

# Neurology

## Claims Data Snapshot

2023



**This publication begins with insight into frequency and financial severity profiles by specialty. Then follows an analysis of aggregated data from clinically coded cases opened between 2012-2021 in which Neurology is identified as the primary responsible service.**

## **Keep in mind...**

A clinically coded malpractice case can have more than one responsible service, but the “primary responsible service” is the specialty that is deemed to be most responsible for the resulting patient outcome.

Our data system, and analysis, rolls all claims/suits related to an individual patient event into one case for coding purposes. Therefore, a case may be made up of one or more individual claims/suits and multiple defendant types such as hospital, physician, and other healthcare professionals.

Cases that involve attorney representations at depositions, State Board actions, and general liability cases are not included.

This analysis is designed to provide insured doctors, healthcare professionals, hospitals, health systems, and associated risk management staff with detailed case data to assist them in purposefully focusing their risk management and patient safety efforts.

# Specialty benchmarking

Specialties have different frequency and financial severity profiles which combine to produce differing risk levels.

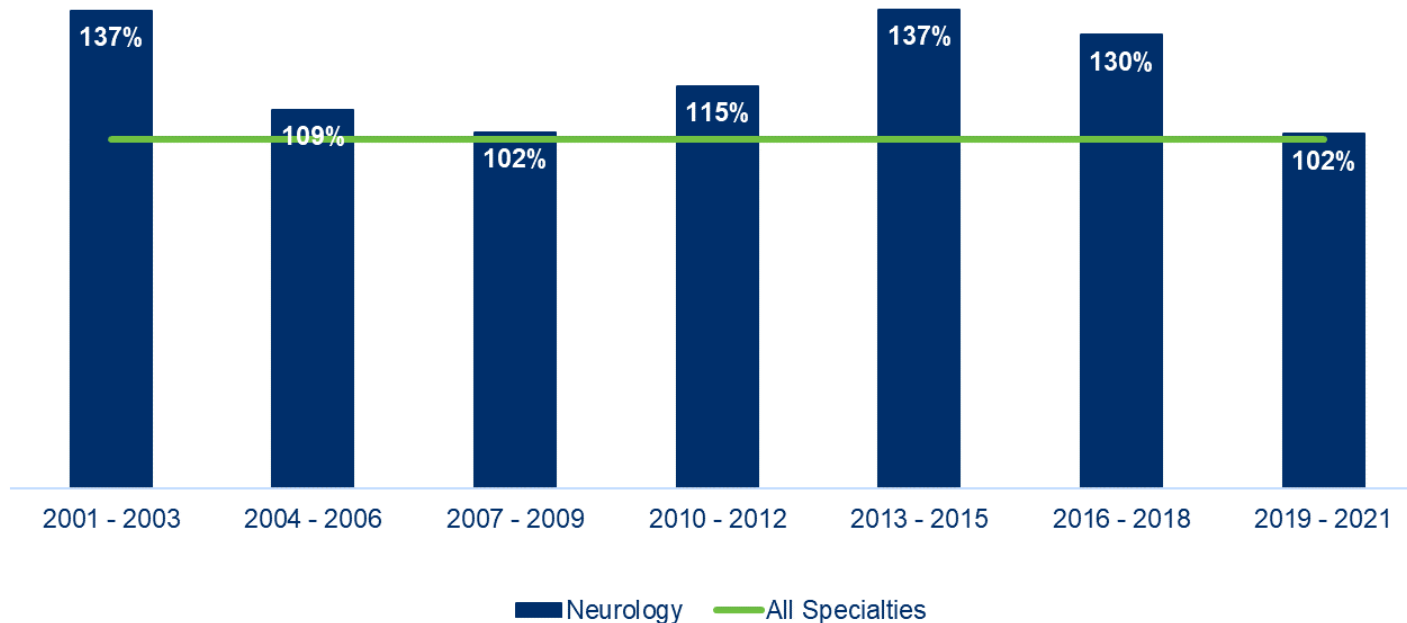
<b>Severity Tier</b>	<b>High</b>	Hematology/Oncology, Pathology, Pediatrics	Anesthesiology, Neurology	Emergency Medicine, Neurosurgery, OB/GYN
	<b>Medium</b>	Family Medicine, Nephrology, Physiatry, Urgent Care	Cardiology, ENT, Gastroenterology, Internal Medicine	Cardiovascular Surgery, General Surgery, Orthopedic Surgery, Radiology, Urology
	<b>Low</b>	Allergy, Dermatology, Occupational Medicine, Psychiatry, Rheumatology	Ophthalmology, Plastic Surgery, Pulmonology	Hospitalists
		<b>Low</b>	<b>Medium</b>	<b>High</b>
		<b>Frequency Tier</b>		

# Specialty trends – Neurology

INTRODUCTION | KEY POINTS | GENERAL DATA ANALYSIS | CONTRIBUTING FACTORS | FOCUSED DATA ANALYSIS | CASE EXAMPLES | RISK MITIGATION

Neurology has a higher financial severity per case and an average claim frequency compared to all specialties.

