



AN OVERVIEW OF SAFETY MEDICATION IN PHARMACY ROLES OF PHARMACIST IN PATIENT EDUCATION

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Abstract:

The pharmacist's responsibilities go from just distributing medication to providing direct care at the patient's bedside, leading to improved health outcomes for the patient. In industrialized nations, pharmacists contribute to the rational utilization of medications, enhance clinical results, and advance the overall health status by collaborating with a diverse group of healthcare practitioners. This study seeks to highlight the crucial role of pharmacists in ensuring patient care and safety. Clinical pharmacists have significant responsibilities in enhancing patients' health outcomes, encompassing tasks such as educating patients, documenting drug errors, and enhancing the quality and safety of patient care.

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Introduction:

Medication mistakes remain a prominent source of harm to patients in hospitals, with an approximate occurrence rate of one medication error for every five doses administered to patients in the average US hospital [1]. This statistic specifically pertains to hospitals in the United States, where unit dosage medication delivery systems and pharmacy-based centralized admixture compounding are commonly used. These methods have been proven to effectively decrease the chances of mistakes. It might be hypothesized that hospitals lacking such procedures may be susceptible to a greater incidence of mistakes. Despite the significant impact of the influential publication "To Err is Human," which highlighted the extent of medical errors that cause harm to patients and emphasized the role of systems in these errors, there has not been a proven demonstration of a decrease in medication errors resulting in patient harm [2]. Pharmacists have made significant contributions to patient safety by fulfilling their various job-related duties. However, it is crucial for them to acknowledge and embrace their specialized training, as it enables them to have a substantial influence on patient safety by globally assessing and enhancing medication safety procedures. Pharmacists possess a particular viewpoint that enables them to assess medication procedures for safety and develop and execute effective solutions to enhance current medication systems. Pharmacists are well-suited to assume a leadership position in evaluating the effectiveness of medication systems, developing secure medication procedures, and strategically planning for drug safety [3].

This article focuses on the methods and strategies used to ensure drug safety in hospitals, which is the location where the most intricate treatment is provided. The text highlights the potential for pharmacists and clinical pharmacists to greatly enhance the safety of individual patient medication and the overall culture of medication safety. This applies not just to hospitals, but also to other non-hospital settings.

Review:

An internationally accepted definition of a pharmaceutical error aims to provide clarity regarding the extent of the problem and what incidents should be included in reports. Having a consistent and unified definition of a pharmaceutical mistake enables uniform analysis and facilitates longitudinal comparison and trend analysis by analysts. Pharmacists have shown their capability to enhance the reporting of prescription

errors through concentrated endeavors, which is a crucial step in developing ways to enhance medication safety [4].

Given the awareness of the negative effects of pharmaceutical-related damage on both society and individuals, there is a compelling case for prioritizing medication safety through an evidence-based approach. Acquiring knowledge about the research supporting pharmaceutical safety programs, established recommendations, and techniques and resources for evaluating risk and implementing successful and enduring change is valuable [5].

The World Health Organization (WHO) globally provided guidance on strategy development through its dissemination of Patient Safety Solutions. These solutions focused on improving the safe use of medications that look-alike or sound-alike, single-use injections, concentrated electrolytes, and medication reconciliation [4]. In 2008, the International Pharmaceutical Federation (FIP) organized a meeting of hospital pharmacists from several countries to create 75 consensus statements that outlined their shared vision for the field of hospital pharmacy. The 'Basal Statements' are definitive suggestions for establishing a pharmaceutical safety framework in a hospital context [5]. Both of these organizations have prioritized pharmaceutical safety via their recommendations.

High-alert drugs are often characterized as pharmaceuticals that, if administered incorrectly, have the greatest risk of causing damage. The Institute for Safe Medication Practices has released a compilation of drugs that satisfy these specific requirements. The user's text is "[5]." Frequently, there is insufficient comprehension on the circumstances that prompt the inclusion of a medicine on the high-alert pharmaceutical list. Typically, a universal strategy is employed for all high-alert drugs, involving the application of high-alert medication labels on storage containers and the implementation of double checks by nurses before administering them. However, this method may not adequately address the unique dangers associated with individual high-alert medications. The user's text is "[5]". Concentrated electrolytes provide a significant danger due to their preparation and infusion needs, necessitating special procedures for their preparation and delivery rate.

Chemotherapy is classified as a high-risk drug due to the intricate nature of the procedure involved in creating medication orders, the dangers faced by healthcare workers when exposed to it, and the

severe repercussions of intravenous lines becoming dislodged and infusing into tissue, which can lead to tissue death [6]. These are only a few instances of the distinct safety profiles exhibited by each high-alert medicine. By identifying and implementing strong procedures targeted at the specific hazards associated with each high-alert medicine chosen by the organization as relevant to their environment, the potential for patient damage from these medications may be considerably reduced. Given its significant influence on mitigating risk associated with a hazardous class of drugs [7], this approach should be given precedence. By gaining a more comprehensive comprehension of the distinct medication safety concerns in older individuals and the participation of proficient clinical pharmacists in addressing medication safety issues in geriatric patients, it has become advantageous to recognize a distinct category of high-alert medications that may present specific dangers to the elderly [7].

