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Leveraging Electronic Medical Records for Legal Compliance and Improved Reimbursement Efficiency

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Abstract

Background: Electronic Medical Record has had a multitude of impacts on the documentation of patient care and the financial system of the healthcare industry. With numerous computer applications and codes available within the Electronic Medical Record, the process of documenting a medical encounter and billing for services has vastly advanced over the last fifty years. Local Problem: Many pre-operative documents, including pre-operative anesthesia evaluation form, need to be completed prior to surgery to allow the billing office to correctly invoice the proper insurance for patients. With this evaluation being often neglected or not completed in a timely manner, the billing process at MetroHealth System has been inadequate and overall patient safety was a concern.

Methods: To increase the compliance of completing the pre-operative anesthesia evaluation document in a timely manner as well as streamline the billing process, a hard-stop Best Practices Advisory has been added to the Electronic Medical Record requiring anesthesia providers to complete the pre-operative anesthesia evaluation and note before having access to the patient's intraoperative record.

Results: The implementation of the hard-stop Best Practices Advisory forced anesthesia caregivers to complete the pre-operative evaluation before accessing the intraoperative note and increased compliance from as low as 86% to 95% within a year. The billing process has been significantly streamlined and patient safety has been increased.

Conclusion: The Electronic Medical Record can be leveraged to allow for faster reimbursement for surgical services through the implementation of Best Practices Advisory on essential documents associated with patient billing.

Keywords: Anesthesia; Electronic Medical Record; Best Practices Advisory; Compliance; Reimbursement

Abbreviations: EMR: Electronic Medical Record; BPA: Best Practices Advisory; ASA: American Society of Anesthesiologists; CMS: Center for Medicare and Medicaid Services; MHS: The MetroHealth System; Health and Human Services: HHS; HIPPA: Health Insurance Probability and Accountability Act; PHI: Protected Health Information; HIT: Health Information

Technology.

Introduction

Electronic Medical Records (EMR) have had a multitude of impacts on the documentation of patient care and the financial system of the healthcare industry. The process of documenting medical encounters has drastically improved, allowing healthcare providers to spend less time completing legal medical documentations and more time directly caring for patients. Being paperless, the EMR documents are never lost and are quickly and easily accessible for millions of patients. This easy access is vital to the billing and reimbursement processes as insurance or government agencies could access the EMR with proper clearance, drastically increasing the speed and efficiency of the reimbursement process [1].

There have been numerous reimbursement systems used in various healthcare systems across the world, including capitation, fee--for-service, pay-for-performance, and diagnosis-based systems [2]. As each reimbursement system has its strengths and weaknesses, most healthcare systems use a combination of all systems to best suit their needs. "However, more optimal use of emerging Health Information Technology (HIT), especially EMR could enhance the accuracy, efficiency and ultimate feasibility of any reimbursement system" [2]. By using the EMR to implement the Best Practices Advisory (BPA) to guide the anesthesia caregivers' documentation process, the reimbursement process can be significantly improved in terms of accuracy, efficiency, and timing. This implementation will not only increase the efficiency of the financial system of the hospital but also increase the safety and level of patient care that is provided as the necessary pre-operative anesthetic evaluation is completed.

As a way of communication within the EMR, three kinds of stop alerts have been used: A hard-stop, a soft-stop, and a passive-alert. The hard-stop prevents the healthcare providers from proceeding with patient's records before completing the required information. The soft-stop alert allows the healthcare givers to proceed within the patient's records against recommendations of the alert with an acknowledged reason. The passive alert allows the healthcare personnel to proceed with the patient's records without interference or required reason [3].

