A Patient Safety “Early Warning” System

Getting the Complete Picture – Harnessing the Intel that Matters the Most

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Coverys – formerly ProMutual Group...

- Originated as a joint underwriting association (JUA) in 1975 – created by the Massachusetts Legislature
- In 1992, converted to the Medical Professional Mutual Insurance Association, also known as ProMutual Group
- Covered clinicians, practices, and hospitals almost entirely within the Commonwealth of Massachusetts until 10-12 years ago
- Went national, acquired other insurance companies, and became “Coverys”
- Now, the fifth largest MPL carrier in the United States
- In 2013, began work to create our own comparative benchmarking database...
Coverys’ Comparative Benchmarking Database

- Team of coders began work in late 2013, with emphasis on clinical knowledge and experience with malpractice claim files
- Strong focus on Inter-rater reliability
- Essentially, root cause analyses on every claim file
- By 2016, they had coded all cases back to 2009
- By 2019, we had ~25,000 deeply coded cases, covering a span of 10+ years
- Had started publishing our data in 2016; by 2020, decided to produce a report initially entitled “Insights From a Decade of Malpractice Claims”...
Produced in October 2020 – “A Call for Action”
The rate of claims for general medicine has \textit{trended upward} in recent years.

One of the primary contributors to this is \textit{diagnostic error}, which has shown virtually no improvement over the last decade.

Claims Rate: \( N = 9,935 \) physicians between 2010-2019.

Indemnity: \( N = 586 \) closed claims with indemnity paid between 2010-2019.
• The rate of claims per 100 surgeons is on a downward trend, with an average of 12.4 claims per 100 physicians during 2010-2014, lowered to 9.7 from 2015 to 2019

• Improvements are noted in claims involving wrong-site surgery and retained objects

• “Technical performance” [skill-based] issues have shown minimal improvement over the past decade
We often describe malpractice claims as the “tip of the iceberg”...
Obstetrics (2010-2019)

- Claims frequency in obstetrical cases *increased slightly* from an average of 9.1 claims per 100 physicians, 2010-2014, to 9.5 claims per 100 physicians, 2015-2019
- The rate of claims with indemnity paid was 32%, significantly higher than other types of claims
- The L&D phase of care continues to be problematic, but pre-natal management issues *have increased* over the last 10 years

Claims Rate: N = 2,797 physicians between 2010-2019.
Indemnity: N = 1,207 claims closed with indemnity paid between 2010-2019.
The rate of claims for emergency medicine appears to be declining.

Missed or delayed diagnosis continues to be the dominant issue in emergency medicine claims (53%), significantly higher than other issues such as medication error (10%).
Anesthesiology (2010-2019)

• Through the lens of malpractice, anesthesia is a success story.
• The overall claims rate reduced significantly from 4.7 claims per 100 physicians, 2010-2014, to 2.3 per 100, 2015-2019.
• The practice of anesthesia now highly data driven, with a focus on simulation training, crisis management, and evidence-based decision making.

Claims rate: N = 9,935 claims opened between 2010-2019 involving an anesthesiologist.
Indemnity: N = 586 events closed between 2010-2019 involving an anesthesiologist.

Claims Rate: N = 9,935 physicians between 2010-2019.
Physicians with Multiple Claims

Top Specialties With Multiple Claims

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Two claims</th>
<th>Three or more claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>8.7%</td>
<td>3.5%</td>
</tr>
<tr>
<td>OB/GYN</td>
<td>6.4%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Radiology</td>
<td>4.4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Emergency</td>
<td>2.9%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Anesthesia</td>
<td>2.1%</td>
<td>0.5%</td>
</tr>
<tr>
<td>General Medicine</td>
<td>1.3%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

Top Surgical Specialties With Multiple Claims

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Two claims</th>
<th>Three or more claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurosurgery</td>
<td>19.8%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Bariatric Surgery</td>
<td>16.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>13.3%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Trauma Surgery</td>
<td>12.7%</td>
<td>7.9%</td>
</tr>
<tr>
<td>General Surgery</td>
<td>9.5%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Orthopedic Surgery</td>
<td>8.1%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Vascular Surgery</td>
<td>7.9%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

- Physicians who experience more than one claim during a given time period represent a unique subset of defendants.
- Those with two or more claims are statistically likelier to be sued again.
- Surgical specialties hold a higher risk for multiple claims.

Top Specialties: N = 38,044 claims closed between 2010-2019 involving a physician.
Surgical Specialties: N = 4,818 claims closed between 2010-2019 involving surgery.
In 1999, the groundbreaking IOM report was released…

… shocking the public and spurring a multitude of patient safety initiatives…
“Big Data” for healthcare looks like this...
A “Divining Rod” for Patient Safety...

