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Abstract

The security of patients in hospitals has constantly attracted aggressive controversies. Most people agree that all efforts must be pulled together to ensure that the safety and security of the patients is guaranteed. However, in an institution struggling with increased amounts of medication errors and the implementation of the electronic medical record (EMR), ensuring safety of the patients becomes a serious challenge to many institutions. The nature of security required calls for the people to implement solutions that should match the expectations of the patients in their security at the hospitals. The level of technology used in the complete health care process requires the medical personnel adapt advanced protection systems. The paper discusses the possible solutions to such challenges in terms of implementation, ease of use, compliance, cost, and occurrences medication errors. The study also analyzes the advantages and disadvantages associated with each of the solutions to the medical challenges and the whole process of implementation.

Patient Safety in the Hospital

The Business Scenario

Ensuring the safety of patients and personnel in hospitals and other health institutions is an imperative practice. However, most health workers and practitioners have little knowledge of safety measures to undertake to ensure safety due to lack of adequate training. It is apparent that patients are at a risk of suffering injuries and other problems if measures for ensuring

their safety are not adopted. In an organization struggling with increased amounts of medication errors and the implementation of the electronic medical record (EMR), the safety of the patients is under a greater risk thus the medical professionals must establish strategies for improving the health of the patients (Teunissen, Bos, Pot, Pluim, & Kramers, 2013). A wide scope to develop measures and procedures will ensure that patients do not suffer injuries and challenges while trying to access the technologically advanced procedures in hospitals. Concisely, the electronic medical record system and medication errors provide an opportunity for development of methods and features to better the security of the patients in the hospitals.

Many challenges occur when dealing with the patients leading to increase in accidents and painful incidents in the hospitals. Firstly, some of the patients forget the details about their medical records and the instructions that they get from different medical practitioners. This leads to double doses and under dosing which interferes with the recovery process of different patients in the health institutions. Furthermore, some of the patients mishandle the equipment used in medication because they do not have the skills to use the equipment. The lack of training and prowess among the health attendants also make the utilization of advanced technology in the health sector challenging (Prusch et al, 2011). Gaps in the medical field provide an opportunity for people to develop systems and procedures that will be vital in solving the medical problems and challenges in the hospitals.

The Business Organizations and Structures

The problems encountered by the people in the health care sector especially in the organizations struggling with increased amounts of medication errors and the implementation of the electronic medical record occur due to a number of reasons. Initially, the level of education and the study areas matter a lot in the lives of the people (Ball, Weaver, & Kiel, 2004). Most of the people do not have the basic health and protective education hence whenever they go to the hospitals; they lack the knowledge to use the basic tools and equipment. At the same time, the technological advancement is occurring at a fast rate. Some people do not pay attention to the changes in technology hence they do not know how to handle the latest technological implementations (Brown et al, 2012). Lack of such knowledge means that the people cannot handle the electronic medical record system hence the errors and insecurity that they face.

Lack of proper training is another reason that accounts for over a third of the accidents that occur in the health institutions. Whenever there is change in an institution, the people must be enlightened on the change through trainings and seminars to enhance the skills in dealing with change.

However, most of the health care institutions get it all wrong on training. Some of the practitioners do not even have the basic skills in dealing with the systems. This puts the safety of the patients at stake as the unskilled attendants can easily mess with them. The inefficiency in the use of the systems also comes because of the complications of the systems. Most of the advanced systems have complicated features that require breakdown like use of bar codes in order for them to be effective in their use.

Information storage should also be simplified in order to secure the patients in hospitals and enhance their service delivery and reception.

Requirements for the Best Solutions

The best solutions to the health care problems and the business scenario require that all the stakeholders pull their focus to the issue. Firstly, the managements of the health care institutions must ensure that they take keen notice of their roles in the solutions so that they provide a good environment for the implementation of the solution. The nurses, doctors, and other practitioners must also take note of their role in the solution process in order for them to provide the best help to the patients. However, the people who bear the greatest role in the solution are the patients. They should not only know the solutions to the problems but also be part of the solutions. The best solutions to the problems at hand especially in an organization with errors and electronic systems must be easy to understand for the people. The current systems in the health sector endanger the safety of the patients because the patients cannot understand the systems with ease (Choo, Hutchinson, & Bucknall, 2010). The patients know what they need to do in order to remain safe but they cannot interpret and decode the same information when using the technically advanced systems. When devising a solution to apply in the sector, the solution must deviate from the technical norm of the systems applied in the health care to ensure that people can understand them regardless of their level of education.

