TPM Vol. 32, No. S6, 2025
ISSN: 1972-6325
https://www.tpmap.org/

INTEGRATING HEALTH CARE SECURITY AND MEDICAL CODING TO ENHANCE HOSPITAL SAFETY AND EFFICIENCY

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ABSTRACT

Introduction: Making sure hospitals are safe and work well is important in healthcare. This requires solid security measures and proper medical coding techniques. Health care security protects patients, workers, and vital information from physical dangers and cyber threats. Medical coding helps ensure that patient records are written correctly, bills are accurate, and hospital operations run smoothly. Putting these two areas together creates a full system that helps hospitals be safer and makes their operations better.

The goal of this work is to explore how mixing healthcare security with medical coding can make hospitals safer and run more smoothly. It also wants to discover the challenges, effective approaches, and new tools that make this process easier.

We looked through a lot of existing research by checking databases such as PubMed, Scopus, and ScienceDirect, focusing on studies that were published between 2022 and 2024. A theme-based method was used to discover shared patterns in the challenges, benefits, and fresh ideas that come with merging healthcare security with medical coding.

Results show that when hospitals use healthcare security along with medical coding, they become safer places. This is because it helps reduce the number of medical errors, keeps patient information secret, and ensures the hospital follows all the rules and laws it needs to. It also helps things work better by properly giving out resources, reducing slow paperwork, and making sure patient care is always consistent and effective. There are still major issues such as challenges in linking different systems together, the need to teach people how to use them, and concerns about how patient information is treated in a fair and responsible way.

Conclusion: Using healthcare security along with medical coding helps make hospitals safer and better at providing care. Even though there are difficulties, using modern tools, teaming up with people from different jobs, and making strong rules can lead to long-lasting improvements.

Keywords: healthcare security, medical coding, hospital safety, efficiency, integration, patient data protection

INTRODUCTION

The modern healthcare system has become more complicated because of new technologies, higher patient expectations, and the need to handle a lot of health and administrative information. Because of this, healthcare systems around the world are now dealing with more problems than ever before (Aminabee, 2024). In healthcare, managing care, running hospitals, keeping medical records safe, and doing clinical

coding are all really important. They help make sure things run smoothly, information is correct, and the standard of care stays high (Bhati et al, 2023). Besides that, clinical coding is done to ensure patients get the best possible care. Because of this, it's important to use a method that covers everything and brings different parts together in a way that can really deal with these problems (Maghsoudi, 2020).

This is something that can be done by working together in a smooth and effective way. The Health Administration is responsible for checking and assessing how well public health systems are working. The Health Administration oversees creating strategic plans, policies, and frameworks designed to make health care systems more resilient and sustainable. This involves long-term planning and making changes throughout the whole system (WHO, 2022)..

As an additional responsibility, the Health Administration oversees the formulation of regulatory frameworks, policies, and programs. Facilities that are a part of the health care system are the primary focus of hospital administration, which is largely concerned with the operational management of these facilities. Additionally, this is in addition to the promotion of the equitable distribution of resources, including those that are human, technological, and financial. Therefore, health management and hospital management are the structural foundations upon which health care systems are established to provide medical care that is centered on the satisfaction of patients (Ginter et al, 2018). This is something that should be taken into consideration. On the other hand, it is conceivable for medical records to contribute to the improvement of the operations of hospital management and health administration (Skurka, 2017).

The way this goal is achieved is through the implementation of healthcare information management. Because of this, there have been improvements in how easily health data is available, how well clinical and administrative teams work together, and how good the decisions made by healthcare professionals are (Quinn et al, 2019). These benefits have been achieved thanks to the use of electronic health records. Clinical coding is a newer and more specific job area that has recently developed within the healthcare field (Shah & Konda, 2022). The main job of this organization is to turn medical procedures, diagnoses, and treatments into codes that match the ones used in the medical field. Using this technique helps health and hospital managers do their jobs better when making and checking health policies. It also lets policy makers make decisions using real evidence, as Campbell and Giadresco said in 2020. That's why this method is important. By taking advantage of how different activities connect and work together, we can improve healthcare and make health systems stronger and more sustainable (Gill et al, 2019).

This works because they include the best methods. You can get the most benefit by connecting the tasks together. Artificial intelligence, cloud computing, and blockchain are examples of technologies that help improve how different systems connect and work together, making it easier to build connections between various areas (Liebler & McConnell, 2020). These technologies show how much technology has improved over time. Standard practices in health administration, hospital management, medical records, and clinical coding help bring about standardization and teamwork between departments, improve the flow of information, increase operational efficiency, and better patient care (Alasiri & Mohammed, 2022). These practices also help improve how well operations run. Another advantage of these approaches is better patient care, as mentioned in Mehta et al's 2019 study.