Many research studies have evaluated the application of the hard-stop alert, as a single course of action required within the EMR software program and found it to be beneficial in terms of documentation completeness, accuracy, and compliance [3]. For example, a recent literature evaluated the importance of the alert system in supporting workflow to decrease preventable errors and improve patient information efficacy and quality of care [4]. Another literature review on hard-stop implementation at the end of each anesthesia case enhances the anesthesia adverse events reporting for data capture quality assurance information by 92% [5]. To date, the hard-stop is considered the most effective tool in reducing documentation delay and healthcare delivery outcomes, but no studies used the hard-stop alert before each anesthesia case and analyze its benefits on reimbursement [3]. Therefore, we hypothesize that by implementing the hard-stop BPA at MetroHealth System (MHS), we will be able to study the effect of patient documentation in the perioperative setting on expediting the reimbursement process.

The billing and reimbursement processes in healthcare are extremely important, especially at a government-funded safety net hospital like MHS. As a community institution that cares for all patients, regardless of their insurance status, MHS found that opening access for patients who may not get adequate healthcare elsewhere is essential.

Many pre-operative documents, including a pre-operative anesthesia evaluation form, must be completed before surgery. This evaluation is performed to ensure the safety of anesthesia for the patient, to properly document patient care, to comply with regulatory laws, and to allow the billing office to correctly invoice the proper insurance for payment. The American Society of Anesthesiologists (ASA) recommendation for preoperative evaluation consists of a patient's interview, vital signs, physical examination, airway assessment, ASA scoring, review of systems, laboratory work, medications, past medical and allergy history, preoperative testing, consultation, fasting status, and anesthetic plan [6].There are various rules and laws governing the regulatory compliance of the

documentation of patient care, thus any non-compliance may result in legal impacts. Additionally, without proper documentation, the Center for Medicare, Medicaid Services (CMS), and the billing services at MHS cannot suitably communicate to ensure the proper reimbursement for the surgical and anesthesia services. As many physicians were not completing the pre-operative anesthesia evaluation form, legality, and patient safety were a concern, and the billing team was being delayed from gaining reimbursement for surgical services performed at MHS.

The timeliness of billing and communication with Medicare, Medicaid, and insurance companies is vital for the reimbursement process to take place. As MHS is a government-funded safety net hospital, it is essential that all reimbursement payments are received in a timely fashion to keep our healthcare system healthy and financially stable. The start of billing process begins with the physicians themselves as they properly document the procedures and care services that each patient is receiving. Without the compliance and proper documentation of the services from the physicians, patient safety is a concern alongside the delay in reimbursement from government, private insurance and legal obligations to regulatory compliance.

With the laws and regulations administered by the United States Department of Health and Human Services (HHS), regulatory compliance is essential. Having all proper patient documentation complete is vital to safely caring for patients and acknowledging the care they have received while in the hospital. Having these rules and regulations in place allows for a safer environment for patients and a checks-and-balances system for healthcare providers.

EMRs are crucial in helping healthcare workers provide the highest quality care, while reducing cost. Real-time access to patient information, provided by EMR utilization, improves care team communication, increases workplace efficiency, and enhances patient safety and satisfaction. Further, utilization of EMRs within population health can improve greater patient population safety by allowing for widespread analysis of patient outcomes.

The goal is to utilize the EMR system to increase the regulatory compliance of the pre- operative anesthesia evaluation document, thus increasing the timeliness and efficiency of the billing and reimbursement process while providing a proper safety evaluation for patients before anesthesia.

Materials and Methods

The pre-operative anesthesia evaluation is one of the various documents that need to be completed before anesthesia at MHS for the CMS and the billing team to have proper documentation for billing Medicare, Medicaid, and private insurance companies. A retrospective analysis was performed and found that many healthcare givers were non-compliant in completing this evaluation form before starting anesthesia. This was concerning across many areas of the hospital, including patient safety and the financial wellness of the system. The anesthesiologist could bypass the form and enter directly into the intraoperative record without completing the pre-operative anesthesia evaluation. This led to many observations of the evaluation form not being completed at all. Consequently, there was a delay in reimbursement payments when CMS and the billing team would need access to this document to gain reimbursement for the anesthetic care that the patient received. One study analyzed the many alerts that clinicians receive every day and found that these alerts must be balanced so as not to overburden physicians but to be present when necessary to ensure the maintenance of accurate medical records [7]. Therefore, the aim of the hard-stop alert at MHS should provide timely support for data capturing without increasing the burden on healthcare providers and maintain patient safety at the same time [8].

