Electronic Health Records: A Primer
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Physicians and other healthcare providers often find the jargon of Health Information Technology just as confusing as medical jargon is to patients. Hopefully, this brief glossary of names and terms, which is not intended to be exhaustive, will assist physicians investigating electronic medical record systems.

CCHIT – Certification Commission for Healthcare Information Technology (CCHIT); the recognized certification authority for electronic health record systems.

Client(s) – A client is the requesting program or the user’s computer in a client/server relationship.

Database – A mechanism for organizing the data in an electronic medical record (EMR), electronic health record (EHR) and practice management system (PMS).

DOQ-IT – Doctor’s Office Quality - Information Technology

EHR – Electronic Health Record; a longitudinal digital record intended to interact with systems outside the office, i.e. lab facilities and government agencies.

EMR – Electronic Medical Record; a digital means of recording patients’ histories, physical examinations, progress notes, laboratory reports, and other diagnostic tests for the office or hospital, usually at a single location.

IT – Information Technology

PHR – Personal Health Record; a patient-centric repository of information, which can often be modified by the patient.

Physician Portal – A Web-based communication method between physicians and patients.

PMS – Practice Management System; software generally used for billing purposes.

P4P – Pay for Performance

RHIO – Regional Health Information Organization; a means to connect different healthcare providers, laboratories, hospitals, and other agencies.

RxHub – A consortium of Pharmacy Benefit Managers whose mission is to improve patient safety and contain healthcare costs. RxHub connects physicians, pharmacists, and payers via secure electronic transmissions, consistent with HIPAA regulations, to confirm formulary information. RxHub transmits up-to-date patient medication history and pharmacy benefit information to physicians in their offices and at hospitals. Physicians receive this information prior to writing any prescriptions, thereby minimizing patients’ risk of adverse drug events.

Server – In the client/server programming model, a server is a program that awaits and fulfills requests from client programs in the same or other computers. A given application in a computer may function as a client with requests for services from other programs and also as a server of requests from other programs.

SureScripts – An organization of approximately 85% of the nation’s pharmacies, SureScripts, through its Electronic Prescribing Network, links pharmacies and physicians, allowing the electronic exchange of prescription information.
On July 29, 2006, the Certification Commission for Healthcare Information Technology (CCHIT) released, on its Web site, the names of 18 software vendors that have met the Commission’s 2006 Ambulatory EHR Criteria for many common ambulatory care settings. The 2006 list finally grew to over 80 vendors. The 2007 list has shrunk down to seven vendors. Since the standards become more encompassing each year, the number of vendors who qualify will wax and wane. Keep an eye on the vendors who consistently re-certify.

Certification does not mean that a non-certified system doesn’t comply. Rather, it means the non-certified company chose not to pay the fee for evaluation of the software. The advantage of the certification process to your medical practice is that you can now compare apples to apples, without receiving a degree in Information Technology (IT). Most of the features the majority of physicians want in an electronic health record system are currently in place in the certified products.

Since the technical aspects of each software package are consistent, you can focus, instead, on more practical matters, such as the price of the software, support, training, and installation, as well as the ease of use, the degree of interoperability, and the financial strength of the company (i.e. will they be around in three years?).

There are at least three ways to acquire and use the software: (1) purchase the license; (2) subscribe annually and run the software from your office; or (3) subscribe annually and run the software remotely. This latter option is usually known as the ASP (Application Service Provider) model. Purchasing the license outright (option 1) is the least expensive option in the long run. If you purchase the license, you must set up the network in your office with a Server and multiple Clients. In this model, the Server does most of the work and may cost as much as two or more Clients. Most software companies provide the minimum specifications for the Server and Client; however, I recommend that you seek that advice from an IT specialist when purchasing and, ultimately, connecting the network. You can choose a VAR to purchase some or all of the software and hardware components and complete the installation.

If you select the subscription model (option 2), you avoid the upfront cost associated with the purchase of a license; however, you will still incur the cost of setting up a Server/Client network. After two to three years, you usually are past the break-even point, and the cost of use continues to grow. Some vendors permit you to use the subscription to test drive the product. They will then roll part of the subscription fees into the purchase of a full license.

