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Shielding From Harm

Safeguarding Medication Administration in Radiology



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Medication administration has long been recognized as a high-risk activity with the potential for errors and harm to patients. The Joint Commission has included medication safety directives in the National Patient Safety Goals (NPSGs) since their inception in 2002 (The Joint Commission, 2002). The 2019 NPSGs once again address medication errors in the national mandate to keep patients safe while in the hospital (The Joint Commission, 2019). Radiology is not immune to medication errors. Quite the contrary, the sixth annual MEDMARX® Data Report identified radiology as the area in the hospital with the highest percentage of harm from medication errors (PA Patient Safety Advisory, 2006). Contrast media is often considered the high-risk medication, and initiatives to decrease contrast media reactions, overdose, and inappropriate use have been presented in the literature (Field, 2018). Less discussed is the potential for medication error from the medication patients need while in radiology, especially inpatients traveling to radiology for diagnostic or therapeutic procedures. Any array of medications such as, but not limited to, insulin, anticoagulants, opioids, anxiolytics, and antibiotics may be needed for medical management while in radiology. In addition, medications such as, but not limited to, diuretics for hematuria studies, nitrates for coronary studies, and benzodiazepines and opioids for conscious sedation are used in conjunction to both diagnostic and therapeutic procedures.

Recent current events have spotlighted this risk of medication errors in radiology with a fatal medication error that occurred in preparation for a full body scan in the radiology department of a Tennessee hospital. The news reported the arrest of a nurse who made a fatal medication error while caring for a patient in radiology (Kelman, 2019, ISMP, 2019a). The nurse was unfamiliar with the patient, unfamiliar with

radiology, and unfamiliar with the medications ordered. The medication administration processes were not safeguarded against an error occurring. The circumstances of this instance are tragic for all those involved: the patient, the family, the nurse, and those in the radiology department that fateful day.

The circumstances are ripe in radiology for medication error, requiring heightened protections against error compared with typical hospital units. Patients cared for in radiology are not familiar to the technologists and nurses in the imaging department. Intensive care unit and floor nurses often accompany patients to the radiology unit, so even if they are familiar with the patients, they are now caring for them in an unfamiliar setting. In either circumstance, the unfamiliarity of either the patient or the setting increases the risk for medication error. The five rights of safe medication administration (patient, medication, dose, route, time) are the standard for safeguarding against error in any circumstance. However, nurses or any health-care provider can only achieve the five-right check if the processes are in place (ISMP 2007, 2019b). The unfamiliarity of the radiology department for the visiting nurses may be problematic to safe medication administration. Even for those familiar with the radiology department, the various modalities throughout the department, such as the magnetic resonance imaging, computed tomography, and interventional radiology, have specific medication needs.

The Institute for Safe Medication Practices (ISMP) in the January 27, 2019, issue provided recommendations for health-care providers working in radiology and for safeguarding medications being dispensed from automatic drug cabinets. These recommendations are summarized in the figure below (See Figure 1). See the ISMP (2019a) issue for the complete list and descriptions of recommendations, <https://www.ismp.org/resources/safety-enhancements-every-hospital-must-consider-wake-another-tragic-neuromuscular>. Safeguarding medication administration against errors can be done. The first step is recognizing the heightened risk that medications present in the radiology department and dispensing and administering those medications with care and diligence to keep our patients safe.

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Figure 1

Summary of Institute for Safe Medication Practices (January 27, 2019) for safe medication administration in radiology

Safeguards against medication administration errors	Examples of initiative recommendations
Sedation protocol	Sedations for claustrophobia follows preestablished protocol for indication of oral and intravenous sedation with anxiolytics as well as indications for conscious sedation.
High-risk medications for radiology	Establish a list of high-risk medications for the radiology department requiring two-registered nurses verification for administration. Provide blocks in the automatic dispensing cabinets requiring second signature.
Search by brand and generic names	Automatic dispensing cabinets include both generic and brand names
Neuromuscular blockers labeled clearly and stored securely	Store neuromuscular blockers only in areas were used regularly. Label neuromuscular blockers with layers of warnings indicating the need for assisted ventilation. Identify them as a high-risk medication. Use interactive warnings when neuromuscular blockers are withdrawn from the medication cabinets.
Medication override policy for radiology	Initiate an override policy with an override list of medications that can be obtained with an override and when an override will be permissible.
Barcode scanning	Before administration, require barcode scanning for patient and medication identification.
Patient monitoring policy	Policy for monitoring patients in radiology who receive sedation at various levels, oral, anxiolytics, and conscious sedation. Policy needs to clearly state the type of monitoring, frequency and duration of monitoring, and the personnel responsible for monitoring. The policy should be created in conjunction with anesthesia for consistent sedation patient surveillance.
Remove distractions during medication preparation and administration	Minimize the distractions while dispensing medications and during medication administration. Educate all the radiology staff, nurses, technologists, and physicians of the risks of distraction to medication errors.
Educate staff	Annual competency for all nurses and technologists responsible for medication administration.

ISMP (2019a)

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