

Report on Radiology Medication Errors Provokes Alarms, Responses, and Recommendations

The United States Pharmacopeia (USP) announced on January 18 that medication errors occurring in radiologic services produced “the highest percentage of harm—7 times higher than all medication errors studied in the 2000–2004 reporting period,” according to the USP’s 6th annual MEDMARX Data Report. The report, *A Chartbook of 2000–2004 Findings from Intensive Care Units and Radiological Services*, analyzed 40,403 records collected from hospitals and health care institutions across the country over a 5-year period. From 2000 to 2004, 12% of the 2,032 medication errors reported in radiological services included in the study resulted in patient harm. Radiologic services were also more likely to result in the need for additional care and consumption of resources.

“These errors signal hidden risks for patients—hidden because most people view radiological procedures as routine and may not be aware that high risk medications are being used before, during, and after a radiological procedure,” said John P. Santell, RPh, primary author of the report and director of Educational Program Initiatives for the Center for the Advancement of Patient Safety at USP. “Based on our data, we believe that this is a serious issue and must be addressed for patient safety and quality of care.” The study defined radiologic error as that occurring in, or as a result of, imaging performed in inpatient and outpatient services including the radiology department, cardiac catheterization laboratory, and nuclear medicine.

Responses from Radiology and Nuclear Medicine

The report, which received broad coverage by major news outlets and prompted widespread concern among patients, met with immediate responses from organized radiology and nuclear medicine. Later on January 18, the American College of Radiology (ACR) issued a statement characterizing the USP study as containing “incomplete, inaccurate information” that was “without careful and logical analysis.” The ACR statement pointed to the possibility that the report “may unnecessarily alarm patients and may cause many patients who require imaging care to mistakenly avoid getting it.”

“The ACR works for the day when all medical errors are eliminated. However, this report is deeply flawed and fails to relate the extremely low frequency of such errors in relation to the more than 570 million medical imaging procedures performed in the United States each year. This incredibly vague report does not provide evidence that imaging facilities operated by trained, certified physicians

and certified nonphysician personnel present a significantly increased risk over other medical facilities in regard to medication usage,” said James P. Borgstede, MD, chair of the ACR Board of Chancellors.

The ACR pointed out that the USP report did not make clear how representative the voluntarily reported data were or how the number of errors reported compares with the total number of procedures performed safely. Moreover, the USP report failed to delineate which medical specialists actually perform exams and incorrectly attributed to radiology nearly half of the 2,030 errors cited. Cardiac catheterization labs were listed as the areas in which the highest percentage (40%) of medication errors cited in the report occurred. The report attributed all 823 errors incurred in these labs to radiology. The ACR release noted that although “interventional radiology is a growing subspecialty of radiology and the number of these procedures performed by radiologists is increasing, radiologists currently perform less than 1% of cardiac catheterization procedures nationwide.”

The signal failure in the report noted by the ACR and numerous other groups was the fact that the USP attributed to radiology events that may have been unrelated to the performance of imaging procedures but which occurred in or on the way to or from the radiology department. Pharmaceutical errors in patients who arrive in the radiology department with scheduled medications, injections ordered by other physicians, or who are medicated on their clinicians’ advice after experiencing medical emergencies unrelated to imaging were all counted as radiology errors. “The massive flaws in the report’s methodology and its failure to provide context as to the scope of any errors reported seriously undermine the study’s conclusions. To take this report as evidence of systemic failures in radiology facilities which represent an increased risk to patients is not only inaccurate, but irresponsible and potentially dangerous,” said Borgstede.

Taking a somewhat different approach, the SNM responded on January 18 by issuing a press release pointing to the relatively low number of errors reported by the USP for nuclear medicine procedures. “The number of errors voluntarily reported for nuclear medicine in this comprehensive analysis—resulting from environmental, situational or organizations factors—is exceptionally low,” said President Peter S. Conti, MD, PhD.

Robert E. Henkin, MD, chair of the SNM Committee on Health Care Policy and Practice, said, “We agree with the USP findings and are pleased that nuclear medicine

procedures—such as PET scans to diagnose and monitor treatment in cancer, cardiac stress tests to analyze heart function, bone scans for orthopedic injuries, and lung scans for blood clots—continue to be safely prescribed, transcribed, dispensed, and administered.” The report indicated that 4 nuclear medicine patients in the study were affected by dispensing errors and that no patient suffered permanent injury. Given the participant information provided in the report, “the results would indicate that approximately 40 errors might be made in 20 million nuclear medicine procedures,” said Henkin. “SNM would like to work with the USP in the future and further define any issues that affect patients.”

USP Responds

The USP responded to criticism of the study later on January 18 with a statement from Roger L. Williams, MD, executive vice president and chief executive officer, who said, “We are disappointed with the response from the ACR regarding the USP report issued today on medication errors in radiological services. The ACR response is inaccurate and mischaracterizes the report and the 5-year compilation of data behind it. USP stands by the validity of its report, which was reviewed by USP’s Safe Medication Use Expert Committee, made up of independent healthcare experts, prior to publication. We also applaud the dedication of more than 850 hospitals who have reported medication errors to USP since 1998.”

On January 25 the USP followed up by issuing a list of “safety tips to help consumers prevent medication errors from occurring during their trip to radiological services.” Imaging service providers should be aware that patients may ask for cooperation from staff based on the following list provided by the USP:

1. Keep an up-to-date list of medications in your wallet or purse at all times.
2. Always inform the radiological services staff, as well as your health care providers, of all your allergies.
3. If you are transported to another area in the hospital, always ask where you are going and why.
4. When you are transported to radiological services, make sure your chart goes with you.
5. Whenever possible, have a family member or close friend with you to serve as your advocate for quality care.
6. For outpatients, make sure you fully understand the home preparation instructions for your scheduled procedure.

MEDMARX, which issued the report and is operated by USP, is an anonymous, Internet-accessible program used by hospitals and related institutions nationwide to report, track, and analyze medication errors. The report on radiology error is available for a fee from MEDMARX at www.usp.org/products/medMarx/. ❄