The ASP model (option 3) requires the software vendor or VAR to set up a server outside your office. The server can be one mile to a thousand miles away. The office connects to the server through an Internet connection. The vendor or VAR is responsible for maintenance of all software. The Internet connection can be expensive, since it must be “up and running” 99.9% of the time. This level of service costs between $350 and $750 per month per connection. Most vendors or VARs recommend having two lines of connection to further reduce the risk of disconnection. Remember, if your Internet connection goes down, so does your access to the EHR. The Internet connection may be completed as a license purchase or a subscription.

Annual software support usually costs between 15% and 20% of the license fee. With subscriptions and ASPs, the support can be bundled into the monthly rate. You must be certain that the support hours correspond to the bulk of your office hours. After-hours support, including support on evenings and weekends, is usually available for an additional fee. If you are not using a VAR, you should enter a separate hardware support contract with a local company. However, distributing hardware and software support between two separate sources may potentially lead to finger pointing if, and when, a serious problem arises with the system.

Ease of use can be determined only by using the product. I recommend that you attend trade shows and visit practices that already have the system in place. If you arrange for a demonstration in your office, block out at least two uninterrupted hours. You and your staff need to have hands-on experience with the system to make an educated decision. Never rely solely on a salesperson’s canned presentations. Some vendors will give you access to Web-based versions of the software or give you time-limited demo copies to use in the office. If you qualify, enroll in DOQ-IT. Even if you don’t qualify, take advantage of all the free tools on the DOQ-IT Web site to prepare for and implement an EHR. The Medical Society of New Jersey (MSNJ) and many local county medical societies are also a good resource. They offer presentations by physicians who are trained to discuss this topic.

The degree of interoperability is one of many features that make current and future versions of EHRs so useful. To assist you, CCHIT has a Buyer’s Guide on its Web site (see list of links at the end of this article). Currently, many of the EHRs permit receipt of laboratory results, electronic requests for medication refills, and electronic transmission of medication prescriptions.

Many software companies are publicly held, and their financial information is readily available. Privately held companies may provide you with financial data upon request. When you do make your purchase, always request a copy of the source code, via an escrow account, in the event of the financial failure of the company. This improves your options if transitioning to another vendor becomes necessary.

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www.qualitynet.org (this is the new website for DOQ-IT)
Electronic Medical Records – One doctor’s positive experience

Salvatore Volpe, MD, has 17 years of primary care practice experience. He sees 1500 – 2000 patients and is board certified in Pediatrics, Internal Medicine, Geriatrics and Quality Assurance. It’s almost impossible to believe that a solo practitioner this busy could sacrifice all the time, energy and funds necessary to implement his own Electronic Medical Records (EMR) system.

You may be surprised to find that it’s actually not as difficult as people may think, and the benefits far outweigh any initial inconveniences, according to Dr. Volpe.

In fact, once his office went electronic, the quality of life improved significantly for himself and his staff, he was able to cut costs appreciably, and patient satisfaction hit an all-time high, he said. And good news: he also said that selecting a system and implementing it wasn’t all that difficult either. In this article, Dr. Volpe gives his personal experiences with EMRs.

Quality of Life

“I structure work around my life now, not the other way around,” said Dr. Volpe, who gave examples of the newfound versatility he enjoys with EMRs, which were implemented in his office last April.

“If I want to sleep in tomorrow, I can, or if I want to go see my 15-year-old play in a marching band competition at the Meadowlands tonight, I will,” said the doctor. Instead of driving to the office for tasks like viewing lab reports, Dr. Volpe said that he can now access them anywhere – even from the comforts of his own home.

“After just six months of having EMRs in place, my office manager was able to work from home after having a baby,” said Dr. Volpe, who lectures on topics involving Health Information Technology, such as e-Prescribing and Electronic Health Records. “She was checking voicemail messages, taking calls, addressing things as they came in – all her regular job duties.”

Savings

Another major benefit Dr. Volpe has seen so far is the cost savings that came with implementing EMRs. “I used to have two full-time employees and two half-time,” said Dr. Volpe. “We are now operating with two half-time employees and two quarter-time – that comes out to an annual savings of $30,000.

