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Diagnostic Errors More Common, Costly and Harmful Than Treatment Mistakes

Apr. 22, 2013 — In reviewing 25 years of U.S. malpractice claim payouts, Johns Hopkins researchers found that diagnostic errors -- not surgical mistakes or medication overdoses -- accounted for the largest fraction of claims, the most severe patient harm, and the highest total of penalty payouts. Diagnosis-related payments amounted to \$38.8 billion between 1986 and 2010, they found.

"This is more evidence that diagnostic errors could easily be the biggest patient safety and medical malpractice problem in the United States," says David E. Newman-Toker, M.D., Ph.D., an associate professor of neurology at the Johns Hopkins University School of Medicine and leader of the study published online in *BMJ Quality and Safety*. "There's a lot more harm associated with diagnostic errors than we imagined."

While the new study looked only at a subset of claims -- those that rose to the level of a malpractice payout -- researchers estimate the number of patients suffering misdiagnosis-related, potentially preventable, significant permanent injury or death annually in the United States ranges from 80,000 to 160,000.

Diagnostic error can be defined as a diagnosis that is missed, wrong or delayed, as detected by some subsequent definitive test or finding. The ensuing harm results from the delay or failure to treat a condition present when the working diagnosis was wrong or unknown, or from treatment provided for a condition not actually present. "Overall, diagnostic errors have been underappreciated and under-recognized because they're difficult to measure and keep track of owing to the frequent gap between the time the error occurs and when it's detected," Newman-Toker says. "These are frequent problems that have played second fiddle to medical and surgical errors, which are evident more immediately."

He says experts have often downplayed the scope of diagnostic errors not because they were unaware of the problem, but "because they were afraid to open up a can of worms they couldn't close." He adds: "Progress has been made confronting other types of patient harm, but there's probably not going to be a magic-bullet solution for diagnostic errors because they are more complex and diverse than other patient safety issues. We're going to need a lot more people focusing their efforts on this issue if we're going to successfully tackle it."

For their review, Newman-Toker and his colleagues analyzed medical malpractice payments data from the National Practitioner Data Bank, an electronic repository of all payments made on behalf of practitioners in the United States for malpractice settlements or judgments since 1986.

They found that of the 350,706 paid claims, diagnostic errors were the leading type (28.6 percent) and accounted for the highest proportion of total payments (35.2 percent). Diagnostic errors resulted in death or

disability almost twice as often as other error categories.

They also found that more diagnostic error claims were rooted in outpatient care than inpatient care, (68.8 percent vs. 31.2 percent) but inpatient diagnostic errors were more likely to be lethal (48.4 percent vs. 36.9 percent). The majority of diagnostic errors were missed diagnoses, rather than delayed or wrong ones. Per-claim payments were highest in cases of serious neurologic harm, including quadriplegia and brain damage resulting in the need for lifelong care. Those payments, the researchers found, were higher even than for errors resulting in death.

Newman-Toker noted that among malpractice claims, the number of lethal diagnostic errors was roughly the same as the number that resulted in permanent, severe harm to patients. This suggests that the public health impact of these types of mistakes is probably much greater than previously believed because prior estimates are based on autopsy data, so they only count deaths and not disability, Newman-Toker says.

The human toll of mistaken diagnoses is likely much greater than his team's review showed, Newman-Toker says, because the data they used covers only cases with the most severe consequences of diagnostic error. There are many others that occur daily that result in costly patient inconvenience and suffering, he says. One estimate suggests that when patients see a doctor for a new problem, the average diagnostic error rate may be as high as 15 percent.

The financial costs are difficult to unravel, Newman-Toker says, noting that tens of billions are spent every year on "defensive medicine," marked by unnecessary tests ordered to protect doctors from the possibility of a lawsuit for missing something. "Yet diagnoses are still missed, with grave consequences," he says.

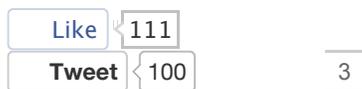
As with other kinds of medical errors, diagnostic mistakes won't succumb to a one-size-fits-all solution, Newman-Toker says. For example, patients with severe dizziness are misdiagnosed with benign inner ear conditions instead of stroke for a different set of reasons than an infection is missed due to misreading laboratory tests. Checklists may prevent misdiagnosis of some conditions, but not others.

More research money needs to be devoted to finding answers, he says.

"There just hasn't been enough attention paid to this," he says.

Other Johns Hopkins researchers involved in the study include Ali Shabahang Saber Tehrani, M.D.; HeeWon Lee, M.D.; Simon C. Mathews, M.D.; Andrew Shore, Ph.D.; Martin A. Makary, M.D., M.P.H.; and Peter J. Pronovost, M.D., Ph.D.

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1. Ali S Saber Tehrani, HeeWon Lee, Simon C Mathews, Andrew Shore, Martin A Makary, Peter J Pronovost, David E Newman-Toker. **25-Year summary of US malpractice claims for diagnostic errors 1986–2010: an analysis from the National Practitioner Data Bank.** *BMJ Qual Saf*, 22 April 2013 DOI: [10.1136/bmjqs-2012-001550](https://doi.org/10.1136/bmjqs-2012-001550)

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