To ensure that each physician would complete the pre-operative evaluation, a hard-stop BPA was added into the EMR system to block the anesthesia caregivers from reaching the intraoperative record before completion of this evaluation form. Each anesthesia care provider was required to complete this form before starting anesthesia and charting intraoperatively. This was not only the best practice for ensuring patient safety, but also ensured that all necessary documentation was completed to allow CMS and the billing team to have an easier process of gaining reimbursement for the anesthetic and surgical services.

With the use of the EMR system, a data extraction was performed to show the compliance before and after the hard-stop BPA was added. We retrospectively investigated the compliance of the pre-operative anesthesia evaluation for 3 years prior to the BPA being added in 2021. We continued to analyze compliance for a year after the intervention was applied. The data was then analyzed and presented in (Table 1) and (Figure 1) to illustrate the compliance from 2018 to 2022.

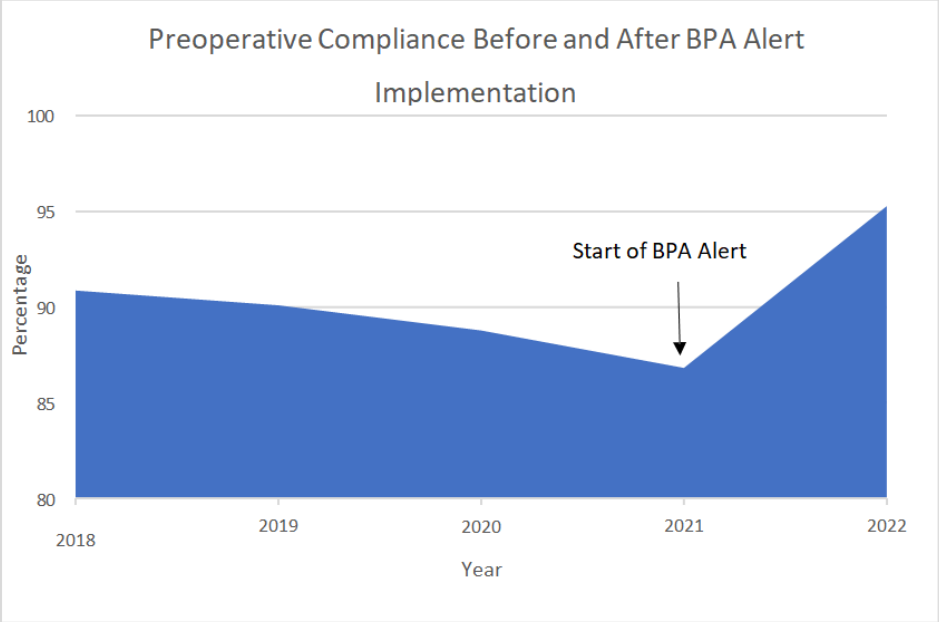

Figure 1: Compliance increases from 2021 (86%) to 2022 (95%) after the implementation of the hard-stop BPA

Total, no em	Total	Before Start	Percentage
2018	26346	23953	90.91703
2019	26119	23527	90.07619
2020	23145	20546	8B.77079
2021	25388	22039	86.80B73
2022	27246	25952	95.25O6B
No emergency or Intubation			
2018	26367	23953	90.84462
2019	26119	23527	90.07619
2020	23144	20545	8B.77031
2021	25388	22039	86.80B73
2022	27246	25952	95.25O6B

Table 1: Compliance Data

a. Before the start of the implementation of the hard-stop BPA from 2018-2020, then BPA started in 2021 and was evaluated for one year (2022).

b. The first part of the table includes total number of surgical cases with no emergencies (em) and the second part includes the total number of cases with no emergencies or intubation.