Average Severity - Neurology Relative to All Specialties



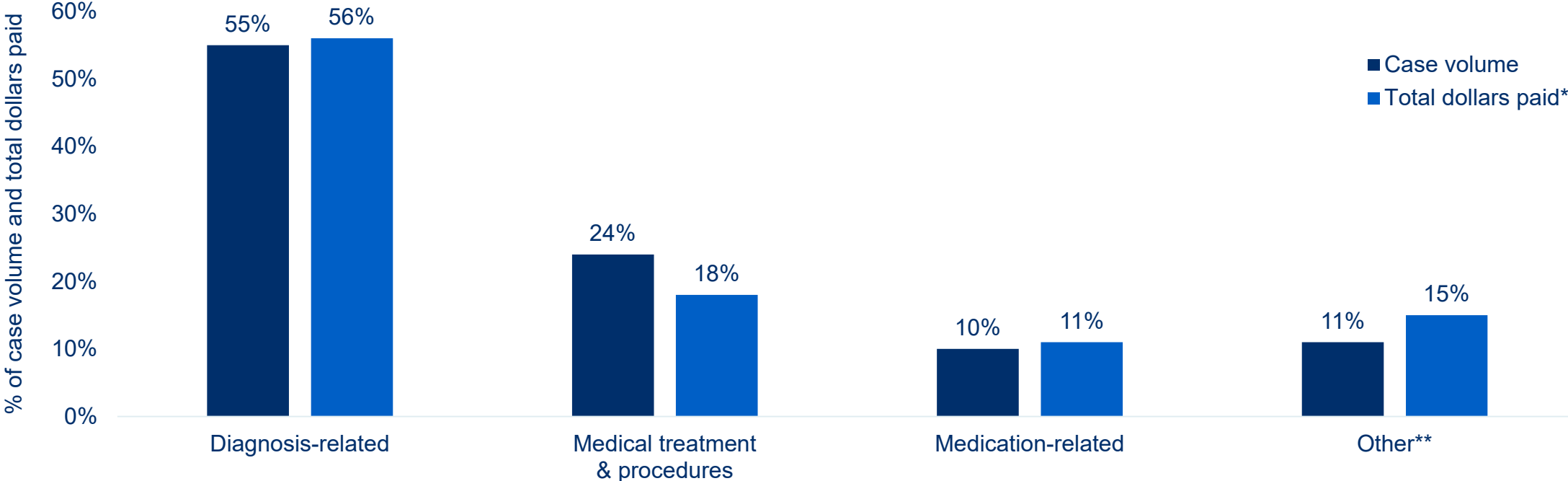
# Key Points - Clinically Coded Data

INTRODUCTION | **KEY POINTS** | GENERAL DATA ANALYSIS | CONTRIBUTING FACTORS | FOCUSED DATA ANALYSIS | CASE EXAMPLES | RISK MITIGATION

- **Diagnosis-related allegations** account for over half (55%) of Neurology case volume, and 56% of total dollars paid\*. These most commonly reflect missed/delayed diagnoses of cerebrovascular disease, nervous system disorders and both benign and malignant neoplasms. These cases **commonly reflect breaks all along the diagnostic process of care continuum, but most often during the initial diagnostic process phase** of patient assessments, establishment of differential diagnoses and ordering of diagnostic testing.
- **Medical treatment allegations, accounting for one quarter of Neurology case volume, are reflective most often of issues arising during management of a course of treatment.** Procedural performance cases can be the result of poor procedural technique, and impacted by delayed recognition of complications, while management cases most often reflect issues with selection of the most appropriate course of treatment for the patient, and appreciating and reconciling symptoms and test results.
- **Medication-related cases most commonly involve management of anticonvulsant medication regimens.** Problems with selection of the most appropriate medication regimen, monitoring/assessing the patient while on that regimen, and sub-optimal communication among providers about medication regimens and evolving signs/symptoms are the most common contributing factors to these cases.
- **Contributing factors, which are multi-layered issues or failures in the process of care that appear to have contributed to the patient's outcome, and/or to the initiation of the case, provide valuable insight into risk mitigation opportunities.** Clinical judgment factors related to diagnostic decision-making, and inadequate patient care team communication, are key drivers of both clinical and financial Neurology case severity.

# Major Allegations & Financial Severity

Each case reflects one major allegation category. Categories are designed to enable the grouping and analysis of similar cases and to drive focused risk mitigation efforts. The coding taxonomy includes detailed allegation sub-categories; insight into these is noted later in this report.



MedPro Group + MLMIC cases opened 2012-2021, Neurology as responsible service (N=212); \*Total dollars paid = expense + indemnity; \*\*Other includes allegations for which no significant case volume exists

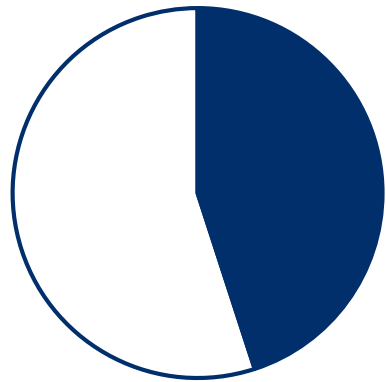
# Clinical Severity\*

Clinical Severity Categories	Sub-categories	% of case volume	<p><b>Typically, the higher the clinical severity, the higher the indemnity payments are, and the more frequently payment occurs.</b></p>
<b>LOW</b>	Emotional Injury Only	<b>10%</b>	
	Temporary Insignificant Injury		
<b>MEDIUM</b>	Temporary Minor Injury	<b>20%</b>	
	Temporary Major Injury		
	Permanent Minor Injury		
<b>HIGH</b>	Significant Permanent Injury	<b>70%</b>	
	Major Permanent Injury		
	Grave Injury		
	Death		

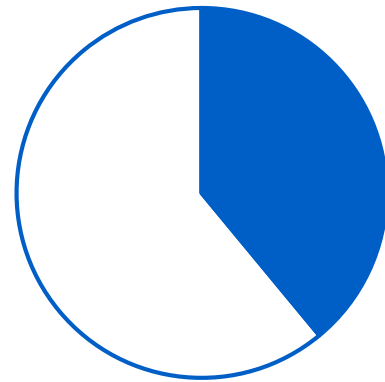
MedPro Group + MLMIC cases opened 2012-2021, Neurology as responsible service (N=212); \*Severity codes reflect National Association of Insurance Commissioners (NAIC) injury severity scale

