Diagnosing the Diagnostic Dilemma
Part One: Data Analysis

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CRICO Strategies of the Harvard Medical Institutions

Session Objectives

This session will explore more than 4,000 diagnostic-related malpractice cases that reveal the drivers of a missed or delayed diagnosis, provide a review of the recent IOM report on diagnostic medicine, and review solutions that have been trialed in a variety of settings

- Describe the key drivers of diagnostic failure
- Define recommendations from the IOM report
- Identify key opportunities for improvement in the diagnostic process
Part 1: Dana Siegal RN, CPHRM

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Placeholder - Please Note:

Certain slides have been removed to facilitate audience participation during this presentation.
What is the Diagnostic Dilemma

Every physician—even the most brilliant—makes a misdiagnosis or chooses a wrong therapy.

About 80 to 85 percent of the time, an experienced clinician will make the correct diagnosis...(choose the right treatment) ...

...About 15 to 20 percent of the time we’re wrong.

What is the Diagnostic Dilemma

1/1000 dx encounters result in diagnostic error

• The average sized hospital will see:
  › 1 ambulatory pt harmed/day
  › 5-10 deaths/year

HSingh 2013, MGraber 2014

Diagnostic errors occur across all care settings

• More prevalent in outpatient vs inpatient setting
  › (68.8% vs 31.2) NPDB 5 yr summary of malpractice claims

• Inpatient diagnostic errors more likely to be lethal
  › (48.4% vs 36.9% elsewhere)

David E. Newman-Toker, MD, PhD, et al
Johns Hopkins University School of Medicine
What is the Diagnostic Dilemma

...data on diagnostic errors are sparse
...few reliable measures exist
...errors are often found in retrospect

What drives diagnostic error?
Improving Diagnosis in Healthcare; IOM; 09/2015

- Inadequate collaboration and communication among clinicians, patients, and their families;
- A healthcare work system ill-designed to support the diagnostic process; limited feedback to clinicians about the accuracy of diagnoses;
- A culture that discourages transparency and disclosure of diagnostic errors, which impedes attempts to learn and improve.
Can we improve diagnostic error?

Improving Diagnosis in Healthcare; IOM; 09/2015

Errors will likely worsen as the delivery of healthcare and the diagnostic process increase in complexity ....

...to improve diagnosis, a significant re-envisioning of the diagnostic process and a widespread commitment to change from a variety of stakeholders will be required.

Analysis of Diagnosis-Related Medical Malpractice cases

4,140 cases | asserted between 1/1/09–12/31/13
CRICO

• The Captive insurer of the Harvard Medical Institutions
  (Claims, Litigation, Patient Safety)

• Insures:
  • 12,400+ physicians
  • 32 hospitals
  • 100,000+ employees (APCs, Nurses, Technicians etc).

• Using MPL Data to drive Risk Mitigation for <30 years

CRICO STRATEGIES

• A division of CRICO that expands the analytical and patient safety tools to a national community of learning

• Partners:
  • >165,000 physicians
  • ~400 hospitals
    • University Systems
    • Physician Insurers
    • Captive Insurers
  • ~8-10,000 new cases annually

Comparative Benchmarking System CBS

A national database of over 300,000 Medical Professional Liability cases representing ~ 30% of all paid physician claims* in the US

Overview of CBS

Comparative Benchmark System

• Open and closed - claims & suits
• Clinical, legal, and financial attributes
• Denominators e.g., visit, surgeries, days, births
• Multiple peer groups for comparative analysis:
  ✓ Academic-Teaching-Community
  ✓ Size / Volume Based

• Proprietary Coding Taxonomy for “mining’ MPL claims for learning
  ✓ Hundreds of “Contributing Factor” (causation) codes in a tiered structure proving for rich analysis and learning of clinical process/system errors that result in harm

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Surgery-related allegations account for greatest number (#) of cases, while diagnosis related allegations account for highest total incurred($).

The clinical severity* of diagnosis-related cases is similar in the academic & community setting.

For diagnosis-related cases, those arising from the **Ambulatory and ED** setting account for **75%** of the cases.

Together, **General and Emergency Medicine** account for **36%** of the cases and **39%** of the dollars associated with diagnostic allegations.
Radiology and Pathology are also named as Primary Providers in diagnostic allegations.

Orthopedics and General Surgery are the most common surgical services involved in diagnostic cases.

N=4,140 MPL cases asserted 1/1/09–12/31/13 with a diagnosis-related major allegation.
Distribution of the top (missed or delayed) diagnoses across ALL diagnosis-related malpractice cases.