c. Percentage = anesthesia providers' compliance

We used MHS's EMR to study the compliance of the pre-operative anesthesia evaluation form before and after the implementation of the hard-stop BPA that restricted the anesthesia providers from entering the intraoperative record before completing the evaluation. A retrospective analysis was performed utilizing a customizable report and showed that many anesthesia caregivers were not completing this document as we had as low as 86% compliance during 2021 (Table 1, Figure 1). This was seen to have a downstream effect on the reimbursement process as all documentations were not completed for reimbursement purposes. This held up the CMS and billing services as they were waiting on completed evaluations from the anesthesia care providers before starting the payment reimbursement process from Medicare, Medicaid, and private insurance companies. Thus, the transition between clinical medicine, CMS, and billing services was proven to be slow and inefficient.

Efficiency is critical in various aspects of healthcare, especially in the reimbursement process at a government-funded safety net hospital. By implementing the hard-stop BPA, we were able to vastly increase the percentage of compliance on thousands of surgeries. This helped streamline the reimbursement process as CMS and billing services would not be waiting on any clinical documentation and could quickly contact the correct party to start the reimbursement process for that patient. Efficiency was therefore increased and the transition of care between the clinicians and financial services was optimized as it allowed for a more integrated workflow between clinical care to financial acquisition.

Results

The hard-stop BPA proved to be a success in various areas at MHS such as healthcare providers' compliance, legality, billing, patient care, and patient safety. After the implementation of the hard-stop BPA, pre-operative compliance among physicians increased dramatically from 86% in 2021 to 95% in 2022 (Table 1, Figure1). The BPA was able to increase the timeliness so that the billing team would have a complete patient chart to streamline the billing process. With a completed chart and proper anesthesia caregivers-signed documentation, CMS and the billing team had all the access they needed to approach the insurance, Medicare, and Medicaid for reimbursement. Additionally, the CMS and billing team had one key component of the healthcare providers-centered resources that they needed for the billing reimbursement process. This implementation also had a significant increase in regulatory compliance. With numerous laws and programs such as HIPPA (Health Insurance Probability and Accountability Act), the Affordable Care Act, and the Social Security ensuring the protection of patients via compliance, the hard-stop BPA allowed for an increase in compliance to be noted during audits by CMS [9].

This would allow for the decreased risk of a positive audit when MHS is evaluated. In addition to keeping patients safe, these audits act as a checks-and-balances system to ensure the physicians and other members of the organization are documenting all necessary information to allow for a smooth transition from clinical care to financial services.

From 2020 to 2021, we saw the compliance drop from 88% to 86%. As MHS provides anesthetic care to over 25,000 patients per year, each percent can account for more than 250 surgeries that need to have completed documentation before the billing office has all the resources needed to obtain reimbursement. Therefore, after the implementation of the hard-stop BPA in 2021, there was a drastic increase in compliance, skyrocketing to 95% compliance in 2022 (Table 1, Figure 1). As a level one trauma center, various emergencies come through our doors and into the operating room, and thus the BPA allows physicians to bypass it in emergent situations. This may account for the additional 5% non-compliance.

Most importantly, patient safety was increased. This BPA allowed for an increase in the time physicians spend with patients, allowing for more in-depth care and attention to patients. Also, another evaluation was performed by the physicians preoperatively, ensuring each patient's suitability to undergo anesthesia.

Discussion

The addition of the BPA restricting anesthesia providers' access to intraoperative records before completing the pre-operative anesthesia evaluation was proven to be a great success in various aspects including compliance, regulatory, patient safety, and funding reimbursement.

The restrictive BPA allowed for a checks-and-balances system, seamlessly transitioning the direct patient care received at MHS into the financial system of the hospital.

