider's schedule should include the times and names of each patient that is scheduled. Additionally, a note as to the reason for the appointment such as routine exam, follow-up, or complaint such as high fever or stomach pains.

Office Manager: The weekly and monthly reports should be summary reports that let me know how we're doing operationally. For example, the number of appointments made, how many cancellations, no-shows we experience. A summary of the types of appointments made, how many of the patients used our transportation, and similar items.

Interviewer: How are doctor's schedules controlled and input to the system?

Office Manager: Generally, doctor's schedules are stationary in that the times they are available each day doesn't change during the year. What changes is vacation and other events for which they will be unavailable. If a doctor is unavailable we ask for a 2-week notice. Then if patients are already scheduled for the days the doctor will be unavailable, we reschedule the patients. In general, we input the doctor's schedule quarterly.

Interviewer: Who has access to the patient scheduling and are there different levels of access?

Office Manager: It is important that the system and our processes adhere to HIPAA.

Interviewer: What is HIPAA?

Office Manager: HIPAA is The Health Insurance Portability and Accountability Act. It protects the privacy of individually identifiable health information. It also sets national standards for the security of

electronic protected health information and the confidentiality provisions, which protect identifiable information being used to analyze patient safety events and improve patient safety.

Interviewer: OK, I'll have to review the HIPAA compliance requirements. For access to the records, how should this be controlled?

Office Manager: All clinical staff such as doctors and nurses should have access to read the medical records of patients. Nurses also have the ability to make appointments, but mostly appointments are scheduled by the coordinator in each clinic. A big problem now is that coordinators only see the schedule in their clinic, the new system needs to allow coordinators to see the schedules in every clinic.

Interviewer: So I take it that we'll need to have multiple user classifications with passwords and different access levels?

Office Manager: Yes, that is correct.

Interviewer: Are there any other things about patient scheduling that are relevant right now?

Office manager: Well, before patients leave, we try to schedule them for their next appointment while they are here. Also, the system needs to take note of no-shows because in the future we might start charging patients for no-shows. Finally, the IT guys reminded me that the system needs to be Window's based and work with Novell.

Interviewer: Now turning to the electronic medical records (EMR), can you explain a typical workflow for how they are used during a day?

Nurse Manager: The way it currently works is that I am provided with the schedule for the next day by 3 pm. I assign the task of pulling charts to our medical assistants. They use the schedule to pull all the medical records for all the patients schedule the next day. We store these near the nurse workstation. We do this so that all the records we need are available and save time during the day.

The next morning as each patient shows up, the nurse gets the patients chart that was pulled the night before and shows the patient to an examination room and leaves the chart there for the doctor. The doctor sees the patient and will make notes, etc. in the medical record. Also, the doctors will sometimes speak into their recorder, which information is later transcribed and entered into the patient's chart. Any prescriptions, labs, orders, etc. are put into the patients record. It is up to the nurse to see that the chart is complete.

Now this is where problems occur almost daily. Frequently, the doctor will take the patient's chart to their office to review or add things. Or the chart is brought to the laboratory, or a medical assistant takes it to copy or fax information to the pharmacy or insurance provider. Many different people need the chart, and the result is that it is often to find a particular patient's chart. We have a policy that it should be taken from and returned to the nurses station, but this doesn't happen. Once the charts are updated, then they are put back into the storage area. We try to only have the charts out for patients who are scheduled on that day. This way we minimize clutter.

Interviewer: I expect that with electronic medical records the problem of looking for charts will disappear.

Interviewer: What are some of the requirements you see for access to the patient records in the examination rooms, laboratory, and other workstations?

Physician: I spoke with the other doctors and are biggest concern during a patient examination is that we'll be tied to a PC on the counter in the room. So instead of interacting with the patient, we're interacting with a PC. So, I think we need some technology such as a PDA or other device that is moveable and allows us to keep our focus on the patient by facing the patient.

Nurse Manager: Outside of the patient visit, such as at the nurse workstation or in the lab, a PC is probability best. In these situations computing speed is more important since you're working alone.

Interviewer: Should we convert all existing records immediately, piecemeal, or only do new records electronically? How do you see the conversion working?

Office Manager: Cost is the overriding concern. We need to know the approaches available for data conversion and determine a strategy to do it in a cost-effective manner. I think we have about 36,000 charts, so maybe we will only create the core information such as patient name, address, allergies, and other information for each patient. Then going forward, everything will be electronic. I'm not sure how this will work, but it might be less expensive than trying to convert everything at once.

Interviewer: In our analysis, we'll determine different strategies for data conversion and estimate the costs of each and make a recommendation to you.

Interviewer: Concerning the transportation, we spoke about this in the first interview. How will we determine the need for transportation services?

Office Manager: I think the best approach is that when an appointment is made, the patient is asked if they will require transportation. This needs to be tagged to the appointment. Then each morning, we need to generate a schedule for the van driver to pick up patients.

Interviewer: OK, I think we have enough to start our analysis, if I have further questions I'll get back to you.