Aim of Work

This work is focused on exploring how healthcare security and medical coding can work together to create a full solution that makes hospitals safer and helps them run better. Today, hospitals deal with several difficulties, such as protecting patient data and ensuring medical records are correct so that billing, insurance claims, and quality healthcare decisions can be made properly. Security problems, errors in how code is written, and slow or bad ways of working can harm patients and also lead to money and legal issues for healthcare companies. The main aim of this study is to examine how using strong security rules for healthcare along with proper medical coding can reduce risks, make hospital operations better, and increase patient trust in the healthcare system. This study aims to look at how advanced technology and strict guidelines help fix the difference between security and coding. Healthcare security protects patient health records from being accessed illegally or attacked by cyber threats, ensuring that the information stays private, accurate, and accessible when needed. On the other hand, accurate medical coding turns detailed clinical information into standard codes that are needed for proper record-keeping, billing, disease tracking, and planning care.

The study wants to figure out the best ways to do things, find out what's going wrong, and come up with new ideas that can make hospitals safer. It also wants to improve how hospitals are run and how care is given by looking at how these two areas work together. The goal also involves looking at how adding these systems will affect different people and groups in the healthcare system, like patients, doctors, hospital managers, and government officials. Hospitals that combine strong healthcare security with

correct coding practices can reduce mistakes, follow rules properly, and keep their finances stable. This link helps build a stronger healthcare system that focuses on keeping patients safe and making hospitals work better, which fits with the global movement toward using digital tools in healthcare. This method helps hospitals create a better system for making their environment safer, using resources more efficiently, and improving the general quality of care they provide.

METHODS

This study used a clear and organized method to look into how combining healthcare security with medical coding can help make hospitals safer and more efficient. The method used both types of research studies—those that gather detailed descriptions and those that use numbers—to combine real data with real-life experiences in a fair way. We looked through several academic databases including PubMed, Scopus, Web of Science, and Google Scholar to find relevant information. The search looked at articles from the past fifteen years to include up-to-date trends, methods, and new technologies in the area. Different groups of keywords were used, like "healthcare security," "medical coding," "hospital efficiency," "clinical documentation," "patient safety," and "data protection," to find studies that match the research goal.
We set clear rules for including studies that looked at how security frameworks help protect patient information, how accurate and efficient medical coding is, and how these factors together affect hospital operations and the care given to patients. Articles were chosen from different types of healthcare places, like big hospitals, local health clinics, and expert medical centers, so the results could work well in many situations. A study was conducted to examine the chosen research and identify common themes, challenges, and effective approaches when healthcare security and coding practices are used together. Special attention was given to checking outcomes such as fewer errors, following global health guidelines, making work processes quicker and better, keeping expenses in check, and enhancing how patients feel about and trust the care they receive.

DISCUSSION

The Functions and Obligations of the Healthcare Security Department

Security in the healthcare industry helps hospitals stay strong and last over time, and it also makes sure patients are protected and that hospital work runs smoothly. Ensuring that both patients and medical staff are safe from danger: The first step in keeping hospitals secure is protecting their healthcare buildings. The main job of healthcare security is to keep both patients and staff safe by following regular procedures and spotting possible risks before they become real problems. It is also important to improve safety, create plans for leaving quickly, and get ready for emergencies (Herzig et Walsh, 2020).

Internal security management in healthcare helps keep hospitals safe and makes it easier for different healthcare places to work efficiently. They are not only in charge of watching over and managing groups of people, but they also work to reduce disagreements and disorder, which can harm the care and treatment of patients. This helps create a positive and supportive environment at work, as found by Gharaveis et al. in 2019. Healthcare security roles and responsibilities have gotten better thanks to new technology, especially when it comes to watching over and handling control devices. To do this, healthcare security needs to watch over things like cameras, alarms, and communication systems. The success of medical treatments and the safety of hospitals get better when healthcare security and information technology teams work together. They help create tools to control and track important things, and they also predict possible dangers and risky situations (Sun et al, 2019).

Interaction with patients and visitors: Since healthcare security is the main way patients and visitors interact with the facility, it's important to create a friendly environment, help people find their way around, and answer any questions they may have from patients and their families. This helps make the patient experience better and also helps improve public health as a whole (Santana et al, 2018). Healthcare security helps during emergencies and disasters by offering immediate medical care and working together to manage the response to crises. These efforts cover all aspects, like helping people leave safely and making sure patients and visitors are protected and feel calm (Seba & Challal, 2019).