- Cancer: 30%
- Injury: 23%
- Cardiac diseases: 7%
- Digestive system: 7%
- Nervous system and sense organs: 13%
- Cerebrovascular: 4%
- Other: 17% (Total of multiple small # contributors)

Diagnostic failure is the #1 cause of malpractice in Emergency Medicine
Top diagnostic failures in the **ED** are similar in an analysis of AMC vs. Community claims

<table>
<thead>
<tr>
<th>Community</th>
<th>Academic</th>
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<tbody>
<tr>
<td>MI’s</td>
<td>MI’s</td>
</tr>
<tr>
<td>CVA</td>
<td>GI Issues</td>
</tr>
<tr>
<td>Fractures</td>
<td>Fractures</td>
</tr>
<tr>
<td>GI Issues</td>
<td>Medication Toxicity</td>
</tr>
</tbody>
</table>

Analysis of **ED claims** w/a diagnostic allegation revealed **5 consistent areas of vulnerability**

1. Obtaining complete / accurate historical information
2. Adequacy of real time clinical assessment
   - Discharge vital signs
3. Timeliness of diagnostic testing and result management
   - Radiology
   - Laboratory
4. Management of Consultations
5. Communication among MD/RN Care Team
   - Active / current care team
   - Handoffs
Placeholder - Please Note:

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SOLUTIONS need to focus on multidisciplinary collaboration in clinical assessment & communication.

Develop clinical communication triggers
- Determine key physiological parameters (e.g. HR, BP, O2, altered mental status)
- Bring RN, MD, PA, Tech together at bedside
- Discussion of significance / updates to care plan

Discharge Checklist
- Leverage usual communication point, elevate with checklist
- Ensure discharge policies (e.g. VS) are completed

Routine Huddles
- Schedule at regular times (e.g. q 2-4 hrs)

Diagnostic Time Outs
- Live synthesis BEFORE discharge to remove anchoring on dx

Team Training
- Based on cases that involve teamwork and communication
- 3-4 medium severity patients being managed concurrently
Communication plays a key role in inpatient cases of diagnostic failure

Data-driven solutions – a case study
Communication Trigger Cards

Growing concern re: host of "failure to rescue" cases in the post op / surgical setting

Treated the concern as an opportunity to further explore issues

Dove Deeper:
- Were the complications avoidable?
- Was there a specific trend / pattern / root cause that could be identified?
- Was there an opportunity to intervene / improve outcomes?

Acted:
- Identified communications issues as a key driver of these cases
- Developed a survey to further validate / understand the communication gaps
- Designed the Communication Trigger Card
- Implemented and "spread" to other services

Monitor:
- Develop post implementation survey to monitor improvement
- Developed standard for sustaining use

Action Plan: need to sustain the consistent training

Was there an identifiable root cause? ... YES

What drove these cases
- Is there an improvement opportunity
- How do we respond?
Solution: Resident-to-Attending Communication Guidelines (front)

**Department of Surgery**

**Expected communication practices for patients admitted to surgical services**

1. For all critical changes in a patient’s condition, the attending will be notified promptly (generally within 1 hour following evaluation). These include:

- Admission to the hospital
- Transfer to the ICU
- Unplanned intubation or ventilatory support
- Cardiac arrest
- Hemodynamic instability (including arrhythmias)
- Code
- Development of significant neurological changes (suspected CVA, seizure/new onset paralysis)
- Development of major wound complications (dehiscence, evisceration)
- Medication or treatment errors requiring clinical intervention (invasive procedures), increased monitoring, new medications except Narcan
- First blood transfusion without prior attending knowledge or instruction (before or after operation)
- Development of any clinical problem requiring an invasive procedure or operation for treatment

(continued on back)

Solution: Resident-to-Attending Communication Guidelines (back)

2. The following will be discussed with and approved by the attending before they occur:

- Discharge from the hospital or from the Emergency Department
- Transfer out of ICU

3. The attending should also be contacted if:

- Any trainee feels that a situation is more complicated than he or she can manage
- Nursing or physician staff, or the patient request that the attending surgeon be contacted
Test result management is one of the key factors in successful ambulatory diagnostic medicine.

Top Diagnosis in Ambulatory Diagnosis Cases

<table>
<thead>
<tr>
<th>DIAGNOSIS</th>
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<tbody>
<tr>
<td>Breast cancer</td>
</tr>
<tr>
<td>Heart disease</td>
</tr>
<tr>
<td>Lung cancer</td>
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<tr>
<td>Fractures</td>
</tr>
<tr>
<td>Complications of surgical procedures or medical care</td>
</tr>
<tr>
<td>Skin cancer</td>
</tr>
<tr>
<td>Benign neoplasms</td>
</tr>
<tr>
<td>Prostate cancer</td>
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N=2,383 coded MPL cases asserted 1/1/09–12/31/13 with a diagnosis-related major allegation and involving an ambulatory care patient.
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