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# Community Hospitals and the Electronic Health Record (EHR).

HCA450 - Healthcare Information Technology Management.

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## Section 1: Health Care Information Technology in Organizational Settings in the Health Care Industry

There are several organizations at the forefront of Healthcare Information Technology (HIT). Community Hospitals are one. These are the most important because they affect the community as a whole. At some point in our lives we end up in a hospital, and the technology they use help them to provide a standard of care. The technology also forces them to re-evaluate their policies, procedures, and work flows.

Physician practices are also important. Although, physicians are still very slow to adopt HIT because of cost. Even though they may have a greater impact regarding the patient because we see them more often, than say the community hospital, the HIT that some physicians have already adopted have helped them with outcomes. It has allowed them to work somewhat more efficiently by reworking office work flows, and the technology, such as e-prescribing, has limited errors in prescription.

The Health Information Systems department is also one organization that makes an impact. These are highly trained individuals that develop, and work with those in the healthcare field to maximize HIT in regards to how it can help patients. They fix things when broken, and provide training on the new technology that comes down the hi-way for those in the medical profession. If a medical professional does not know how to use it, it will not be effective.

## Section 2: Health Information Management

Over the past several years Healthcare Information Technology (HIT) has infiltrated the medical profession at a rapid rate. At the forefront of this is the Electronic Health Record (EHR), although used interchangeably with the Electronic Medical Record (EMR) the EHR does what the EMR does, which tracks patient data, alerts clinicians when a patient needs a checkup

among many others, but the EHR is designed to focus on overall patient health and offers a broader view on the patients' health (Garrett, 2011, pp. 1, 4, 6). This has wholly changed community hospitals by forcing them to re-evaluate the procedures, and practices in terms of patient care, and the standards involved.

The EHR has been pushed into service through public policy. The Office of the National Committee of Health Information Technology (ONCHIT) was funded by The Health Information Technology for Economic and Clinical Health Act (HITECH), which is part of the American Recovery and Reinvestment Act (ARRA), and the ONCHIT believes that every institution and provider needs to be computerized (Burke & Weill, 2013, p. 19). Enter the EHR.

Another reason that brought on these acts is Medicare and Medicaid. Because Medicare and Medicaid are a large source of health care for many elderly, disabled, and low income it is important that the government try to save money on these expenses. The idea behind the EHR is to promote health. If people are healthier, and are better cared for they will need less medical attention, and trips to the hospital thus, the long term goals is not only a healthier population, but less payouts for the government.

The big thing behind EHR's is meaningful use, and this is where EHR's shine within the community hospitals. The concept of meaningful use is using the EHR to reduce healthcare disparity, improve efficiency, safety, and the quality of healthcare among many, many other objectives (HealthIT, 2014, para. 2). The EHR system within a community hospital collects various data, and informatin to help with this.

There are many points that reflect meaningful use. These include office visit informatin from demograpics, symptoms, to vitals (Burke & Weill, 2013, pp. 24-25), among many more that will eventually be deemed a requirment as time marches on. Personal information such as

age, along with medical information like allergies, high blood pressure, heart disease along with other information, is used when comparing other similar data. Where this becomes important is when those with the knowledge of how to compare this data can find patterns, see what works, or does not work, when it comes to patient care.

The goal of any community hospital is to provide high quality, safe patient care. The EHR's enhance these goals by making these professional more adept at their jobs. Many EHR systems have the ability to take away prescribing errors with alerts, they can alert a nurse to a potentially dangerous dosage and correct it. They can take the EHR information from the surrounding community, and re-evaluate how they interact with that community. This makes them much more than the brick and mortar building they operate out if, it makes them a part of the community.

## Section 3: Information Systems Assessment, Selection, and Implementation

A community hospital must keep several things in mind when adopting an EHR system. Adopting an EHR is a project, and with any project clear, concise goals pertaining to what is to be achieved is most important. This can be accomplished by putting together a team with both information technology and medical professionals, along with a planned budget. It is only then can they begin the process of adopting an EHR.

Deciding that a community hospital needs an EHR is not enough. They must perform the proper assessments, which include reviewing the software currently being used, and one of the most difficult challenges is getting people on board who are willing to accept the many changes to come, but most of all, that are they prepared to invest in the overall changes pertaining to practices and workflows (AthenaHealth, Inc., 2010, p. 9). These things can cause issues with

accepting change. These are important, because this will determine which EHR software that will best suit the facility in order to provide top level quality of care for the patients.

There are many EHR software packages out there. The problem comes in when people desire one over the other for personal reasons. This selection must be an objective one, and for the betterment of the patients, and the facility. This assessment is key, when the assessment is considered, the selection process can begin as to which software package would better suit the current, and future needs of the institution.

There are other things a community hospital must consider when selecting an EHR. Privacy and security policies must be readdressed, because the information this system will now hold has the potential to be linked electronically with other healthcare institutions, and therefore opens up more possibilities for harm to the computer system which can threaten everyday business (Burke & Weill, 2013, p. 290). They must take into account the network it will run on, any standalone applications such as Lab, radiology, and pharmacy software that may need to interface with the EHR.