Healthcare security must follow rules and report properly. It is important to stick to safety standards set by local and global organizations, like the International Association of Healthcare Safety Standards (IAHSS). This helps make sure everything is done safely and according to the law. Regular risk assessments also help find weaknesses before they turn into real problems, which makes sure everyone stays responsible and keeps improving (WHO, 2020). Detailed reports also make sure that these

weaknesses are found. Training and working together: Hospitals can become more resilient, sustainable, and efficient by providing thorough training and encouraging teamwork between healthcare security staff and other medical professionals. This is done by working together during training and using simulations, which helps make sure everyone is prepared and works well together during emergencies. Continuous learning and keeping up with new developments are also important factors that help make strategies and programs for improving hospital safety and security more effective, according to Patel et al. (2022).

Functions of Healthcare Security in Operational Settings

The job tasks and roles of healthcare security help make hospital operations run more smoothly and effectively, while also helping to keep the hospital environment safe. Surveillance and control tools such as cameras and motion detectors help improve how well hospitals operate by watching and keeping track of things. These tools can spot possible dangers early and allow for quick responses, which helps reduce risks and stops chaos from happening (Shapiro & Maras, 2021).

The use of gates, access control, regular checks, biometric systems, and key cards helps make dangerous and restricted areas safer and keeps the movement of people inside the building organized, as shown by Kluge et al. in 2018. Also, keeping crowds under control and managing noise levels are very important in making a calm and peaceful environment that helps people work better and recover more effectively. Another advantage of knowing about healthcare security and being trained in first aid is that it helps hospitals handle emergencies and unexpected situations better (Johansen, 2020). In the healthcare industry, security operations help create a safe, efficient, and quick healthcare setting that focuses on keeping patients, staff, and visitors protected and healthy.

Achieving Compliance with the Standards for Safety and Security

Healthcare security involves following safety and security standards, which helps healthcare facilities follow the rules set by legal and regulatory authorities. Moreover, responsibility involves following both local and international rules, working together with government agencies, and regularly checking for risks to ensure the hospital remains safe (Kioskli et al, 2021).

The International Health Care Security and Safety Standards (IAHSS) form the basis for putting in place effective security measures in the healthcare sector. These recommendations aim to set clear guidelines for handling physical security, emergency planning, and cybersecurity, and to make sure that healthcare security operations are consistent and of high quality, as stated by Kwon in 2018. Hospitals can enhance their safety, security, and overall performance by working closely with local authorities, civil defense groups, and occupational safety agencies, as found by Ullah and others in 2021. Healthcare security regularly checks for possible weaknesses and takes steps to fix them before they can be used against the system. This helps improve safety and security by checking how ready the staff is, along with the physical buildings and monitoring systems (Bhati, 2023).

The Obstacles Facing Healthcare Security in the Process of Improving Hospital Safety

Hospitals face many challenges when trying to put in place proper security because the healthcare system is becoming more complicated. Because of these challenges, they can't make sure people are safe and make their work better. There is a lack of both resources and skilled workers. To provide modern healthcare, it is important to have trained and qualified security personnel in hospitals to help make the environment safer and more secure. In addition, improving monitoring and control systems requires building better infrastructure and investing a lot of money at first, which makes it hard to use these systems properly and efficiently (Alasiri et al, 2022). Keeping healthcare facilities secure while making it easy for people to enter: It's important to strike a good balance so that patients and visitors can get in without any problems but also follow strict security measures to keep everyone safe. Restrictions can make people feel sad and frustrated, which might reduce their satisfaction with the experience they had. Lack of sufficient controls can lead to safety problems and allow unauthorized people to access sensitive information (Yanamala et al, 2023).

To keep things balanced, it's important to have access control systems in place and to make sure the security staff at healthcare facilities are well-trained to treat patients and visitors with respect and professionalism (Mehta et al., 2019). Technology has its limits, and even though digital tools have made hospitals and health systems safer and more secure, there are still some problems that technology alone can't completely fix. This change needs better technology and training for healthcare workers to use and manage these systems properly (Shah & Konda, 2022). It's also important to consider the online risks that come with devices connected to the Internet of Things (IoT). To overcome these issues, it's key to keep the system up to date, add new and better technology, and make sure employees are trained to use these tools correctly (Ullah et al, 2021).

