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Impact on Quality of Neuroradiology Interpretations by Caseload

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Impact on Quality of Neuroradiology Interpretations by Caseload

I congratulate Patel et al¹ for their careful examination and publication of risk factors in their article “Risk Factors for Perceptual-versus-Interpretive Errors in Diagnostic Neuroradiology” and the *American Journal of Neuroradiology* for publishing it. This article is particularly meaningful to neuroradiologists because it is specific to our practice. Their finding that errors are linked to the number of cases read per hour by staff confirms what every neuroradiologist who has taken weekend call at a busy hospital system has long suspected. However, there is nothing quite like data since there is some disagreement within our specialty about what constitutes an appropriate workload that has been ongoing for years, even while it has steadily increased during my professional career.

A reasonable question from those outside of radiology is, “Why would radiologists ever read at a rate that could impact quality?” While it is hard to explain this to those involved in quality control in other high-risk industries like aviation, most of us really have no idea what our true error rates are either as individuals or as a group. Moreover, much like those imaginary children Garrison Keeler tells us about from Lake Wobegone, we all think we are above average. This approach is not unique to radiology, however; and in some surgical practices, it results in unrealistically favorable complication rates being quoted to patients during informed consent that were taken from published reports by the best surgeons in the world. The validation provided in this article provides a carefully established link between the reading rate and quality that has been suspected but rarely documented.

What is striking in this report, however, is the actual number of cases read per hour, 5 versus 6, where the error rate increased. Considering the standard practice at many hospitals of operating their MR imaging and CT scanners all weekend but with reduced faculty, that threshold I would expect is routinely and predictably exceeded. What currently is used to determine staffing in the neuroradiology section by many hospital administrations are the “benchmarks” derived from data from the radiology departments of other hospitals. The peril in this approach is that it is entirely possible that it could, and some would say has, led to everyone reading too many cases per day but at least consistently so.

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I have lately wondered if we are capable of regulating our own workplace in a way that protects the best interests of both our patients and staff. Unlike many industries that try to match staffing with planned increases in workload, it has been my experience that radiology departments willingly or unwillingly take on the work of a new scanner, outpatient center, or whole hospital with no added faculty as though their radiologists had not enough to do previously. Perhaps it will take outside regulation much like airline pilots and truck drivers who are not allowed to work beyond some fixed time limit, since we seem unable or unwilling to make the case within our hospitals or even among ourselves that quality suffers when caseloads become excessive.

Many readers I expect will challenge the findings of this article as they might apply to their own practice because the findings are not relevant to their particular case mix or workplace infrastructure. Some will say that they are well within the safety zone, figuring that they read about 50 cases in a 10-hour workday. Nevertheless, certainly in any academic practice, that calculation fails to take into account time spent answering questions on the phone, responsibility for teaching, and, heaven forbid, lunch. Until we have some guidance from our leadership or spend the time and money to calculate our actual individual miss rate as it relates to caseload—I expect it varies among neuroradiologists—this article represents an important step in the right direction, and I commend the authors and the journal for that.

REFERENCE

1. Patel SH, Stanton CL, Miller SG, et al. **Risk factors for perceptual-versus-interpretative errors in diagnostic neuroradiology.** *AJNR Am J Neuroradiol* 2019;40:1252–56 [CrossRef Medline](#)

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