As a result of our intervention, there was a major increase in compliance with completing the pre-operative anesthesia evaluation form. Before the BPA intervention was added, the percentage of completion of this document was as low as 86%. As MHS provides anesthesia care to more than 25,000 patients each year, each percentage of compliance can account for more than 250 patient charts. Thus, having only 86% compliance conveys that there may have been as many as 3,500 surgeries that did not have all the proper documentation before starting anesthesia, potentially slowing the timing of receiving reimbursement. With the cost of surgery in the United States ranging from a few thousand to hundreds of thousands of dollars, MHS may have been halted in receiving millions of dollars in reimbursement due to these outstanding invoices. After the implementation of the BPA in 2021 and education on the importance of the pre-operative form, compliance jumped to 95% in 2022. This allowed CMS and the billing team to have access to all the necessary regulatory documents before contacting insurance for reimbursement.

As healthcare providers are working with Protected Health Information (PHI) and other patient-sensitive information, regulatory compliance is extremely important. There are various regulatory rules that the US Department of HHS has in place to ensure coverage for both our healthcare workers and patients. Having higher compliance for regulatory documents protects the healthcare workers at MHS and provides another level of patient safety [10].

As a top priority for any medical intervention, patient safety works in conjunction with regulatory compliance as a guide to utilize every measure possible to prevent patients from being injured while receiving medical care. Ramirez et al. documented the increase in the probability of prescribing blood pressure medications to patients with diabetes and hypertension after implementing the hard-stop BPA [11]. A quality improvement project emphasizes the benefit of the hard-stop BPA to improve patient safety with peri-procedural administration of antithrombotic medications whenever needed as a strategic patient care plan for elective surgery [12].

The University of West Virginia implemented the hard-stop BPA to restrict the anticoagulant orders to patients documented with epidural anesthesia. It studied the frequency of prohibited anticoagulant administration 3 months before and 3 months after the implementation of the electronic BPA. It found a decrease in the number of inappropriate anticoagulants used for those patients' selection. This study concludes the importance of adhering to this electronic alert on patient safety and protection from unapproved anticoagulation with the neuraxial catheter [13]. Smith et al. emphasized the evidence of an electronic alert system in reducing patient orders for inappropriate blood transfusion according to the institutional guidelines [14]. Kohn et al. reported that an electronic alert system is an element to increase caregivers' awareness to prevent common errors and improve patient safety related to medication errors that have a direct effect on increasing healthcare costs [15].

By implementing the hard-stop BPA, the anesthesia providers are required to evaluate their patients one more time before starting anesthesia. This implementation added layer of protection for patient safety while reminding the physician to complete the appropriate patient evaluation as it is essential for the patient and documentation of care. For future EMR updates, this hard-stop eternalizes the requirement for practitioners to complete preoperative documentation, solidifying all aspects of patient care, safety, billing, communication, and efficiency previously noted.

This study may be limited by factors such as time and a limited scope as the study was performed and analyzed for one year after

implementation. Updates to the EMR or other changes could have an impact on the total overall compliance in years to come. The BPA was added to one specific pre-operative anesthesia document that was found to be neglected. Implementation of a BPA for each individual essential document may cause click fatigue within the anesthesia team, leading to a negative effect on medical documentation and charting especially with preoperative time constraints. Furthermore, there is a lack of studies emphasizing the implementation of hard-stop on the perioperative anesthesia records, even though MHS found it useful in improving accurate documentation for that reflects direct patient care. In addition, not all institutions find it easier to implement the BPA as it could be problematic and negatively impact patient care timelines and that would require more practice to enhance anesthesia providers' experience that need to be put into consideration. Although this study didn't focus specifically on patient safety and care, it shed more light on future studies to quantify these measures.

Conclusion

The EMR can be used to the advantage of the healthcare system to streamline financial practices by installing hard-stop BPA into each patient's record to ensure the completion of necessary documents before patient care. The compliance with these essential legal documents, the validation of increased patient safety, and the reimbursement timeliness are all positively affected, allowing for an easy transition between providing excellent patient care services and receiving proper reimbursement for them.

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