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Medication Safety Practices in Healthcare Settings: An Analysis

[1]Sultan Abdullah Saad Nahi, [2]Mohammad Dhaifallah AL-Zaid, [3]Abdullah Saad Hamed Alamri, [4]Majed awad Mohammed alThabiti, [5]Doaa Abdalrahman Alshahrani, [6]Roshdi Abdulaziz Alsaadi, [7]Abdulmajeed matar aljuaid, [8]Nasser Raddah Alharthi, [9]Mohanad Khalid Mohammed Farhat, [10]Sultan Mohammed althobiti

[1] Pharmacist, Ballahmar General Hospital
[2] Pharmacist, Aseer cluster
[3] Pharmacist Technician, Aseer cluster
[4] Pharmacy technician, King Faisal Medical complex in Taif
[5] Pharmacist, Taif King Faisal Medical Complex
[6] Pharmacy Technician, King Faisal Medical Complex.Taif
[7] Pharmacist, King abdulaziz specialist hospital- taif
[8] Clinical Pharmacist, King Faisal Medical Complex - Taif
[9] Pharmacist Assistant, King Faisal Hospital in Taif
[10] Pharmacist, King abdulaziz specialist hospital taif

Abstract

Introduction: Medication safety is defined as freedom from preventable medication errors and unnecessary harm associated with medication use. Medication errors and adverse drug events are common problems in health care organizations. Although significant improvements in medication safety have been reported, patients still face risks of adverse drug events that result in harm from preventable errors, and gaining control over these events through error reduction is a high priority for health care organizations. Enhancing medication safety practices beyond the typical error prevention strategies can result in significant advantages for patient quality and patient safety. In recent years, new methods have been developed and used to promote medication safety.

Methods: The 2006 National Medication Safety Standards for Hospitals served as a conceptual framework, and operational definitions were developed to guide data collection and analyses. An expert panel reviewed and revised the operational definitions. Data were collected through the Medication Module, which focused on medication safety practices. The final database from the sample included 2,869 units. A purposively selected panel of national experts assisted in adding a few items, final item selection, and end-product reviews.

Conclusion: Improving medication safety through enhanced medication safety practices would not only help in reducing the number of medication errors but also reduce the patient morbidity associated with these medication errors. Healthcare providers should train their staff periodically on medication safety practices, promote the use of systems with built-in clinical decision support, use reports from medication error reporting systems to identify

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areas of deficit in the system, and be vigilant in these areas. Guidelines for reducing medication errors, setting up medication safety committees throughout the facility, promoting education about medication safety practices, and facilitating the creation of a positive work culture are a few among the many measures that can be implemented to improve the outcome of medication therapy. Members of the medication safety committee should regularly visit the patient care areas to look for compliance with medication error reduction policies and strategies. The leadership team of the organization should be made proactive by the medication safety report, and its members should use the same report to find ways to improve patient safety. Healthcare providers should use every opportunity to educate their staff on medication safety issues.

Keywords: Medication, Purposively, Preventable, Morbidity.

1. Introduction

The healthcare system all around the world has been facing several healthcare issues, including medical errors, misuse of medication, and adverse events arising from medical practice. The fact is that medical practice necessitates fast, effective decisions; thus, patient safety is often at risk. As a result, developing a patient safety culture within healthcare institutions is an important approach to improving the healthcare process. Developing a safe care environment is the most important way to decrease the number of medical errors and adverse events. Consequently, optimizing the environment via policies, such as effective training for healthcare workers, is crucial.

The U.S. has spent about 18% of its GDP on healthcare services since 2012 and is expected to spend more. Yet, a significant number of deaths are due to preventable medical errors with careless management of patients. Healthcare service policies call for action to improve the situation. However, health professionals do not completely agree with the findings because they do not think the data truly reflect all preventable medical errors. Although the data represent only a small part of medical errors, there are sufficient cases of medication errors to establish objective research protocols or strategies. Nonetheless, health professionals need to apply patient safety measures during the healthcare process, including performing data mining strategies to discover additional problems, in order to make informed decisions prior to or during the care process.

2. Importance of Medication Safety in Healthcare Settings

Adverse events resulting from medication errors are recognized as major public health problems in healthcare and are associated with increased morbidity, mortality, and healthcare expenditure. Since medications are prescribed, prepared, and administered in most healthcare settings, the prevention of adverse drug events is important for patient safety. Medication safety is the prevention and reduction of inappropriate medication use and its consequences.

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As the public becomes more health-conscious and self-care practices increase, healthcare workers recommend medications to an expanding number of individuals in healthcare settings. Healthcare providers, such as nurse practitioners and pharmacists, feel the need to recommend and dispense medications in their practices throughout their professional lives. These demands are consistent with the goal of providing safe, accurate, and high-quality patient care. To minimize the risks associated with medication and maximize the likelihood of a medication achieving its intended therapeutic effect, simultaneously maintaining and managing the increasing number of medications has become a priority in healthcare settings. In this regard, medication safety practices were introduced.

