

What’s New in the Patient Safety World

May 2023

Factors Associated with Radiology Diagnostic Errors

A recent study ([Ivanovic 2023](#)) showed statistically significant associations of diagnostic error for neuroimaging examinations with longer interpretation times, higher shift volumes, and weekend interpretation. These three variables were found to be risk factors for diagnostic error at both the individual neuroradiologist and neuroradiology division levels, respectively. There was no association with emergency or inpatient settings or with trainee participation in interpretation.

Interesting findings, but further drill down would have been helpful. We strongly suspect that two factors probably underly these associations – fatigue and interruptions. We’ve done several columns on the impact of these:

- July 1, 2014 [“Interruptions and Radiologists”](#)
- November 2014 [“More Radiologist Interruptions”](#)
- April 2018 [“Radiologists Get Fatigued, Too”](#)
- May 2018 [“Cost of Interrupting a Radiologist”](#)

Ivanovic et al. note that the association between higher shift volumes and diagnostic error is consistent with the results of prior studies and numerous studies have found an association between error rates and longer radiology workdays, with a peak in errors after the 10th hour of work. They acknowledge that radiologist fatigue may account for these associations of error with shift volume or duration. Some prior studies have shown that radiology errors may be associated with shorter interpretation times but they suspect the association with longer interpretation times in their study may reflect more complex cases or that interruptions might have played a role.

Some of our prior columns on patient safety issues in the radiology suite:

- October 16, 2007 [“Radiology as a Site at High-Risk for Medication Errors”](#)
- February 19, 2008 [“MRI Safety”](#)
- September 16, 2008 [“More on Radiology as a High Risk Area”](#)

- October 7, 2008 [“Lessons from Falls....from Rehab Medicine”](#)
- October 2008 [“Preventing Infection in MRI”](#)
- March 17, 2009 [“More on MRI Safety”](#)
- March 2009 [“Risk of Burns during MRI Scans from Transdermal Drug Patches”](#)
- August 11, 2009 [“The Radiology Suite...Again!”](#)
- January 2010 [“Falls in the Radiology Suite”](#)
- August 2010 [“Sedation Costs for Pediatric MRI”](#)
- January 25, 2011 [“Procedural Sedation in Children”](#)
- February 1, 2011 [“MRI Safety Audit”](#)
- October 25, 2011 [“Renewed Focus on MRI Safety”](#)
- March 13, 2012 [“Medical Emergency Team Calls to Radiology”](#)
- August 2012 [“Newest MRI Hazard: Ingested Magnets”](#)
- October 22, 2013 [“How Safe Is Your Radiology Suite?”](#)
- February 25, 2014 [“Joint Commission Revised Diagnostic Imaging Requirements”](#)
- July 2014 [“New MRI Risks: for Staff!”](#)
- July 1, 2014 [“Interruptions and Radiologists”](#)
- November 2014 [“More Radiologist Interruptions”](#)
- October 21, 2014 [“The Fire Department and Your Hospital”](#)
- June 23, 2015 [“Again! Mistaking Antiseptic Solution for Radiographic Contrast”](#)
- August 25, 2015 [“Checklist for Intrahospital Transport”](#)
- March 22, 2016 [“Radiology Communication Errors May Surprise You”](#)
- August 2016 [“Guideline Update for Pediatric Sedation”](#)
- October 2016 [“MRI Safety: There’s an App for That!”](#)
- January 17, 2017 [“Pediatric MRI Safety”](#)
- August 8, 2017 [“Sedation for Pediatric MRI Rising”](#)
- November 14, 2017 [“Tracking C. diff to a CT Scanner”](#)
- March 2018 [“MRI Death a Reminder of Dangers”](#)
- March 2018 [“Cardiac Devices Safe During MRI But Spinners!?”](#)
- April 2018 [“Radiologists Get Fatigued, Too”](#)
- May 2018 [“Cost of Interrupting a Radiologist”](#)
- November 2018 [“OMG! Not My iPhone!”](#)
- December 11, 2018 [“Another NMBA Accident”](#)
- April 2, 2019 [“Unexpected Events During MRI”](#)
- September 2019 [“New MRI Hazard: Magnetic Eyelashes”](#)
- October 15, 2019 [“Lots More on MRI Safety”](#)
- November 5, 2019 [“A Near-Fatal MRI Incident”](#)
- November 12, 2019 [“Patient Photographs Again Help Radiologists”](#)
- November 26, 2019 [“Pennsylvania Law on Notifying Patients of Test Results”](#)
- January 7, 2020 [“Even More Concerns About MRI Safety”](#)
- July 14, 2020 [“A Thesis on Intrahospital Transports”](#)
- August 25, 2020 [“The Off-Hours Effect in Radiology”](#)

- October 2020 “[New Warnings on Implants and MRI](#)”
- January 2021 “[New MRI Risk: Face Masks](#)”
- May 25, 2021 “[Yes, Radiologists Have Handoffs, Too](#)”
- June 1, 2021 “[Stronger Magnets, More MRI Safety Concerns](#)”
- November 2021 “[Yet Another Risk During MRI](#)”
- January 2022 “[MRI Safety Issues](#)”
- February 2022 “[Managing Incidental Findings](#)”
- June 2022 “[Where Are You Barcoding?](#)”
- July 12, 2022 “[Radiologists Racked by Interruptions](#)”
- July 26, 2022 “[More Risks in the Radiology Suite](#)”

References:

Ivanovic V, Broadhead K, Beck R, et al. Factors Associated With Neuroradiology Diagnostic Errors at a Large Tertiary-Care Academic Medical Center: A Case-Control Study. American Journal of Roentgenology 2023; March 29, 2023
<https://www.ajronline.org/doi/abs/10.2214/AJR.22.28925>



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