“Plus, we were able to bump up revenue by 10 percent by increasing billing. This is done because I am now able to conduct better, more in-depth exams with complete history.”

And for those concerned about the cost of EMRs, Dr. Volpe had this to say: “After doing the research, I found software for only $10,000. I know of other doctors who spent closer to $40,000. If you do the research and find the software that best fits your needs and your practice’s needs, you will avoid paying too much.”

Dr. Volpe explained that he served on the New York State Information Technology Task Force, and after reviewing over a dozen companies, they were able to narrow all the EMR-related software down to a short list of seven products – and that included something to accommodate everyone from a solo practice to a large group.

“I tell doctors who are considering EMRs to think of it this way: if your expenses drop by $30,000, that’s the same as making $60,000. How many patients would it take to make that much money? At $50 per visit, that would be 1200 patients. Now, you can spend that time with family… or if you’re so inclined, see those patients and make the extra money,” he said.

Patient Satisfaction

Half the time, patients walk out of an office and forget what the doctor just told them, explained Dr. Volpe. But thanks to EMRs, he said that problem is practically a thing of the past.

“Normally my notes are illegible, but now I am able to write in my convertible tablet, and the software processes what I write and turns it into text,” he said, adding that his SOAP notes (subjective, objective, assessment, plan) are easy for the patients to follow, and he is able to print them out, attach them to the diagnosis and give them to the patients.

Now, when a patient is referred to a specialist, they can bring these notes with them, he explained. “That way, the specialist has the benefit of seeing what I think is going on, and this eliminates their need to pull that info out of the patient. So the doctor can focus on the medical issues instead of acting as a scribe.”

It also helps with phone calls and customer service, said Dr. Volpe. When a patient calls the office to ask about the reason a certain test was recommended by Dr. Volpe, for example, he said that his staff can quickly access the notes and read the reason directly to the patient, eliminating the time it would normally take for the staff member to walk across the office, search for the files and locate the information (and try to decipher Dr. Volpe’s handwriting, he added).

Another example the doctor gave that demonstrates increased patient
satisfaction was a situation involving a 21-year-old patient. He came in to see Dr. Volpe with a sore throat and enlarged tonsils. He had a throat culture done and was sent to the lab for blood work because Dr. Volpe said he was concerned about mono. A day later, the patient went to the Emergency Room with a 103-degree fever. Because he had Dr. Volpe’s notes with him from his visit, the ER staff was able to access his blood test results and deduce that he had mono. They administered him a shot of steroids and sent him home, said Dr. Volpe, avoiding the need to admit the patient and conduct their own tests.

Yet another major benefit of EMRs is its far-reaching database. “As doctors, we are trained to look for any potential adverse drug interactions. But with five million medications on the market today and five million permutations of those medications, it’s unlikely that we are going to catch every one.” Using EMRs, he said, reduces the likelihood that an adverse drug interaction could slip through the cracks.

And because EMRs can be accessed anywhere, at anytime, the versatility is seemingly infinite. “A patient of mine was in Florida and visited my counterpart, who was able to log into my files and access the patient’s records,” said Dr. Volpe. “It’s really, really cool.”

About Dr. Volpe

Dr. Salvatore Volpe, MD, FAAP, FACP, CHCQM, has served as a medical director or associate medical director for several national and regional Managed Care Organizations including Aetna/US Healthcare, GHI, Touchstone Health and United Healthcare. He is member of the Board of Directors of Medical Liability Mutual Insurance Company. Dr. Volpe has been interviewed by such diverse media sources as Crain’s NY Business, Medical Economics Magazine and Time Warner NY 1. He currently serves on the medical editorial board of Medical Economics Magazine and travels around the United States lecturing on topics involving Health Information Technology, such as e-Prescribing and Electronic Health Records.

Dr. Volpe is the recipient of the 2007 IPRO Quality Award. The award was presented in recognition of his commitment to improving care for Medicare beneficiaries, as reflected in the work he has done to create a patient-focused environment within his practice, and his work as a physician champion in promoting the use of electronic health records and health information technology for quality improvement.