# Claimant Type & Location

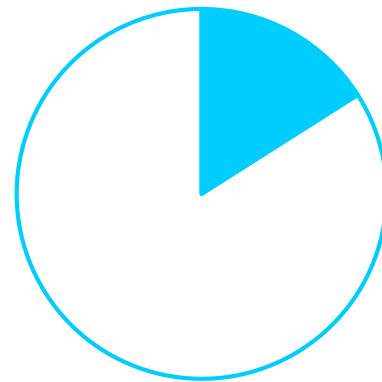
INTRODUCTION | KEY POINTS | **GENERAL DATA ANALYSIS** | CONTRIBUTING FACTORS | FOCUSED DATA ANALYSIS | CASE EXAMPLES | RISK MITIGATION



**Ambulatory**  
**45%**



**Inpatient**  
**39%**



**Emergency**  
**16%**

Top Locations	% of case volume
Office/clinic	41%
Patient room/ICU	31%
Emergency Department	15%



# Contributing Factors

“Contributing factors reflect both provider and patient issues. They denote breakdowns in technical skill, clinical judgment, communication, behavior, systems, environment, equipment/tools, and teamwork. The majority are relevant across clinical specialties, settings, and disciplines; thus, they identify opportunities for broad remediation.”

## Despite best intentions, processes designed for safe patient outcomes can, and do, fail.

**Contributing factors** are multi-layered issues or failures in the process of care that appear to have contributed to the patient's outcome, and/or to the initiation of the case, or had a significant impact on case resolution.

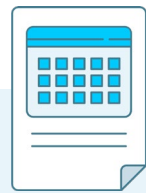
**Multiple factors are identified in each case** because generally, there is not just one issue that leads to these cases, but rather a combination of issues.



Administrative



Behavior-related



Clinical environment



Clinical judgment



Clinical systems



Communication



Documentation



Supervision



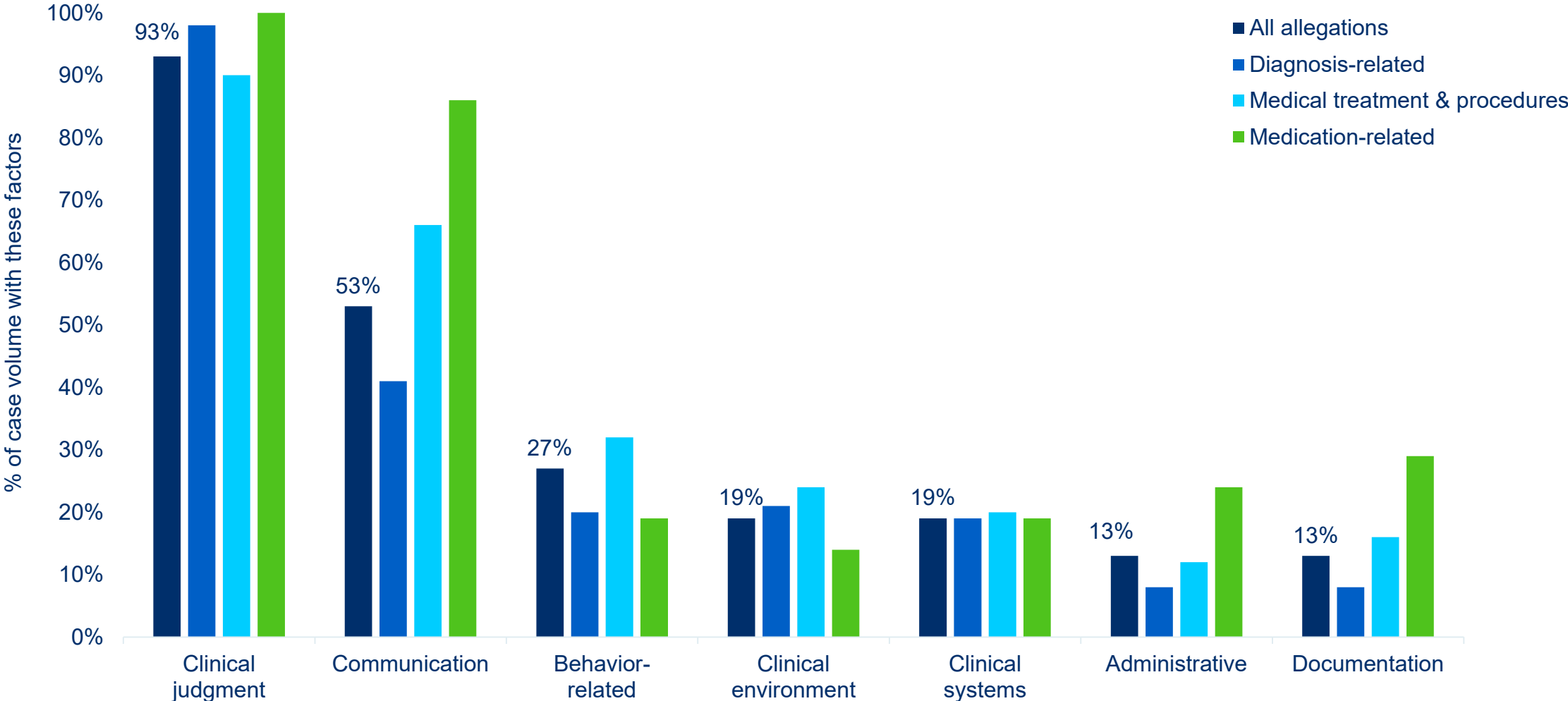
Technical skill

# Contributing Factor Category Definitions

INTRODUCTION | KEY POINTS | GENERAL DATA ANALYSIS | CONTRIBUTING FACTORS | FOCUSED DATA ANALYSIS | CASE EXAMPLES | RISK MITIGATION