The solutions must also be cost effective. Most of the patients will object to the issue of buying systems and procedures that push the cost of treatment

higher than normal. The systems should ensure the patients are safe while at the same time taking care of the financial factors. However, the cost effectiveness of the systems should not be the reason why the organizations go for cheaper and lower quality systems. The organizations should ensure that the solutions add quality to the treatment and diagnosis of the patients while taking care of their security of the patients. The security areas should include the electric threats, threats of fall and slippery floor accidents, threats of allergies, reactive manifestations, and protection from unhealthy activities from the practitioners (Paoletti et al, 2007).

The solutions to the problems affecting the health care sector should also have a going concern and take care of the financial status of the patients. In the past, some solutions have been proposed to the problems and challenges but they lasted a very short time. At the same time, some of the solutions were abandoned even before they could be fully implemented. However, for solutions to get to effective, they must be long-term and with a higher degree of permanency. Programs and solutions with a going concern encourage the people and give them a longer time to learn the basics and even plan for the training sessions.

Healthcare System Solutions

The main business problem of patient safety in organization struggling with increased amounts of medication errors and the implementation of the electronic medical record (EMR). This literature review will indicate three possible solutions for the stated business problem. The information in this paper will clarify the advantages and disadvantages to each solution with

support from current the literature. The advantages and disadvantages addressed in this paper will be weighed against the objectives including the implementation, ease of use, compliance, cost, and occurrences medication errors. An article written by Ball, Weaver, and Kiel (2004) identifies these objectives and properly reviewing them is important for the transformation of a system.

Patient safety continues to be a growing concern and financial consequence in the healthcare community. A method to assure patients are safe is the implementation of the EMR with the three solutions of bar-coding, dual verification by nursing professionals before administration, and pharmacist confirmation. As written by Teunissen, Bos, Pot, Pluim, and Kramers (2013) medication errors affect patients in the hospital including the prescribing, provision, arrangement and monitoring of the medication. It is indicated that 50-70% of all medication errors are related to the bedside nurse who is distributing the medication (p. 1052).

The first option to increase patient safety in relation to medication errors is the application of bar code scanning. The process of bar code scanning is to scan the primary nurses' bar code, scan the patients' wristband, and scan the medication (Saginur, Graham, Forster, Boucher, & Well, 2008).

Medications will appear on the medication administration record (MAR) verifying the correct medication and dose. Bar code scanning also allows for the capability of tracking how often the nurse scans the medications and encourages any input of documentation before the medication is distributed. An advantage of bar code scanning is the initiation of the medication being administered at patient's bedside. This has shown to decrease medication

errors by 54% increasing safety and accountability for nurses proves the second advantage to bar-coding (Paoletti et al., 2008). The third advantage is the certainty of the medication being administered. These three advantages listed contribute to the overall goal of patient safety.

Bar code scanning also has disadvantages creating opposition towards the potential benefits. The first major disadvantage is the compliance of the nurse passing the medication since this process can be bypassed (Allen & Sequist, 2012). The second disadvantage includes the probability of deflection in the equipment and frustration from staff with these occurrences. The third disadvantage is the bar codes that must be scanned because not all are effective for scanning from different companies (Paoletti et al., 2008). When weighed against the objectives of implementation, ease of use, compliance, cost, and the occurrences medication errors the bar code scanning leads in compliance and a decreased amount of medication errors (Paoletti et al., 2008). The objective of implementation includes easing the use of these technologies and reducing the costs. The intent of decreasing the amount of medication errors is appropriate for the goal of these implementations.

The second option to increase patient safety in relation to medication errors is the application and requirement of dual verification by nursing professionals on the EMR before administration. This verification incorporates dual signatures in order to give a highly potent medication. The distribution of these medications requires the five patients' rights and the responsibility of checking the medication (Choo, Hutchinson, & Bucknall, 2010). Creating this accountability for the administration of medications such as heparin and

insulin will promote safety and awareness.

The first advantage of dual verification of nursing professionals on the EMR is it provides liability and accountability for the dose that is to be given (Brown et al., 2012). This will protect patients from getting overdoses and under doses, which affect the recovery in most of the patients especially in the advanced hospitals. The second advantage is the opportunity to educate the patient on the medication being given. The lack of knowledge among the patients on how to apply some treatment tools and machines make the treatment process hard because the patients end up hurting themselves in the process of treatment. Having a dual signature allows the nurse to be in the moment with a patient and cultivate a learning environment. The third advantage is the substantial amount of time spent in the patients' room. Not only does this advantage keep the patient safe but it also helps with contentment in the hospital.

Dual verification also has disadvantages creating opposition towards the potential benefits. The first disadvantage of dual verification is the creation persistent alerting causing inconvenience (Frölich et al., 2011). The second disadvantage of dual verification is the interruption of workflow for the verifying nurse. The third disadvantage of dual verification is the amount of time consumed to verify a medication. Dual verification while effective does interrupt another nurse from other duties that are also valuable.