Effective drug safety strategic planning should include the crucial expertise and training of pharmacists, clinical pharmacists, and other key figures within the healthcare system. The initial step involves evaluating high-risk drugs and procedures, as well as the capacity to analyze and enhance the efficiency of medication-related operations. In order to determine the areas where efforts and resources should be focused, it is essential to conduct an evaluation of the existing condition of pharmaceutical processes [8]. Medication mistakes occurring within the enterprise provide valuable insights on system failures and process inadequacies. Reports documenting medication mishaps provide valuable insights into the functioning of the medicine system. Is medication mistake reporting sufficiently comprehensive to accurately reflect the actual number of errors? Medication error reporting at several hospitals is sometimes limited due to various factors. There might be insufficient knowledge on how to report, or the reporting procedure may be time-consuming or burdensome. There is a possibility that pharmaceutical reports can lead to disciplinary actions for anyone involved in the mistake. Staff may lack awareness of the good improvements that have transpired due to reporting. Any of these factors may contribute to a decrease in reporting. In order to get benefit from medication mistake reports, it is imperative to establish a strong and comprehensive system, as well as garner widespread endorsement, for the documentation of medication errors. If there is a low rate of reporting medication mistakes, it is crucial to comprehend the obstacles that prevent

reporting. The organization must subsequently tackle these hurdles [9].

The culture of safety inside the organization will have a significant impact on efforts to enhance pharmaceutical safety. Establishing a safety culture is typically entrenched and resistant to modify. The statement represents the organization's methodology for addressing safety concerns and prioritizing patient safety. The role of senior hospital leadership is crucial in fostering a safety culture by establishing frameworks and mechanisms to promote organization-wide recognition of deficiencies in patient safety performance, holding leaders accountable for addressing these deficiencies, and allocating sufficient resources to enhance performance and implement initiatives that guarantee the provision of safe care. Leadership establishes the vision that motivates and guides efforts to ensure patient safety [10].

Leadership failure is a common contributing reason when sentinel occurrences occur and are evaluated. Structures aimed at promoting patient safety involve prioritizing safety within the governing board, preferably by establishing a dedicated committee focused on quality and safety. According to a poll, just 61% of the chief operating officers who participated reported having a quality and safety committee as part of their governance board. Leaders must proficiently carry out a safety strategy, while also giving careful consideration to its execution [10].

Research indicates that system performance failure is frequently caused by inconsistent execution rather than strategy failure [11]. An optimal strategy for implementing a safety plan entails first creating a plan, then effectively communicating it to all relevant stakeholders (including those responsible for executing specific parts of the plan and those who will be participating in it), and finally supervising the plan's execution. To comprehend the degree of performance and identify areas for enhancement, it is necessary to monitor performance and choose suitable metrics for the process [12].

Conclusion:

Proficiency in identifying risk factors within the drug system and utilizing data analysis to draw informed conclusions are essential competencies for the role of a medication safety leader. Due to their extensive training and expertise in medication safety and safety systems, pharmacists are well-equipped to identify potential pharmaceutical hazards and develop effective strategies to enhance the safety of medications, medication procedures,

and patient care. Furthermore, the inclusion of clinical training in the customization and enhancement of drug therapy provides additional value to the expertise of pharmacists necessary for establishing a basis for ensuring the safety of medications. A comprehensive comprehension of the functioning of all components of the medicine system is exceedingly useful for generating solutions. The responsibilities of pharmacists and clinical pharmacists in addressing drug safety concerns are undergoing changes, and a solid understanding of pharmaceutical care is a crucial component of ensuring medication safety.

References:

1. Barker KN, Flynn EA, Pepper GA, Bates DW, Mikeal RL. Medication errors observed in 36 health care facilities. *Arch Intern Med.* 2002;162:1897–903.
2. Kohn LT, Corrigan JM, Donaldson MS, editors. *To err is human: building a safer health system.* Washington, DC: National Academy Press; 1999.
3. Grissinger m. Reducing the potential for mistakes with investigational drugs. *P&T.* 2011;36:120–138.
4. Cruz JL, Brown JN. Safety risks with investigational drugs: pharmacy practices and perceptions in the veterans affairs health system. *Ther Adv Drug Saf.* 2015;6:103–109.
5. Kaushal R, Shojania KG, Bates DW. Effects of computerized physician order entry and clinical decision support systems on medication safety: a systematic review. *Arch Intern Med.* 2003;163:1409–1416.
6. Institute for Safe Medication Practices (ISMP). It's time for standards to improve safety with electronic communication of medication orders. *ISMP Medication Safety Alert!* 2003;8(4):1–4.
7. Bossidy L, Burck C, Charan R. *Execution: The discipline of getting things done.* New York: Crown Business; 2002.
8. Koppel R, Wetterneck T, Telles J, et al. Workarounds to barcode medication administration systems: their occurrences, causes and threats to patient safety. *J Am Med Inform Assoc.* 2008;15:408–23.
9. Costello JL, Torowicz DL, Yeh TS. Effects of a pharmacist-led pediatrics medication safety team on medication-error reporting. *Am J Health Syst Pharm.* 2007;64:1422–6.
10. Weant KA, Humphries RL, Hite K, et al. Effects of emergency medicine pharmacists on medication-error reporting in an emergency department. *Am J Health Syst Pharm.* 2010;67:1851–5.
11. Likic R, Maxwell SRJ. Prevention of medication errors: teaching and training. *Br J Clin Pharmacol.* 2009;67(6):656–61. doi: 10.1111/j.1365-2125.2009.03423.x
12. Naserallah LM, Hussain TA, Jaam M, Pawluk SA. Impact of pharmacist interventions on medication errors in hospitalized pediatric patients: a systematic review and meta-analysis. *Int J Clin Pharm.* 2020;42(4):979–94. doi: 10.1007/s11096-020-01034-z