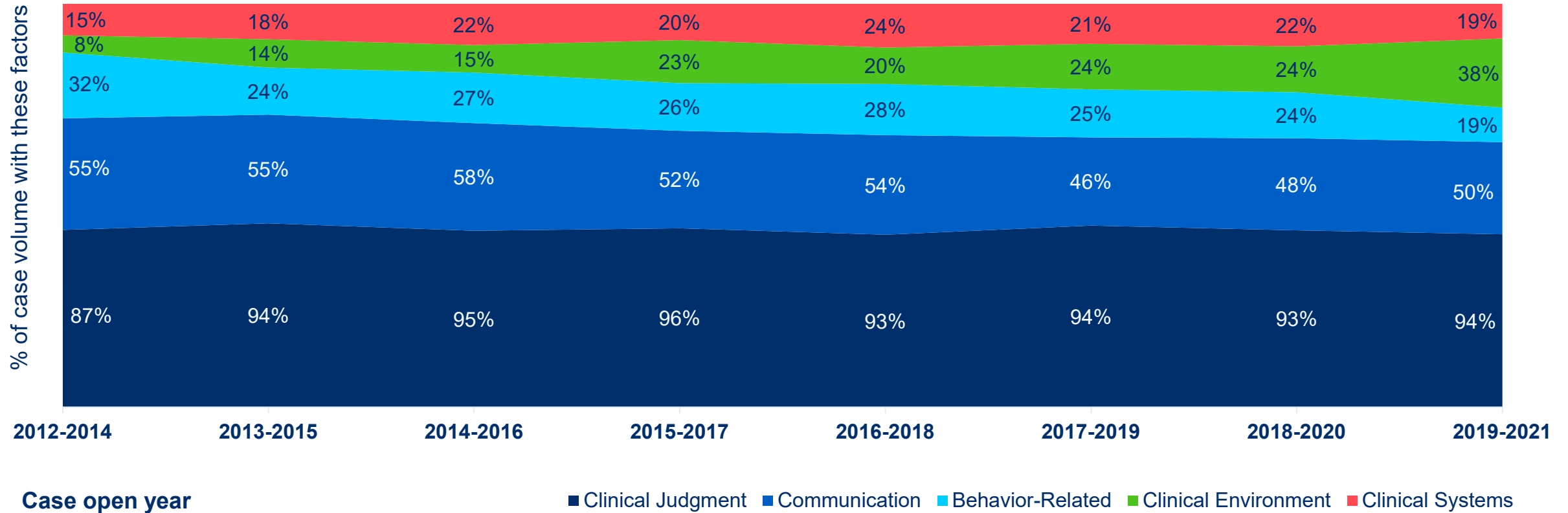
Administrative	Factors related to medical records (other than documentation), reporting, staff, ethics, policy/protocols, regulatory
Behavior-related	Factors related to patient nonadherence to treatment or behavior that offsets care; also provider behavior including breach of confidentiality or sexual misconduct
Clinical environment	Factors related to workflow, physical conditions and “off-hours” conditions (weekends/holidays/nights)
Clinical judgment	Factors related to patient assessment, selection and management of therapy, patient monitoring, failure/delay in obtaining a consult, failure to ensure patient safety (falls, burns, etc), choice of practice setting, failure to question/follow an order, practice beyond scope
Clinical systems	Factors related to coordination of care, failure/delay in ordering test, reporting findings, follow-up systems, patient identification, specimen handling, nosocomial infections
Communication	Factors related to communication among providers, between patient/family and providers, via electronic communication (texting, email, etc), and telehealth/tele-radiology
Documentation	Factors related to mechanics, insufficiency, content
Supervision	Factors related to supervision of nursing, house staff, advanced practice clinicians
Technical skill	Factors related to improper use of equipment, medication errors, retained foreign bodies, technical performance of procedures

# Most Common Contributing Factor Categories by Allegation



MedPro Group + MLMIC cases opened 2012-2021, Neurology as responsible service (N=212); More than one factor per case, therefore totals >100%

# Distribution of Top Five Factor Categories Over Time



While the distribution of these top (most common) factors across rolling three-year timeframes is relatively consistent, take note of even slight increases over time as indicators of emerging risk issues.

# Focus on Most Common Drivers of Clinical and Financial Severity

INTRODUCTION | KEY POINTS | GENERAL DATA ANALYSIS | **CONTRIBUTING FACTORS** | FOCUSED DATA ANALYSIS | CASE EXAMPLES | RISK MITIGATION