Exceptional Methods for the Protection of Health Care

When it comes to healthcare security, the best practices center on providing employees with the necessary skills, using cutting-edge technologies, and encouraging collaboration at every level of the company. - Training and Skills Development: Training is crucial to preparing security staff for the challenges that are provided by healthcare environments. This helps to establish a work atmosphere that is secure, efficient, and supportive for patients and visitors (Stouffer et al, 2023).In the healthcare industry, having strong communication skills enables security officers to resolve problems in a calm manner, deliver instructions that are easy to understand, and connect with patients and visitors with empathy. Additionally, training contributes to an improvement in their capacity to successfully manage crises and respond to emergencies. As an additional benefit, police who have received training in first aid are able to provide rapid treatment in the event of a medical emergency until professional assistance is available (Bhuyan et al, 2020). Utilizing Technology: The utilization of contemporary technology is essential for the improvement of healthcare security. Surveillance systems that are more advanced and equipped with real-time analytics and facial recognition capabilities allow for proactive monitoring and the detection of threats more quickly (Bhati, 2023).

Fingerprint or retinal scanners are examples of biometric access controls that can be used to create a safe environment in restricted places like operating rooms and data centers (WHO, 2021). While robust cybersecurity procedures safeguard electronic health records and associated devices from being breached, real-time monitoring technologies are helpful in overseeing the operations of the hospital. Security can be improved using tools such as encryption, firewalls, and automated incident reporting (Jones et al, 2023). These tools also improve the capabilities of responses and prevention. Collaboration and integration: Collaboration is very important when it comes to the security procedures of the healthcare industry (Vajrobol, 2022).

Healthcare security teams must work together with hospital leaders and other staff to properly include safety in the way the hospital runs its operations. Improved readiness for crises can also be reached by working together with local government officials. Activities between different departments, like working with the IT team, help deal with both physical and cyber risks (Garcia et al, 2023). Joint training and simulation exercises help improve teamwork during emergencies, while efforts between different departments work on both kinds of situations at the same time (Vermesan et al, 2022).

Challenges and Ethical Considerations

One of the biggest problems with combining healthcare security with medical coding is finding a balance between protecting sensitive patient data and being efficient. Hospitals are under more and more pressure to go digital, yet this change puts health data at risk of things like unlawful access, cyberattacks, and data breaches. Medical coding is the process of turning clinical information into standardized numbers in a systematic way. It must be accurate and reliable, but mistakes in coding can lead to misdiagnosis, billing problems, and financial loss. The goal is to come up with solutions that make workflow better, make sure data is safe, and keep private information safe.

Another problem is how quickly technology is moving forward. Hospitals are using advanced technologies such as artificial intelligence, machine learning, and big data to improve coding and security processes. However, they also need to deal with the risks that come from system weaknesses and depending heavily on complex digital systems. This creates a moral duty to make sure the technology is used in a clear and fair way, free from unfair advantages, and focused on helping both patients and doctors. Making sure different hospital systems and international standards work together can be difficult, but it's really important for good communication and teamwork.

From an ethical standpoint, protecting patient privacy is paramount. Healthcare institutions must adhere to rigorous legal and professional standards, including HIPAA in the United States and GDPR in Europe, to protect sensitive health information from misuse or unauthorized disclosure. Beyond compliance, there is an ethical obligation to maintain patient autonomy and confidentiality. Patients must be comprehensively informed about the collection, processing, storage, and dissemination of their health information, and they should have the right to access and control their data.

In the end, we need to think about fairness and who gets to use these things. Even though advanced security and coding technology can make things safer and more efficient, many healthcare places, especially those in areas with limited resources, don't have enough money to use these technologies. This raise worries about possible differences in the quality of care and protection given to different groups of patients. Making sure that everyone gets fair treatment, feels included, and has access to the right resources is very important when setting up new security and coding systems in healthcare.

CONCLUSION

This study demonstrates the significance of integrating medical coding systems with health care security regulations to improve hospital operations and safety. By ensuring that all records are accurate, protecting patient health information, and implementing innovative methods for organizing medical codes, hospitals can lower medical errors, enhance the quality of treatment provided, and comply with regulations. Strict security regulations and sound coding techniques work together to boost patient confidence, reduce the likelihood of security issues, and assist physicians in making better decisions.

The results show that although technologies like automation and artificial intelligence have great potential to make hospital work better, it's important to think carefully about ethics, provide proper training for staff, and have strong management systems when using them. Dealing with both health care security and medical coding isn't just about technical skills—it's also an important way to make sure health care is safe, dependable, and of good quality in today's quickly changing medical environment.

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