Patient needs must come first in all healthcare settings, regardless of where they are being served. The health care system must be reformed in order to meet this objective. Large volumes of information may be really useful. Big data and data management has been a trending issue for the past two decades due to their immense potential. Intending to improve the services they offer, several private and public area organizations produce, store, and analyze big data. Medical records of patients, hospital records, gadgets, and results of medical examinations are a crucial component of the internet of things. These are only a few sources of big data in the healthcare business. This paper will determine how data is used in healthcare, from the inside and out. Data mining, the application of informatics, and continuity planning in healthcare will also be explained in this report for a better understanding of this subject.

Big Data and Data Mining

To begin, it is important to realize that while the concepts of data analysis and data mining are related in essence, they represent two very distinct ideas. When people talk about "big data," they are referring to a large collection of data. Due to the exponential expansion of the data, it contains, big data eventually becomes unmanageable because the data becomes too big to measure (McAfee & Brynjolfsson, 2012). Spreadsheets from Microsoft Excel are a good illustration of huge data because data is continuously added to these spreadsheets. On the other hand, data mining is the process of sifting through large amounts of data in an effort to find valuable information. Data mining is akin to the expression "searching for a needle in a haystack." There are several types of software programs that are used in data mining. The goal of data mining is to find targeted results from a massive search (Tan et al., 2016). A root cause analysis is a form of data mining that is used in the healthcare industry because through root cause analysis, the management tries to find information about factors that are affecting the

performance of the healthcare facility. For instance, if all male patients on one floor have urinary tract infections, root cause analysis will make it possible to trace the underlying problem in the healthcare setting.. To uncover the elusive "needle in the haystack," they will have to sift through mountains of big data.

As a nursing student, I am interested in surgical site infection statistics and root cause analysis. Excel spreadsheets used by the hospital to keep tabs on patients who underwent surgery and how many of these individuals had surgical site infections are the significant data in this case. Surgical charts, histories, compliance, and prescriptions would all be subjected to data mining to discover any patterns. When sifting through data, it is hoped that operations with a high incidence of surgical site infection will emerge. Which surgeons are the most prone to acquiring an infectious disease? How many medications are not covering the patient and so allowing the illness to surface? I find this to be an intriguing subject matter. However, surgical site infections, although being a huge revenue generator for hospitals, can quickly put them out of business. A lawsuit against a hospital is not something they want to deal with because they rely on money after a successful procedure. Surgical nurses and surgeons would considerably benefit from this large-scale data mining and big-data collection. The surgical site infection can be avoided when nurses have information about all the data that is available at their disposal. This is because due to data mining, nurses will know what they are looking for.

Having a strategy in place from the beginning of the data gathering period is the best approach to conducting this sort of huge data collection. Setting guidelines for monitoring surgical site infections, for example, is necessary. An exact date range must be used to guarantee that all parameters are as near as achievable. It is necessary to add instrument tracking and sterilization logs while mining the data. As part of the operation, we will need to keep track of

how many individuals are in a room at any one time to determine if it increases the risk of infection. Thereafter, the data given will have to be mined to uncover why, where, when, and how. This will give the hospital as much data as it can so that it can make an informed decision about the case. The healthcare facility will be able to become more efficient and profitable as a result of the procedure.

Continuity Plan

Continuity planning is the act of building systems of protection and retrieval to deal with predicted threats to an organization (Jones, 2019). The obvious objective is prevention, but disasters do happen, and the organization needs to be equipped for them. Patient safety, staff well-being, financial stability, and a positive public image are all dependent on effective continuity planning in the healthcare industry. Continuity planning refers to preparing for the worst-case scenario. It is impossible to know what will happen in the future; however, organizations can certainly be ready for it (Jones, 2019). Even if an IT failure is just temporary, hospital administrators must have a contingency plan in place just in case. Having a continuity strategy in place is critical while working in a standalone orthopedic surgery center. Also, if you work in an area prone to natural catastrophes like hurricanes, violent thunderstorms, and flooding, you will need a solid continuity strategy in place.

I would approach this continuity plan cautiously and consider all the factors that must be analyzed before informatics is applied in the healthcare setting. In the event of a calamity, we have to review all of our operational protocols in detail. The safety of both patients and visitors should be examined. The best course of action at this point is to decide whether or not to continue operations. It must also be determined whether the department needs to be closed down or if facilities should be moved to the primary operating room at our institution. An inquiry must

be conducted to determine what kinds of measures are permitted in this situation so that nurses do not waste resources that they may need in the future. I would use paper charts if the automated process failed to function properly. During a moment of transition, keep employees informed of any alterations or new policies. Practice, as they say, is the key to success. I would also like to play out scenarios with the employees. As a result, employees will be more prepared for when anything like this occurs. There will inevitably be chaos as a result of the change. Being prepared, on the other hand, will help to minimize the mayhem. I believe this could help me immensely in a large workforce and improve the achievement of goals in the healthcare setting.