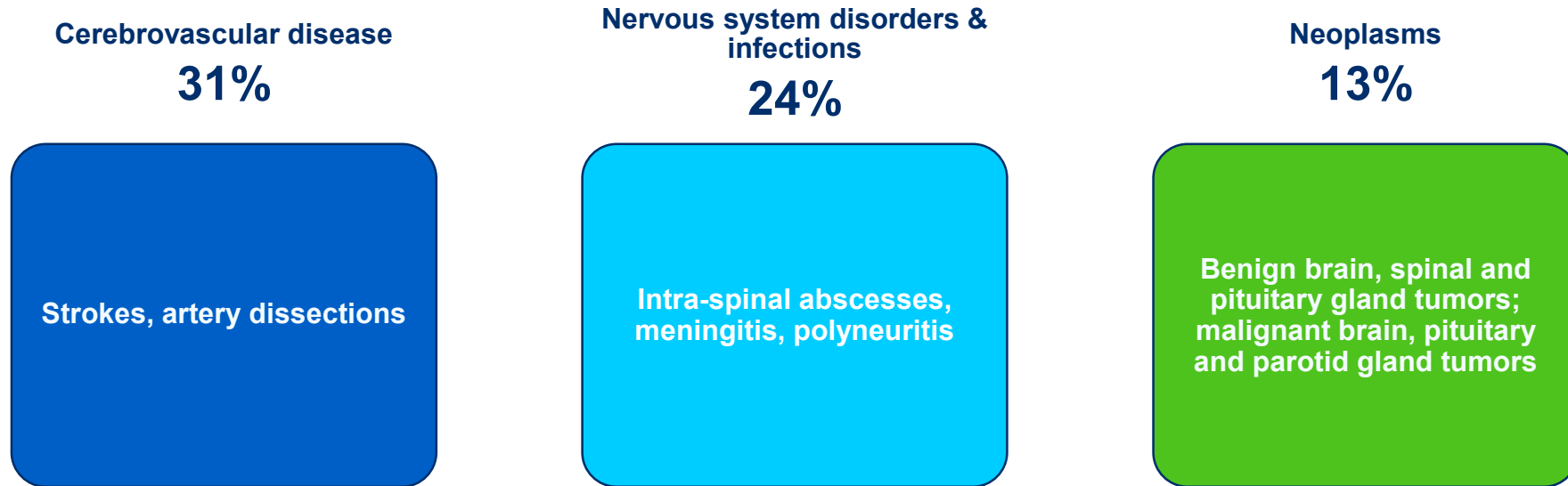
<b>Factors associated with high clinical severity outcomes</b>	(CJ) failure/delay in ordering diagnostic test (38%)	<b>% of high severity case volume</b>
	(CJ) failure to appreciate/reconcile signs/symptoms/test results (36%)	
	(CJ) narrow diagnostic focus – failure to establish differential diagnosis (31%)	
	(CO) suboptimal communication among providers about patient condition (26%)	
	(CJ) failure/delay obtaining consult/referral (26%)	
<b>Factors associated with the costliest indemnity payments</b>	(CO) suboptimal communication among providers about patient condition (56%)	<b>% more expensive than the average indemnity payment*</b>
	(CJ) failure to appreciate/reconcile signs/symptoms/test results (29%)	

Clinical judgment factors related to diagnostic decision-making, and inadequate patient care team communication, are key drivers of both clinical and financial Neurology case severity.

# Focus on Diagnosis-Related Allegations

INTRODUCTION | KEY POINTS | GENERAL DATA ANALYSIS | CONTRIBUTING FACTORS | **FOCUSED DATA ANALYSIS** | CASE EXAMPLES | RISK MITIGATION

Diagnosis-related allegations encompass wrong diagnoses, failures/delays, and misdiagnoses. See below for the top diagnoses\* noted in these cases.



# Focus on Diagnosis-Related Allegations

Diagnosis-related allegations encompass wrong diagnoses, failures/delays, and misdiagnoses. Note the key opportunities to reduce diagnostic errors along the diagnostic process of care\* below.

## Phase 1

<b>Initial diagnostic assessment</b>  <b>89%</b> of cases	Patient notes problem & seeks care
	History & physical
	Patient assessed, symptoms evaluated
	Differential diagnosis established
	Diagnostic testing ordered

## Phase 2

<b>Testing and results processing</b>  <b>33%</b> of cases	Performance of diagnostic tests
	Interpretation of diagnostic test results
	Test results transmitted to/received by ordering provider

## Phase 3

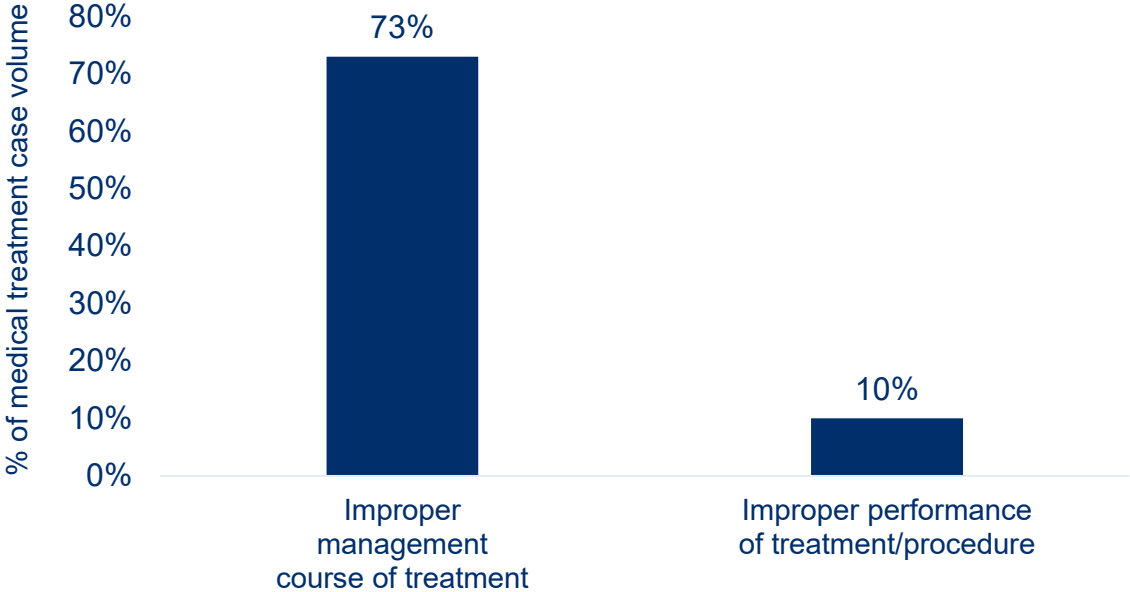
<b>Follow-up and coordination</b>  <b>53%</b> of cases	Physician follows-up with patient
	Referrals/Consults
	Patient information communicated among care team
	Patient compliance with follow-up plan