Malpractice Data

- Deeply analyzed cases -- particularly valuable if causation factors can be aggregated
- Provides important “signal data” that can guide what to look for in present-day setting
- Has dollars associated with it

Limitations:

- Always a look to the past
- Small numbers raise question of statistical significance
- Unique convergences of factors don’t generally repeat themselves in exactly the same way
Providing a Value-Based Model to Improve Outcomes

**Signals**
- Capture
  - The deeply rooted drivers of malpractice cases
- Frame & Compare
  - Aggregated comparisons provide context

**Assessment**
- Risk Assessment
  - What are the signals?
  - Are they strong?
  - Do vulnerabilities still exist?
- Advanced Analytics
  - To what degree will risk continue if action isn’t taken?

**Implementation**
- Align Best Practices to Reduce Risk and Maximize Reimbursements
  - Implement solutions to reduce errors and help meet value-based quality metrics.

**Improve Outcomes**
- Results & Measurement
  - Thriving physician practices and hospitals:
    - safer care for patients,
    - improved revenue and
    - reduced malpractice risk
Many “sources of truth” for healthcare safety

- Adverse event data
- Root-cause analyses (for serious reportable events)
- Patient complaints
- Patient satisfaction surveys
- M&M rounds, patient rounds
- Malpractice data
- “Near-miss” data
Burning questions…

- Who is looking at these data sets?
- Where is this intel going?
- Are the signals from this data being captured?
- Is there any centralization of this data?
- How is this data influencing organizational priorities?
Missing: “Central Intel” – no early warning system for healthcare...
Intel from Adverse Events, SREs-Root Cause Analyses
Forms – and more forms...
II. Submitting an Incident Report
To submit a new incident report, click on the most appropriate Icon Wall event type button.

The Patient Experience form is used to report patient complaints and concerns regarding care & treatment, quality of care, communication difficulties, and attitude/courtesy of non-physician staff. It may also be used to submit kudos & compliments from patients.

The Patient Behavior form is used to report significant or repeated difficult, disruptive, threatening, non-compliant, and drug-seeking patient behaviors as well as alleged drug diversion (selling meds).

The General Liability form is used to report a patient’s or visitor’s slip, trip, fall or injury occurring outside the realm of providing health care services. (If the slip, trip, fall or injury occurs while providing patient care, it should be submitted using the Patient Experience form.)

The Patient Privacy form is used to report matters including, but not limited to, HIPAA violations, privacy and/or breach of patient confidentiality, errors in mailing or faxing, and the theft/loss of a computer or smartphone.

The Medical Care and Treatment form is used to report incidents in the medical care setting including, but not limited to, missed/delayed diagnoses, unexpected/adverse clinical outcomes, unexpected death, informed consent regarding treatment, and inadequate evaluation/treatment.

The Surgery/Procedure form is used to report incidents in the surgical/procedural setting including, but not limited to, surgical/procedural complications/return to the OR, complications of anesthesia, contamination, wrong site/site marking issue, unexpected death, and procedural informed consent.

The Medication/Chemotherapy form is used to report incidents including, but not limited to, medication, pharmacy issues, chemo chemical spills, 7 Rights of Medication, adverse drug reactions, and chemo medication issues.

The Lab/Specimen form is used to report incidents including, but not limited to, delays in testing/reporting, lost specimens, labeling issues, wrong test(s) performed, transport issues, critical values not called, and blood product issues.

The Diagnostic Imaging form is used to report Imaging (X-Ray, CT, MRI, ultrasound, mammography) and Nuclear Medicine Incidents including, but not limited to, adverse or allergic reactions, exam problems (wrong site, order issues, incorrect patient, incorrect or incomplete study), interpretation issues, delayed results, and radiation exposure.
Serious Reportable Events – nearly 30 of them

- **Surgical or Invasive Procedure Events**
  - e.g., “the wrongs”; retention of foreign object; intra- or post-op pt. death

- **Product or Device Events**
  - e.g., death/injury from contaminated products, devices, drugs; death/injury from use or function; death/injury from intravascular air embolism

- **Patient Protection Events**
  - e.g., patients unable to care for themselves; death/injury related to pt. elopement; pt. suicide

- **Care Management Events**
  - e.g., death/injury, med errors, blood products, L&D, neonates, falls, pressure ulcers, pathology, radiology, etc.
SREs, continued

- **Environmental Events**
  - e.g., death/injury, electric shock, oxygen, gas, toxic substances, burns, restraints, etc.

- **Radiologic Events**
  - e.g., death/injury, metallic objects in MRIs

- **Potential Criminal Events**
  - e.g., impersonation, abduction, sexual assault-abuse, death/injury from physical assault
Root Cause Analysis – Patient Fall

Figure 1: Causal tree (fishbone) analysis of causes of falls in the case of patient number 1.
Root-Cause Analysis – Medication Error

- **Tasks and Technology**
  - Lack of socialization of the norms for managing central venous routes.
  - Lack of socialization of the norms for administering medications via central and peripheral routes.