However, in order to successfully implement an EHR, a vendor that will work with the community hospital is critical. A vendor can make, or break the success of an implementation. When interviewing a vendor, the community hospital must be sure that they provide critical services such as, training, interoperability with outside organizations, and most important, support for the application (HealthInsight, 2014, para. 6). These are just a few of the vendor requirements that should be looked at.

## Section 4: Management of Information Systems and Resources

Managing healthcare information systems is more than just making sure the equipment and software runs smoothly. Financing, such as donations for digital equipment, can be an

important source of funding for information systems, and the role of the healthcare manager can play a vital part in having staff embrace new technologies by paving the way with open communication between the various departments. Also, clinical, and non-clinical staff have the responsibility for the delivery care (Kabene, Orchard, Howard, Soriano, & Leduc, 2008, para, 7). The main roles and responsibilites needed are not only the technical professionals who know how to make sure the software run smoothly, but the clinical people must be computer literate. They should be able to take advantage of this resource, critically analyze the data and judge what information is important (Burke & Weill, 2013, p. 2). The management of information systems is an ongoing processs, and must be treated as such. A continous quality control process should be used to mainatin functionality.

## Section 5: Assessing Emerging Technologies

There are many new technologies emerging that may be relevant to any healthcare organization. One is social media. In a survey, if a healthcare institution, such as a community hospital, used digital communications regarding healthcare, 51% said they would feel much more valued as a patient, while 41% alluded that using social media would affect the healthcare provider they choose (Trader, 2013, para. 5). Community hospitals should be using this promote the services they offer to the community at large.

There are other technologies as well. As technology gets smaller and smaller the applications for medical use open up. Macro, along with Nano Technologies have the ability to remotely screen, and give early detection in the disease process, these can be used to continously monitor physiology of non-acute, and amulatory patients, the microscopic sensors can serve as probes to determine what is going on with an organ, or tissue, and also at a molecular level, these

devices are used to aid in drug delivery and even DNA modification (Grimnes, 2013, p. 5). This last is mainly due because of the advancements in gene research.

One of the most prevelent technical advancements in the medical field for community hospitals is the ever growing option of telepresence surgery, and telemedicine. This type of surgery is done at a distance, where the surgeon does not necessarily need to be in the room, all they need is a robot to direct, and staff to do the leg work, also with this type of technology many surgeries have become what is called minimally invasive surgery (MIS) (Burke & Weill, 2013, p. 159). If possible, many patients opt for this because it helps with heal time. Telemedicine has the ability to help small facilities offer patient care in remote areas where a doctor may have the ability to get consultations through a broadband connection. This is escpecially useful in emergency situations where a facility could be several hours away.

However, just because much of this technology is available, it does not necessarily mean it is right for the community hospital. There are many things to be considered in assessing what technology a facility should offer. These include cost, which entails the technology itself, the staff to operate it, repairs, updates, and a slew of others. Also, whether or not it is needed, and how will the community benefit from it. Purchasing technology for the sake of it could be costly in ways not yet interpreted, and therfore must be considered carefully.

Just because a facility, after proper assessment, has decided to offer a technology, there is something else to be looked at. People, inherently, dispise change. For instance, the EHR, many medical professionals still fight against the adoption of this technology. They cite a grand number of reasons for not going forward with it, although it has been around for many years. It is only now that many are being dragged kicking and screaming into the healthcare ditigal area

concerning the EHR. Mainly because of government involvement pertaining to Medicare and Medicaid payments, which most of the elderly are members.

## Section 6: Evaluate the Value of Information Technology

Information technology within the medical field, and the community hospital, has value. Certain information technology, such as store-and-forward, such as with image based technology like x-rays, magnetic resonance imaging, or CT scans, where these scans can be stored, then forwarded to those who are able to read them for a quick, or later analysis depending on the scenario (Burke & Weill, 2013, p. 64). Store-and-forward technology is not only convenient, but helps the facility accomplish its mission, and goal to provide quality healthcare in terms of quick and accurate diagnostics.

Another form of information technology that helps the community hospital meet its objective goals is the EHR. This health information management system, if assessed correctly, deployed properly, and used to its full extent, can advance patient care, steer work processes in a positive direction, promote clinical data exchanges, be the vanguard for patient safety and care, more importantly allow doctors, and allow skilled clinicians to provide a level of healthcare previously unheard of (Grimnes, 2013, p. 4). The value of the above technologies is not just seen through the dollars spent to incorporate them into the facility setting. The intrinsic value of health information management systems is difficult to quantify, but the simple fact is that these systems save lives.