MedPro Group + MLMIC cases opened 2012-2021, Neurology as responsible service (N=212); \*each step reflects a combination of contributing factors; diagnostic process of care algorithm courtesy of Candello, a division of CRICO Strategies

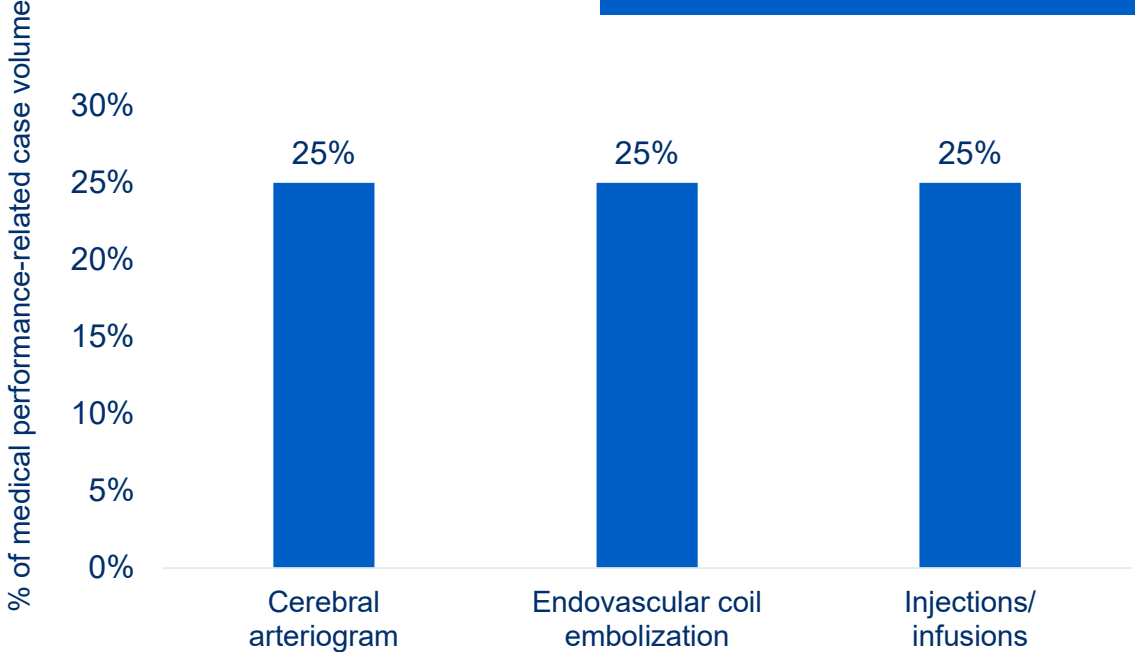


# Focus on Medical Treatment Allegations

Top allegation details

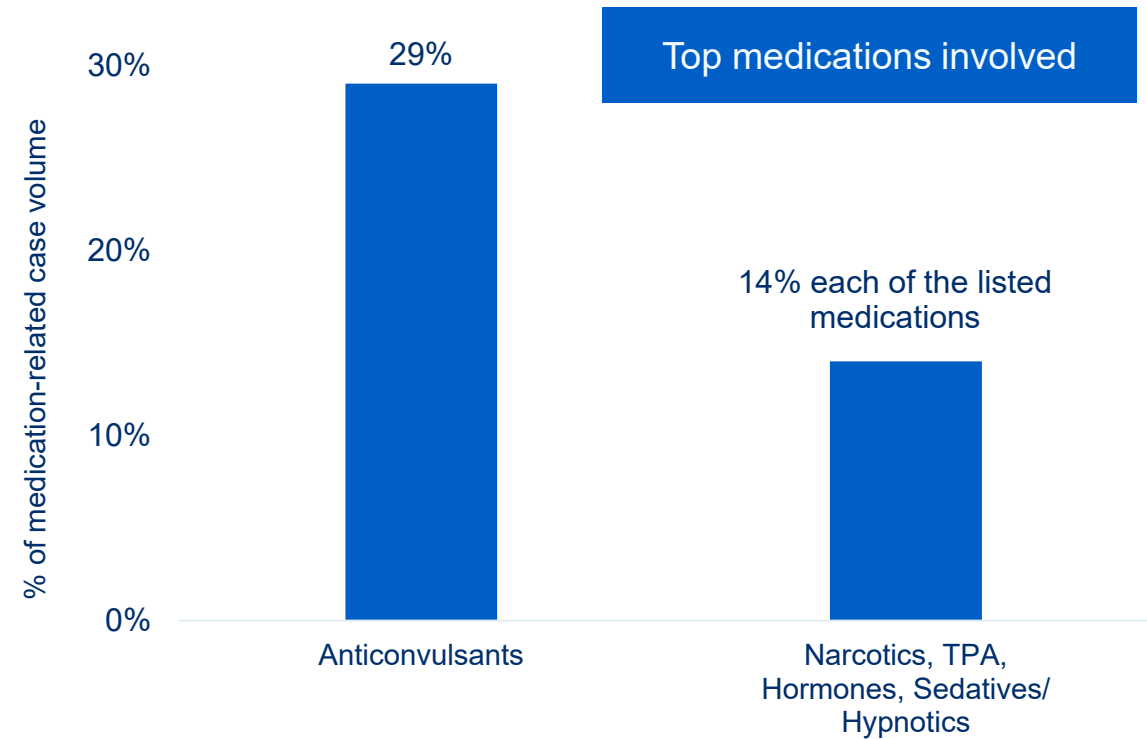
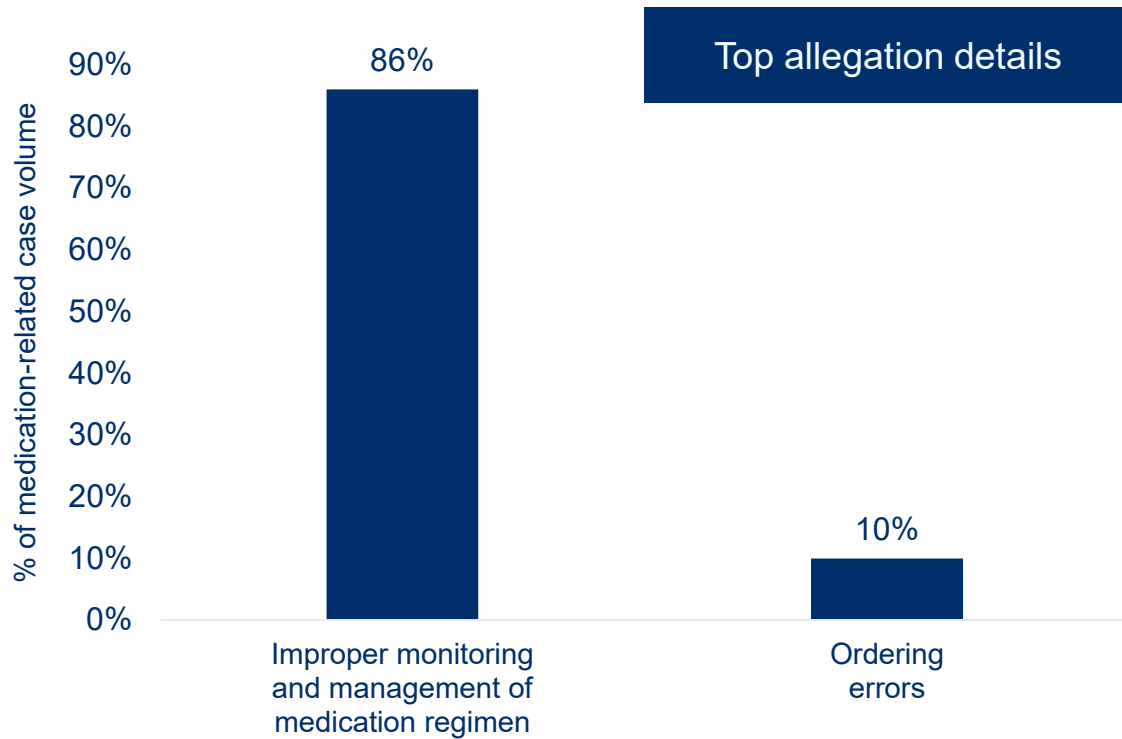


Top procedures involved



Procedural performance cases can be the result of poor procedural technique, and impacted by delayed recognition of complications, while management cases most often reflect issues with selection of the most appropriate course of treatment for the patient, and appreciating and reconciling symptoms and test results.

# Focus on Medication-Related Allegations



Medication-related cases most commonly involve management of anticonvulsant medication regimens. Problems with selection of the most appropriate medication regimen, monitoring/assessing the patient while on that regimen, and sub-optimal communication among providers about medication regimens and evolving signs/symptoms are the most common contributing factors to these cases.



**The following stories are reflective of the allegations and contributing risk factors which drive cases brought against Neurologists.**

**We're relaying these true stories as lessons** to build understanding of the challenges that you face in day-to-day practice. Learning from these events, we trust that you will take the necessary steps to either reinforce or implement best practices, as outlined in the section focused on risk mitigation strategies.

# Case Examples

INTRODUCTION | KEY POINTS | GENERAL DATA ANALYSIS | CONTRIBUTING FACTORS | FOCUSED DATA ANALYSIS | **CASE EXAMPLES** | RISK MITIGATION