- **Work Environment**
  - Frequently, there is a lack of personnel; 20% of medical licenses are not filled.

- **Work Team**
  - Lack of ongoing training because of high workload.
  - Difficulty in incorporating norms and procedures because of workload and rotation of personnel.
  - Lack of oral and written communication among teams of health providers.
  - Lack of supervision and monitoring because of workload.

- **Medication Errors**

  - Patients with a high demand for specialized care.
  - Nursing professionals with little or no prior experience with patients requiring specialized care.

- **Patient**
- **Individual**
Patient Complaints – high correlation to malpractice

**Why do patients sue?**

– It many times is for the same reason that they may register a complaint
– Unhappy with—
  • care received
  • the way they were treated
  • experienced a mistake that nobody acknowledged
  • frustrated with wait times and delays
  • felt nobody was listening to them...
– Those factors combined with an adverse outcome (whether there was negligence or not) can add up to a litigious patient – or family
Patient Complaint Data: *high value*...

- Despite the inherent “clutter” in patient complaints, this is the voice of the patient
- This is the patient venting their frustration but—
  - ... in so doing, providing *important signals* to healthcare organizations
- Emphasis in recent years is to pay more attention to complaints that line up with known areas of vulnerabilities. For example:
  - Receiving the wrong medication in a hospital or SNF
  - Receiving unnecessary surgery / diagnostic testing
  - Receiving an overdose of medication
  - Experiencing a delay in service
  - Receiving inadequate care or treatment by the physician, care team, or hospital
  - Experiencing a change in condition that was overlooked and not treated
  - Receiving a misdiagnosis
  - Receiving inadequate or even erroneous discharge instructions
Patient Satisfaction Survey Intel
Patient Satisfaction Scores: *preventing harm*...

- Patient Satisfaction scores have historically been high for healthcare organizations.
- Easy to fall into a trap: “we look as good – even better – than our peers. We’re doing fine!”
- In recent years, there have been numerous initiatives by hospitals to improve their scores. For example:
  - Training staff to be compassionate, kind, and supportive of patients throughout their treatment
  - Educating patients on financial aspects of their care, including payment of bills
  - Emphasis on “amenities” that might be available to patients
- **But a guaranteed approach to lowering scores is to harm patients**
  - Provider institutions must ensure that patient safety is always viewed as the top priority
What can – and should – be gleaned from Pt. Satisfaction scores?

- **Signals that safe care has vulnerabilities**
- **For example, a focus on scores that reflect –**
  - perceptions of a poor patient safety culture
    - AHRQ: “Improving the culture of safety within healthcare is an essential component of preventing or reducing errors and improving healthcare quality”
    - Surveys have been designed to capture key data points related to culture
  - issues related to accommodating diversity
  - failure to detect problems as clinical care is being delivered
  - communication failures
- **A mindset that shifts away from “look how good we are doing” to “what are indicators – the signals – that we need to pay more attention to?”**
The HRO Promise
High Reliability Organizations (HROs)

- **Attributes:**

- **Industries that need it the most:**
  - those who are continuously faced with the unpredictable, those that operate under trying conditions

- **Industries that have done well in becoming HROs:**
  - nuclear power plants, firefighting units, aviation air traffic control, etc.

- **Industries that have not done well:**
  - Healthcare (with hospital EDs being a possible exception)

- **Key difference between HROs and other organizations:**
  - “The sensitivity or mindfulness with which people in most HROs react to even very weak signals that some kind of threat is present or approaching”
  - Most companies, including healthcare, are “hugely unprepared for the unpredictable”
HROs need data -- an “early warning system”

Attributes of an Early Warning System

– A chain of information and action that relies on:
  • Centralized – and credible – data
  • Analytics that collect and weight key data sets
  • The ability to nimbly assess risk when signals are detected
  • The capability to monitor issues that pose threats to safety
  • A mindfulness – and a readiness – to respond, to proactively take steps to reduce the threat
Key Questions...

- Do healthcare organizations systematically analyze data sources to identify patterns and trends?
- Do they sufficiently mine the data they identify in early warning systems that exist such as rounding?
- What are patients saying at the local level that they can track and trend and subsequently improve?
- How is the data from all key information sources being used to provide the leaders with a comprehensive 30,000-foot view of what the patient is experiencing?

We need to create a robust system of data integration that identifies trends, patterns, and signals.
The Future Model
“Central Intel” – from numerous key sources
What are the parts and pieces?

What is needed:

- Organizational will
- Innovative thinking – the commitment to break away from past paradigms
- A common taxonomy – to be applied to all data sets contributing to central intel
- Training staff on how to report, with a strong emphasis on preventing future harm
- Ensuring good data quality for all key data sets
- Robust analytics
Think about a lighthouse...

Ancient concept: using signals, a *central emitter* of potential hazards. Highly visible, a trusted source of truth...
-- shining early warning beacons on the “crates” where risk to safe patient care is brewing...