Importance of Medication Safety in Healthcare Settings: Medicines are a key component of healthcare, and the therapeutic effects of drugs largely depend on the right medicine, right dose, right patient, right time, and right route. However, the risk of medication errors continues to be a major concern in healthcare settings. Medication errors can occur at any point in the medication-use process, from prescribing to administering medication in inpatient and outpatient settings. These errors may involve one or a combination of the following: mistakes in writing the prescription, such as when the doctor's handwriting is difficult to read; administration of the medicine to the wrong person; the wrong medicine being given or a third party's medicine being given; administration at incorrect times, such as when a particular time interval is recommended; repeated administration to a person allergic to the prescribed agent; and administration of an incorrect dose, such as when multiple medications have the same color, shape, or size. These situations may occur because healthcare workers have little time to double-check the contents of vials or orders in their workplace. In addition, manual double-checking procedures are not universally applied throughout healthcare settings. Furthermore, patient identifiers are not checked, scanning systems do not exist, and automatic labeling is not widely used. These medication errors may cause serious health problems, such as substantial health-related personal expenses that result from adverse health outcomes, including lengthening hospital stays and additional health-related services, such as those needed when hospital-acquired infections, blood transfusion reactions, or surgical complications occur.

3. Common Medication Errors and Their Impact

The literature review in the previous section gave us a rundown of the various medication errors that can result from system failures, weaknesses in policies, and inadequate human resources. This section delves into those components that, through identified medication errors, have been established as the common causes of hospital visits and hospital readmissions. Medication is the most common cause of medical errors. Medical errors account for up to 98,000 deaths, with 7,000 deaths occurring from administration errors.

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The cost implications, both direct and indirect, associated with these medical errors run into billions of dollars. Some statistics suggest that anywhere from $130 billion to $177 billion is spent annually to address the related problems. An important part of understanding these negative effects lies in the definition that will be associated with them. Some of the key contributors to medication errors include poor communication, labeling issues, and lack of available resources to health care workers. It is important to get an understanding of just what makes up a medication error and differentiate such an error from an adverse drug event.

4. Technological Innovations for Medication Safety

The topic of medication safety continues to be an important area of focus in healthcare, as preventable medication-related adverse events have caused suffering for patients and considerable expense to the healthcare industry. In response to the seriousness of the situation, technological solutions have been developed to provide a safer medication administration environment. Today, technology tools such as barcode technology, smart pumps, and computerized physician order entry offer opportunities for medication errors to be identified and averted before they reach the patient. These technologies can significantly reduce medication errors during the medication administration process and can increase the overall efficiency of the dispensing process. Simulation studies have shown that error frequencies are structured differently between paper-based and electronically embedded processes, and improvements such as medication scanning reduce the probability of error at each stage. The increasing involvement of nurses in clinical information systems, specifically through electronic medication administration records, contributes to nurses' vigilance and proactivity in medication administration and enhances adherence to safe medication practices. This technology has increasingly been linked to health service goals.

5. Best Practices and Guidelines for Medication Safety

The new Safety Account aims to apply the second stage of drug development focused on ensuring the safe consumption of medicines. Before putting a drug on the market, a statement must be composed for the relevant regulatory authority. Further studies are needed to identify pharmacokinetic interactions between commonly used therapies and to establish the safe dose for concurrent treatment. It is essential to anticipate and avoid drug and food interactions, as well as other factors that could modify the desirable effects of medicines, by recognizing patient-specific risks such as allergies, intolerances, genetics, culture, weight, sex, race, age, comorbidities, lifestyle, and other critical information.

The content builds on studies and presentations available in the scientific literature. It focuses on improving the safe consumption of treatments, looking at evidence-based suggestions for pharmacovigilance, such as studies related to safety profiles, the study of drugs consumed in particular institutions, the use of comorbid patients' risk, and the increased risk of certain

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events. User-friendly development during processing, building predefined actions to mitigate the risk of errors, and practical solutions are also emphasized. It is important to highlight the significance of hiring multiprofessional and interdisciplinary teams who engage in safe accountability, necessitating continued education, performing permanent pharmacovigilance, publishing a safety account based on real-life evidence, broadening the recommendations used, and ultimately discovering problems that can produce unwanted outcomes. (Knapke et al.2021)(Coleman et al., 2021)(Marmo & Berkman, 2020)(Walton et al.2020)(Bendowska and Baum2023)(Erjavec et al., 2022)

6. Case Studies and Success Stories

Case studies and success stories can be useful tools to provide detailed operational descriptions of situations and practices in which successful results were achieved. When these findings are highly supportive of other theories and literature, they add further weight, and practitioners can gain value from detailed descriptions on many levels. This last chapter provides several examples of successful programs, tools, and projects for use in developing and implementing medication safety program decisions. These case studies focus on those that provide data and evidence of changes in action leading to a decrease in the rate of severity of preventable adverse drug events. The case studies in this chapter are comprehensive and provide details on different monitoring and assessment tools, guidelines, organizations, protocols, interventions, and networks, and how they were established and implemented. They provide indicators of possible future success stories, stimulate thinking, and highlight opportunities. Promising applications, implementation strategies, sustainability, and types of necessary resources are discussed during the individual cases.

Medication safety is a well-understood healthcare priority and comprises a complex set of elements involving the most vulnerable patients, the most potential for harm, the largest numbers of healthcare providers, and a wide variety of medications and their uses across different healthcare settings and for different patient conditions. While these complexities may make development, implementation, and improvement of medication safety specifically challenging, case studies and success stories that are meaningful, practical, and encourage support for critical changes are likely to continue to support and evolve in this ever-growing area. Since all of the people and organizations who were involved in the medication process in all of these case studies considered here had made changes under local circumstances for which they were responsible, each item addresses different clinical, social, and cultural differences that explain and affect both the process and outcomes.

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