SETTLED

**\$615,000**

CONTRIBUTING FACTORS

## Clinical judgment

Failure/delay in ordering diagnostic test

## Clinical systems

Failure to report findings to patient/initiate follow-up care

## Communication

Failure to read medical record

FAILURE TO DIAGNOSE THYROID DISORDER RESULTING IN QUADRIPLÉGIA AND DEATH

A male patient in his early 30's was in a motor vehicle accident, and although the air bags deployed, he refused medical treatment at the scene of accident. Two weeks later, however, he presented with neck pain, and was evaluated by an Internal Medicine physician who diagnosed neck sprain/strain, chest contusion and lumbar sprain/strain. An order was placed for physical therapy and x-rays.

Spinal x-ray revealed no fractures, but bone spurring, thoracic scoliosis, and grade 1 retrolisthesis of L5 over S1 (single vertebra shifts backward or underneath an intervertebral disc) were noted. A **subsequent MRI revealed uptake in the left lobe of the thyroid gland**; the report indicated "thyroid ultrasound can be performed for more complete evaluation." The patient was referred to a **Neurologist (Neuro) who reviewed the MRI but did not mention the thyroid gland finding**. Neuro diagnosed a cervical root injury and disc displacements.

Three months later, the patient had an office visit with the Neuro's physician assistant (Neuro PA) for pain management, and discussed the option for epidural steroid injections. **There was no mention of MRI thyroid findings**. Pre-procedure chart review by an Anesthesiologist/Pain Medicine physician was conducted, but no mention was made of the thyroid findings. No epidural injections were done.

