

The Human Cost and Financial Impact of Misdiagnosis

KEY MESSAGES

- Most Americans will experience a diagnostic error at least once in their lifetime.
- Patient deaths due to these errors are estimated at 40,000 to 80,000 per year.
- Diagnostic errors and other inefficiencies cost the U.S. economy \$750 billion each year.

Introduction

Medical misdiagnosis, in the form of inaccurate, late, and delayed diagnoses, is an ongoing problem in the U.S. Not only do these diagnostic errors present an ongoing risk to the health and safety of patients, but they also cost the economy billions of dollars.

This paper summarizes the key research findings on the frequency, human cost, and financial impact of these diagnostic errors, while providing new data on the value of second opinions. An extensive Institute of Medicine (IOM) report underscores the importance of this with its conclusion that most Americans will receive an inaccurate or late diagnosis at least once in their lives, often with life-threatening consequences.

How Significant a Problem Is Misdiagnosis?

Misdiagnosis is the subject of a growing number of studies. The most recent one, *Improving Diagnosis in Healthcare* from the Institute of Medicine (IOM), explores the findings of many of these studies and notes that each year, approximately 12 million people in the U.S. who seek outpatient medical care experience some form of diagnostic error¹. Another Johns Hopkins study found that out of 6,000 cases from medical institutions across the country, one out of every 71 cancer cases was misdiagnosed and up to one out of five cancers were misclassified, errors which can result in delayed or inappropriate treatment.²

Other researchers have projected that the problem is even more significant (See Table 1):

Table 1: Prevalence of diagnostic errors in reported research

10% of patient deaths	Balogh, 2015 ¹
10-20% of cases	Graber, 2012 ³
25% of breast biopsies	Elmore, 2015 ⁴
29% of malpractice claims	Newman-Toker, 2013 ⁵

The Human Cost

Misdiagnosis too frequently results in serious harm to patients. In a survey of physicians, 64% said that up to 10% of the misdiagnoses they have experienced directly resulted in harm to the patient⁶. Another study found that 28% of 538 reported diagnostic errors were life-threatening or resulted in the patient's death or permanent disability.⁷

Since effective treatment depends upon an accurate and effective diagnosis, misdiagnosis can also lead to inappropriate or unnecessary testing, such as biopsies and treatment that may cause harm. A study by the Rand Corporation discovered that 30% of common surgical procedures, including coronary artery bypass graft surgery, were provided for reasons that were not supported by clinical studies and/or evidence-based treatment guidelines and may have resulted in complications or harm to the patients.⁸

“Approximately 12 million people in the U.S. who seek outpatient medical care experience some form of diagnostic error.”

The IOM report supports these findings, stating that diagnostic errors contribute to 10% of patient deaths and 6-17% of hospital adverse events. Other researchers quantify the human cost of diagnostic errors at between 40,000 and 80,000 deaths per year.⁹ These troubling findings make developing effective methods to prevent diagnostic errors an urgent priority.

The Financial Impact

In addition to causing physical harm, misdiagnosis also has a significant financial impact on the U.S. economy, individual patients, and businesses. Another IOM report estimates that 30% of annual healthcare spending in the United States, approximately \$750 billion, is wasted on unnecessary services and other inefficiencies.¹⁰

“30% of annual healthcare spending in the United States, approximately \$750 billion, is wasted.”

Patients and their families bear the more significant costs of diagnostic errors in the form of lifelong care for permanent disabilities and lost income due to the patient’s premature death or disability. Businesses also feel the impact in the loss of experienced employees, lost productivity, and increased insurance payouts.

Key Steps to Reduce Diagnostic Error

There are several steps that must be taken by healthcare professionals and patients and their families to reduce the incidence and cost of misdiagnosis in the U.S.:

- Consider a second opinion from an experienced specialist to confirm a diagnosis and appropriate treatment options
- Include all healthcare providers, including radiologists and pathologists, as integral members of the diagnostic team
- Leverage EHR and related technologies to organize communications across all care providers and the patient
- Actively and consistently involve the patient and family in the process of diagnosis and treatment

The Value of Second Opinions

Second opinions are another important tool that can help patients avoid misdiagnosis and inappropriate treatment. PinnacleCare reviewed data from a sampling of 1373 cases with known outcomes from 2012-2015. In nearly 77% of the total outcomes reported, PinnacleCare interventions led to changes in diagnosis, treatment, and/or treating physician. As a result, 30 patients avoided unnecessary or inappropriate surgery.

Patients who receive a serious diagnosis or a recommendation to undergo surgery should consider a second opinion from a specialist who treats a high volume of similar cases and is up-to-date on the latest research, treatment options, and clinical trials. This expert opinion will serve to confirm a preliminary diagnosis and treatment plan or suggest a more appropriate and sometimes less invasive treatment from the outset, when it can have the most significant impact on optimizing outcomes.

These steps can help prevent unnecessary procedures and minimize potential complications to yield the best possible care and outcome for the patient.

References

1. *Improving Diagnosis in Healthcare*, Erin P. Balogh, Bryan T. Miller, and John R. Ball, Editors. <http://www.nap.edu/21794>
2. *Mandatory second opinion surgical pathology at a large referral hospital*, Joseph D. Kronz M.D., William H. Westra M.D., Jonathan I. Epstein M.D. *Cancer*, <http://go.ggl/1INhg4>
3. *Bringing Diagnosis Into the Quality and Safety Equations*, Mark L. Graber, MD, Robert M. Wachter, MD, Christine K. Cassel, MD, MSc. *Journal of the American Medical Association*, <http://jama.jamanetwork.com/article.aspx?articleid=1362034>
4. *Diagnostic Concordance Among Pathologists Interpreting Breast Biopsy Specimens*, Joann G. Elmore, MD, MPH, et al. *Journal of the American Medical Association*, <http://jama.jamanetwork.com/article.aspx?articleid=2203798>
5. *25-Year summary of US malpractice claims for diagnostic errors 1986–2010: an analysis from the National Practitioner Data Bank*, David E. Newman-Toker, MD, MPH, et al. *BMJ Quality & Safety*. <http://qualitysafety.bmj.com/content/early/2013/03/27/bmjqs-2012-001550.abstract>
6. *Physician Perspectives on Preventing Diagnostic Errors*, Owen W. MacDonald. https://kaiserhealthnews.files.wordpress.com/2013/05/quantiamd_preventingdiagnosticerrors_whitepaper_1.pdf
7. *Diagnostic error in medicine: analysis of 583 physician-reported errors*. G.D. Schiff, et al. *Archives of Internal Medicine*. <http://archinte.jamanetwork.com/article.aspx?articleid=1108559>
8. *U.S. Healthcare: Facts About Cost, Access, and Quality*, Dana P. Goldman and Elizabeth A. McGlynn. http://www.rand.org/content/dam/rand/pubs/corporate_pubs/2005/RAND_CP484.1.pdf
9. *Counting Deaths Due to Medical Errors*, Lucien Leape. *Journal of the American Medical Association*.
10. *Best Care at Lower Cost: The Path to Continuously Learning Health Care in America*. Mark Smith, Robert Saunders, Leigh Stuckhardt, and J. Michael McGinnis, Editors. <http://www.nap.edu/catalog/13444>

For more information about strategies to help avoid the human and financial costs of misdiagnosis, please contact PinnacleCare at www.pinnaclecare.com/info/misdiagnosis.

