

# Myths and Facts About Diagnostic Error

## Patient and Families

### Diagnostic Error MYTHS

1. **No news is good news.**
2. **My doctors are talking to one another.**
3. **My doctor is different.**
4. **Somebody is in charge of my diagnosis.**
5. **There is always an answer.**
6. **My hunches don't count as much as my physician's.**
7. **I would be disloyal to my physician if I asked for a second opinion.**
8. **My insurance won't pay for a second opinion.**
9. **The more tests I have, the better.**
10. **Diagnosis errors won't happen to me.**

Source: <http://www.improvediagnosis.org/?page=Myths>

### Diagnostic Error FACTS

1. **What is diagnostic error?**
  - Diagnosis that is wrong, missed or delayed. (Graber 2005) Other definitions note missed opportunities or breakdowns in the diagnostic process.
2. **What do we know about diagnostic error?**
  - It's frequent and harmful.
  - It's under-recognized, under-studied and not integrated into quality assurance measures or activities. (Newman-Toker and Pronovost 2010)
3. **How often does it happen?**
  - Approximately 5-15% of the time (Berner and Graber 2008 and other sources)
4. **Where do we get information about diagnostic error?**
  - Autopsy data
  - Physician self-reports of experiencing diagnostic error
  - Patient self-reports of experiencing diagnostic error
  - Databases of reported error
  - Peer-reviewed journal studies
  - Medical malpractice claims data
5. **What can be learned from malpractice data?**
  - Claims data serves as a window into understanding diagnostic errors. Reviewing claims can provide information on the conditions involved and the severity of the injury that occurred. Other insights relate to the setting of care, and to some extent the causes of diagnostic error.
  - Claims data has limitations. Most errors and injuries do NOT result in claims, and cases filed are often those with large financial consequences. For these reason claims data cannot be used to estimate the incidence of diagnostic error.
  - Several national organizations provide public data on malpractice claims, including the National Practitioner Data Bank and the Physicians Insurance Association of America Data Sharing Report.
  - Several excellent publications have used claims data to better understand diagnostic error. (Griffen 2008, Studdert and Mello 2006, and others)
  - A study by the Rand Corporation in 2010 found that organizations that emphasized patient safety had fewer adverse medical events and fewer malpractice claims. This makes sense, but it is one of the few studies that has demonstrates that improving patient safety translates into improved relevant outcomes. (Greenberg et al, 2010)
6. **How often does diagnostic error lead to adverse events and death? How often is death due to diagnostic error?**
  - Many errors are unknown (low rate of autopsy, patients going elsewhere for care), therefore the exact relationship is not known.
  - A Harvard study showed diagnostic errors accounting for 17% of adverse events. (Leape, Brennan 1991)
  - In malpractice claims involving death, diagnostic error is the most frequent allegation at 26%. (Physician Insurer, PIAA 2010)

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### 7. Isn't diagnostic error more associated with hospital care than care given in the physician's office?

- No. Diagnostic error was the #1 cause of claims in ambulatory care and #2 in hospitals (after improper performance of a procedure), but the totals were fairly close. (Bishop et al JAMA 2011, based on NPDB data)

### 8. What is the cause of diagnostic error?

- Diagnostic error typically reflects the complexity of the diagnostic process, and most often includes both system-related and cognitive elements.
- In studies that have tried to uncover the causes of diagnostic error, multiple root causes have been found. In one study, an average of 6 root factors were identified per case. (Graber 2005) The diagnostic error reflects the 'perfect storm' of these contributing events.

### 9. What is the difference between cognitive and systems errors?

- Cognitive errors reflect breakdowns in the clinical reasoning process. These errors can involve knowledge deficits, failing to acquire or use the relevant data, and/or breakdowns in 'putting it all together' to derive the best diagnosis.
- Most cognitive diagnosis errors are the medical counterparts to cognitive errors we make in our everyday lives. We may misinterpret something we hear or see. We may make an important decision without having gathered all the facts. An example are the times we solve some dilemma facing us, but fail to consider whether there might be a better solution than our original one.
- Systems errors reflect the complex, inter-related pieces of our current health care system. The most common are breakdowns in communication and coordinating care, for example, "dropping the ball" in the referral/consultation or hand-off process.

### 10. Is diagnostic error more closely associated with some specialties than others?

- Yes, but it is a significant factor for claims in all specialties.
- It is the #1 cause of malpractice claims for all primary care specialties (internal medicine, family and general practice, pediatrics), radiology and emergency medicine, and most of the medical sub-specialties.
- It is the #2 cause of malpractice claims for surgical specialties (OB/GYN, general surgery, orthopedics and most of the surgical sub-specialties).

### 11. Is it the rare diagnosis that is the subject of diagnostic error?

- In one sense, yes. A very rare disease, or a very unusual presentation of a common disease will both predispose to diagnostic error. However, most diagnostic errors involve common diseases. Studies based on malpractice claims data typically find that most claims involve the

common killers: heart attack, cancer, and stroke. Delayed diagnosis of breast cancer is the top diagnosis in claims related to diagnostic error. (PIAA Data Sharing Report 1985-2009)

- Acute myocardial infarction is the top subject of diagnostic error in claims for the specialties of adult primary care, emergency medicine, and cardiology. (PIAA Data Sharing Report 1985-2009)
- Stroke is associated with diagnostic error 9% of the time. (Newman-Toker et al 2008)
- For family and general practice, the top diagnoses involved in diagnostic error in descending order were myocardial infarction, breast cancer, appendicitis, colorectal cancer, and lung cancer.
- In a study of physician self-reported diagnostic errors, the diagnoses most often involved were pulmonary embolism, drug reaction or overdose, lung cancer, colorectal cancer, acute coronary syndrome, breast cancer, and stroke. (Schiff et al 2009)
- Certain diagnoses like pulmonary embolism and aortic dissection may not be found until autopsy. But the rate of autopsies performed in the U.S. has declined steeply, so these problems and others are under-detected at an unknown rate.

### 12. What can be done to reduce diagnostic error and harm?

- Raise awareness of diagnostic error and its importance among patients, physicians, health care organizations, and funding sources.
- Increase funding and attention to research into causes of and remedies for diagnostic error.
- Develop databases and guidelines to improve clinical decision-making tools.
- Integrate teaching about cognitive error and diagnostic error into medical school curricula, resident training, and continuing education.
- Include goals related to improving diagnostic accuracy in quality improvement/quality assurance activities and measures.
- Invest in and make available the following things to the physician at the point of care: clinical decision-making support systems, electronic medical records, integrated physician office-hospital-lab-imaging facility records, and other aids to improve diagnostic accuracy.
- Develop the means to measure diagnostic error and provide report cards to practitioners.
- Develop a corps of physician champions who are dedicated to improving accuracy in medical diagnosis and make connections to spread this initiative internationally.

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