Four months later, the patient presented again to Neuro PA with pain; he denied weakness in extremities but reported experiencing periodic tingling sensations in arms and legs. Epidural injections were again discussed. One week later, the patient presented to the Emergency Department with ascending weakness of all four extremities; he was unable to move his extremities. Neuro ordered a stat MRI of C-spine; critical diagnostic lab results were noted. **During transport to MRI, the patient developed respiratory distress and was unable to be resuscitated. Death was due to thyrotoxic periodic paralysis** (uncommon, but noted in conjunction with high levels of thyroid hormones).

During the subsequent investigation, **Neuro stated that his habit was to tell the patient "Here is your MRI. There is a comment about an issue with your thyroid. You should go see your primary care provider about it."** He **also said he would dictate the statement for inclusion in his office visit charting, but did not this time**. Neuro PA and Anesthesiology/Pain Medicine physician did not review the MRI because the patient never decided to get the epidural injections.

# Case Examples

INTRODUCTION | KEY POINTS | GENERAL DATA ANALYSIS | CONTRIBUTING FACTORS | FOCUSED DATA ANALYSIS | CASE EXAMPLES | RISK MITIGATION

SETTLED

**\$1.3M**

## CONTRIBUTING FACTORS

### Clinical environment

Busyness (ED-1 on diversion)

### Clinical judgment

Inadequate assessment –  
history & physical (Neuro did  
not personally evaluate patient)

Failure to order medication  
(tPA; based on erroneous  
information)

### Clinical systems

Failure/delay in performing  
diagnostic testing (5 hour delay  
for a STAT MRI)

### Communication

Between providers about onset  
of patient's symptoms

IMPROPER MANAGEMENT OF TEENAGER WITH STROKE SYMPTOMS RESULTING IN PERMANENT HEMIPARESIS AND SEIZURE DISORDER

A male 17 year-old patient woke at 6:30am with complaints of “not feeling right”, and was pale and sweaty. His mother gave him a cold compress and he returned to bed. **Five hours later, at 11:30am, he awoke, and fell when attempting to walk due to left-sided weakness.** He could not get back up without assistance.

His family called 911; the responding EMS team was in route to the pediatric Emergency Department (ED-1) but were notified that ED-1 was on diversion, so the EMS team transported the patient to ED-2, where pediatric-specific ED care was unavailable.

Upon arrival at ED-2 at 1:30pm, a stroke alert was called, prompting a call to the on-call (but not onsite) adult-only neurologist (Neuro). **With the onset of symptoms reported by EMS team to the ED-2 staff, and then to Neuro, as occurring at 6:30am rather than 11:30am when the left-sided hemiparesis was first noted, Neuro felt patient was outside the treatment window for tPA** (tissue plasminogen activator for treatment of stroke symptoms). **Neuro did not come to the ED-2 to evaluate patient.**

After negative STAT head CT results were received at 2:05pm, Neuro recommended transfer to pediatric ED-1 for further evaluation and STAT brain MRI and MRA/MRV, however, MRA/MRV testing was not available at ED-1.

Patient arrived ED-1 at 5pm. **Although the stat MRI was ordered, it was not completed/interpreted until 10:04pm. Results revealed a massive stroke** and the patient was admitted to Neuro ICU for treatment. The next day, a decompressive craniotomy was performed to relieve pressure.

Patient was left with permanent left-sided hemiparesis and seizure disorder.

# Risk Mitigation Strategies

INTRODUCTION | KEY POINTS | GENERAL DATA ANALYSIS | CONTRIBUTING FACTORS | FOCUSED DATA ANALYSIS | CASE EXAMPLES | RISK MITIGATION

- **Clinical judgment**
  - Be aware that inadequate patient assessment might be a result of cognitive biases, inadequate medical and family history taking, or inadequate sharing of information among providers. Recognize that delays in obtaining consults/referrals are one of the top driving factors behind diagnostic claims.
- **Communication**
  - Ensure efficiencies in the sharing and discussing of test results and consultative reports among other providers. Encourage verbal sharing of subtle changes which are not individually noteworthy when multiple providers are involved.
- **Clinical environment**
  - Recognize that weekend & night shifts can impact the timeliness of assessments, response to consult requests, and return of test results. Focus on eliminating any variation in processes during 'off' hours.
- **Clinical systems**
  - Focus on 'closing the loop' with regards to receiving, reporting and acting on test results, including incidental findings. Insist upon care coordination – determine which next steps belong to which provider. Review office processes associated with test tracking, consults/referrals, appointment setting, and managing patient nonadherence.
- **Administrative**
  - Ensure that policies/procedures are well-constructed and that staff awareness & training is a priority.
- **Documentation**
  - Discrepancies or gaps in the details/timing of care and clinical decision-making make it much more difficult to build a supportive framework for defense against potential malpractice cases.
- **Engage patients as active participants in their care.**
  - Consider the patient's health literacy and other comprehension barriers. Recognize that patient satisfaction with treatment outcomes can be influenced by a thorough informed consent and education process.

# MedPro Group & MLMIC Data

**MedPro and MLMIC are partnered with Candello**, a national medical malpractice data collaborative and division of CRICO, the medical malpractice insurer for the Harvard-affiliated medical institutions.

**Derived from the essence of the word candela**, a unit of luminous intensity that emits a clear direction, Candello's best-in-class taxonomy, data, and tools provide unique insights into the clinical and financial risks that lead to harm and loss.

**Using Candello's sophisticated coding taxonomy to code claims data**, MedPro and MLMIC are better able to highlight the critical intersection between quality and patient safety and provide insights into minimizing losses and improving outcomes.

**Leveraging our extensive claims data**, we help our insureds stay aware of risk trends by specialty and across a variety of practice settings. Data analyses examine allegations and contributing factors, including human factors and healthcare system flaws that result in patient harm. Insight gained from claims data analyses also allows us to develop targeted programs and tools to help our insureds minimize risk.



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