ASHRM PATIENT SAFETY TIP SHEET

Medication Safety

AMERICAN SOCIETY FOR HEALTH CARE RISK MANAGEMENT

SITUATION: Medication errors are the most frequent and avoidable form of patient harm (Tariq, 2024), with approximately 5% of hospitalized patients experiencing an adverse drug event each year in the United States (PSNet, 2019). Multiple risk factors exist in the medication safety chain for patients, drugs, technology, and clinicians, and with over 10,000 prescription medications available for use in the U.S. (PSNet, 2019), medication safety has become more challenging and complex each year.

BACKGROUND: Medication errors can occur at each point in the medication use process. Procurement, planning, prescribing, preparation, dispensing, administration, monitoring, and patient education all present opportunities for missteps, errors, and harm (IMSN, 2024). The types of harm associated with medication use include:

- Adverse Drug Events: harm caused by the use of a drug as a result of an error;
- Potential Adverse Drug Events: a medication error that reaches the patient but does not cause harm; and
- Adverse Drug Reactions: side effects experienced by patients even when there is no error (PSNet 2019, NCCMERP 2015).

ASSESSMENT: Errors can occur due to a variety of lapses. The medication process itself consists of at least a dozen separate steps, and the probability of undertaking a multistep task without error is such that if there are 21 steps in a process, each of which is performed without error 99% of the time, the overall process will be correct only 80% of the time (McDowell, 2009).

RECOMMENDATIONS:

To improve medication safety, the Agency for Healthcare Research and Quality (PSNet, 2019) recommends that health care providers and clinicians:

- Utilize computerized provider order entry (CPOE) and clinical decision support systems to reinforce safe prescribing;
- Conduct medication reconciliation at times of patient care transition;
- Work with clinical pharmacists to oversee the medication dispensing process;
- Leverage technology such as automated dispensing cabinets, barcode administration systems, and smart infusion pumps with dose delivery programming; and
- Ensure mindfulness around adherence to the “rights” of medication administration: right medication, right dose, right time, right route, and right patient.

Resources: [1] Tariq RA, Vashisht R, Sinha A, et al. Medication Dispensing Errors and Prevention. [Updated 2024 Feb 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan. Available from: https://www.ncbi.nlm.nih.gov/books/NBK519065/ [2] Medication Errors and Adverse Drug Events. PSNet [internet]. Rockville (MD): Agency for Healthcare Research and Quality, US Department of Health and Human Services. 2019. Available: https://psnet.ahrq.gov/primer/medication-errors-and-adverse-drug-events [3] Contemporary View of Medication-Related Harm: A New Paradigm. National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP). 2015. Available: http://www.nccmerp.org/sites/default/files/nccmerp_fact_sheet_2015-02-v91.pdf [4] Revision of NCC MERP Categorizing Medication Errors Index. Rockville, MD: National Coordinating Council for Medication Error Reporting and Prevention. November 2022. Available: https://www.nccmerp.org/sites/default/files/2022ncc-merp-categorizing-medication-errors-index.pdf [5] McDowell SE, Ferner HS, Ferner RE. The pathophysiology of medication errors: how and where they arise. Br J Clin Pharmacol. 2009 Jun;67(6):605-13. doi: 10.1111/j.1365-2125.2009.03416.x. PMID: 19594527; PMCID: PMC2723197.