Use of Informatics

Technology innovations in health informatics can provide tools for patient-centered care or present new challenges. Clinical informatics provides information that makes the job of physicians considerably easier (Khezri & Abdekhoda, 2019). It is also possible to communicate information with patients' loved ones and friends via informatics. Since the earliest days of the profession, advances in nursing education have been made. Every day, new advancements in information technology are made, which is right up there with the education of nurses.

The use of informatics in healthcare education can be implemented through the use of simulation-based learning in which students engage in artificial situations to improve different skills required for the effective delivery of patient care. An article written by Harder and colleagues (2019) discussed the role of simulation designs in non-Manikin activities to improve the prioritization skills of nursing students. The authors suggested that prioritization is a problem for nursing students and fresh graduates. It is a talent that is frequently brought up in nursing classes but is rarely formally taught. Prioritizing patient care and providing justification are

common assignments that are followed by a discussion of whether or not the students' choices were good or bad for the patient. The authors also suggested that the education system lacked an organized process that could equip nurses with such important skills. The simulation faculty at the University of Manitoba was given the option to create new SBEs for the concept-based curriculum. A combination of manikin- and non-manikin-based simulation experiences was devised to accommodate 120 students and to cycle them through the simulation-based experiences (SBEs). Decision points and reasoning for these SBEs were guided by the normative hierarchy of nursing duties. One of the goals of developing a structured framework was to help new nurses learn about the importance of priority in nursing care. It was the responsibility of the students in each SBE to decide which of the five patients had the highest priority for care. Patient records and a verbal report were used to create a fictitious morning report. So, in this scenario, students were tasked with developing their prioritizing skills by choosing which client they would visit first and what was the reason for their decision.

Through the use of simulation-based processes used in the learning process, students can learn decision-making skills that are important when making a decision about which patient to prioritize. Nurses do so based on the healthcare information and data about the patient that they have available to them (Koukourikos et al., 2021). By creating different scenarios that nurses might face once they enter the practice, nurses can identify what factors are the major contributors to the complication, and based on those criteria, and they choose which patient to attend to first. However, some people might suggest that the use of simulation-based learning can be detrimental to education because it is not real; students might see it as a game and reduce the seriousness required for the learning process in nursing. Moreover, simulation software required

to carry out the nursing tasks are expensive and might not be available in every institute, which can create inconsistency in the nursing workforce.

Harder and colleagues (2019) recommended that additional studies should focus on how prioritization simulations affect students' critical thinking, conflict resolution, and prioritization in a clinical situation. In the future, there might be some video-based simulation research that incorporates prioritizing tasks similar to those discussed in chart-based verbal simulations used in this study. The authors recommended that innovation and further research to introduce new simulation techniques to nursing education can improve nurses' skills to compete in the hospitals and provide efficient patient care.

Throughout my nursing education, I had the opportunity to work in simulation laboratories, and I feel they are an excellent teaching tool. It is normal to feel apprehensive as a nursing student. In a simulation lab, trainees may practice running a code, treating patients, and avoiding costly mistakes without exposing a patient to danger. Students of nursing gain self-assurance due to simulation technologies. In this way, individuals may enter the practice clinically and be ready for whatever circumstance they may face.

Conclusion

The world is powered by technology, and people have access to all the information they could need. Every aspect of nursing collects data, no matter how tiny or vast the amount may be. A technique known as data mining is being used to gather data without the user even realizing it. Finding answers and making changes requires mining. Both new and experienced nurses can benefit from the educational opportunities made possible by modern technological advancements. We can observe the consequences of technological progress every day. Nurses should be aware of health informatics in their area of competence. People in the healthcare

industry may not be aware of the importance of big data and data mining. The majority of the time, they learn the technology as they go along, but they are well-versed in patient treatment and care. Maintaining open communication with nurses and other members of staff is a great way to improve an organization's performance. Nursing education can benefit significantly from using health informatics such as simulation-based experiences that could provide nurses with lessons and skills they might require in practice. Without causing any harm to the institution and patients, nurses can safely practice different scenarios, which improve their decision-making and critical skills. This is why more focus must be put on the use of health informatics so that nurses can be prepared for the upcoming challenges such as nursing shortages and the challenges that come with these problems. This would ensure that the nursing workforce is ready to meet any challenge head-on and to improve the healthcare and quality of life for the patients.

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