## Section 7: Security and Privacy

The security and privacy of health information is an important issue. The Health Insurance Portability and Accountability Act (HIPAA) of 1996 was a major player in terms of security and privacy, The goal of HIPAA is protect the individuals privacy when it pertains to

health information that can identify them, such as demographics like name, age, among many other identifiable pieces of information, it also states the person must be notified when this information is transferred to other health care providers also, that staff not be allowed to discuss patients, and there medical information in waiting rooms, malls, the post office, and any other area that is deemed public (Burke & Weill, 2013, p. 21). This is just some of what HIPAA affords to us regarding privacy; security of the information is another issue.

The security of this information, like any information, can be difficult to manage with health information systems, and administrative, physical, along with technical safeguards must be put into place. A risk management assessment must be done from an administrative level which involves top management, roles and responsibilities must be outlined, security policies pertaining to passwords, key cards, and the like should be established, this can be done by appointing a medical information technology risk manager who is responsible for the process of securing the data system, the interoperability of said system, its effectiveness, and most importantly they will need to engage any and all stakeholders involved with the system from department managers to those who use it (Grimnes, 2013, p. 16). These steps are only the beginning to securing the privacy pertaining to health information.

Health information is beginning to fall in the realm of information technology, which has had a continuous quality control process for many years called Information Technology Infrastructure Library (ITIL), ITIL takes into account many items, but foremost it is concerned with business needs and core business processes, it is a guide on how to use IT as tool and facilitate business change which involve five core publications that outline a professional and systematic approach for the management of IT systems, basically these processes encompass identifying the needs of the customer which drives IT requirements involving design,

implementation, and continuous monitoring (ITIL, 2014, para. 2-4). ITIL has the ability to bring the health information system to new levels by having those who support it, work with those who use it. It can also help with defining policies regarding ethical issues, and breaches.

Ethical issues are a big concern. Several companies such as Cerner and Allscripts have sold supposedly unidentifiable health information from their EHR's to pharmaceutical companies however, with a little leg work this information can be rediscovered also, those who do not have authorization to view an EHR record, such as in a hospitalized celebrity, is an ethical breach of privacy, another valid ethical dilemma are the rights of adolescents when it comes to their health information and what the parents need, and do not need to know pertaining to treatments and parental consent (Sittig & Singh, 2011, para. 10-11, 13). Security and privacy is important, and must be taken seriously.

## Section 8: Systems and Standards

The systems involved that community hospitals use to deliver healthcare, particularly the EHR, can by quite complex. The architecture of these system include sophisticated components that include electronic motherboards that hold memory and the main central processing unit (CPU) where algorithmic and logical operations are performed, this helps with database operations where large quantities of the EHR information is stored and can sort through this information rather quickly, and then transports it across the telecommunications network which consist of a local area network (LAN), or the wide area network (WAN), which consists of interconnected wires, such as from a main data storage building, or the internet, this can also include wireless technology known as WI-FI, which many community hospitals use internally for certain devices that have permissions to access EHR data (Burke & Weill, 2013, pp. 6-8). All of these things help facilitate patient care.

Major types of classifications and standards must be met in order to certify an EHR. The ONC determined temporary and permanent certifications standards in 2010 and 2011, respectively to meet meaningful use objectives set by Medicare and Medicaid (HealthIT, 2014, para. 1-3). These standards must include the use of HL7 which is a detailed messaging system that enables communication between disparate systems also, conform to the open system interconnect (OSI) model that refers to a framewwork developed by the ISO to ensure interconnectivity (Murphy & Brandt, 2001, pp. 68A-D). These are just few that must be met to have an EHR certified, and there are many more. The process is arduous for any company devloping software for the field of EHR's.

## Conclusion

The electronic health record in the community hospital is vital piece of software. There are many facets behind this piece of technology. They range from the hardware of the computers, to the in the interworking of the databases that house the sensitive information. Because of the sensitivity, security procedures, policies, and processes must be identified, put into place, and enforced otherwise the system fails not only the hospital, but the community and those who have worked so hard reaching a level of excellence to support it, and use it. The moral responsibility of those that support, and use this technology is a critical aspect of how well the community hospital serves those that come to them to fix what ails them. This technology helps bring a level of excellence to the character of those that use it by allowing them to be better skilled at what they do, and give them confidence in their decisions.

Along with those who use EHR systems, we must not forget those that design them as well. If it were not for both parties, these systems would not exist. The integrity of those involved is paramount to the success of these systems. There needs to be honesty when it comes

to developing these systems with those who use them. The consistency of medical codes for drugs, procedures, and the information tracked regarding patient care should have integrity to it beyond reproach. If these professionals are able to perform their actions, and enter honest information into these systems that all can identify, it will benefit those that come after.

However, this will take time. These systems are still relatively new, and many still fight there usage, but this will fade. This is because technology has become a major part of the lives of those now entering into the medical field. This is the way of all things that are new, the old fight change while the young embrace it. As the old regime ages, and fades away the technology will prevail, and it is then that the EHR, along with other medical technologies, will have ability to flourish, but the integrity, and excellence needed for them will still be required.

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