When weighed against the objectives, implementation, ease of use, compliance, cost and the occurrences of medication errors it was found that dual verification of nursing professionals was not as popular. Dual verification proved to score average to low on all objectives (Choo et al.,

2010). While effective and appropriate for highly potent medications it was time consuming with inappropriate medications. As much as it was not popular among the people, dual verification was efficient, as it would give the patients enough time to learn about the medical safety issues.

The third option to increase patient safety in relation to medication errors is MAR pharmacist verification before a medication is given. A pharmacist must accept a new medication in the MAR in order for it to be pulled from the Pyxis and scanned. This allows the pharmacist time to look over the medication dose, route, side effects, and any other indications. If the medication is rejected the pharmacist will alert the nurse. If the medication is confirmed the medication will be available to pull from the Pyxis.

The first advantage of pharmacist verification is the increased communication between doctors, pharmacists and nurses (Prusch, Sues, Paoletti, Olin, & Watts, 2011). Effective communication among the stakeholders will ensure that the information on treatment of a patient is clear among patients. The second advantage is the opportunity for additional education on medications provided by the pharmacist to the doctors, nurses, and patients. The third advantage includes proliferating gain in safety precautions because two professionals are reviewing the medication and its necessity. An error made by one of professionals can easily be noticed and eliminated by the other professional hence safety is maintained in the treatment process.

Pharmacist verification also has disadvantages creating opposition towards the potential benefits. The first disadvantage is the compliance of the pharmacy or pharmacist. Most of the pharmacists may be rigid and fail to

conform to the requirements of the verification hence they may not observe the keenness needed. The second disadvantage is a heavier workload for the pharmacist along with the other tasks that must be accomplished in a normal workday. This may discourage the pharmacist from undertaking the program since the workload may threaten them in their endeavors. The third disadvantage is the possibility of an EMR that could malfunction (Prusch et al., 2011). The EMR functionality could potentially create disarray. With the initiation of more responsibilities for the pharmacist, it may be appropriate to add more pharmacists when workload is high.

When weighed against the objectives implementation, ease of use, compliance, cost, and the occurrences of medication errors pharmacist verification was shown to be average too low for meeting the objectives (Prusch et al., 2011). Pharmacist verification is helpful in reducing medication errors and easing the use of scored average. Compliance did not score as highly in relation as bar code scanning. However, if the solution were properly implemented, it would ensure much safety among the patients as the verification would make the process more efficient.

Appendix B

Comparison of Solutions

Recommendations and Implementation Issues

In the implementation of the proposed solutions to the will, take shape only if certain measures are assumed to eradicate the challenges and problems faced in the sector. Initially, the patients and medical attendants must get the relevant training so that they do not hinder the implementation program.

Through training, the patients and practitioners will be educated on the use of the bar codes and the best ways they can use to reduce errors when using the bar codes. The training will also help in dual verification as nurses and pharmacists will learn the best methods in verifying the results and tests used (Allen & Sequist, 2012). Training to the pharmacists will also help in the verification, as they will know the best things to consider in the pharmacist verification.

The other solution to the implementation issues is the development of implementation systems and mechanisms. In most cases, the safety of the patients comes under question because there are no systems in place for solutions to the challenges to lack of patient safety (Saginur et al, 2008). In order to implement the solutions easily, the management in the health organization must install systems that targets eradicating the difficulties in the implementation of the proposed interventions. This will include development of technologically advanced equipment that will ensure they have ample access to the bar codes and other systems. Based on the weighted objective of the organization, the best solution to the organization is the use of bar codes. This is because the bar codes are the best in terms of implementation, cost minimization, ease of use, and limit on errors. However, implementers will be concerned with the knowhow of the people, systems in place for the implementation and the good will of the management at an organization.

Recommendations to the Organizations

In the process of implementing the proposed solution in order to improve the safety of the patients, I would recommend a number of things to

organizations interested in such endeavors. Initially, organization must train people to ensure they undertake the implementation to the best levels. Furthermore, organizations must develop systems to ensure the barriers to implementation are broken. The management must also show the willingness to undertake the projects in order to remove any institutional barriers that may exist.

Conclusion

The safety of the patients is at stake in most of the health care organizations especially the organizations that are practicing sophisticated procedures that require the adoption of newly advanced technology. This arises from improper training, rigidity, and institutional barriers in these organizations. Adoption of strategies such as bar coding, pharmacy verification, and dual verification can address these challenges. However, organizations must work on barriers that hinder the implementation of the proposed strategies for high efficiency.

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