Neurology

Claims Data Snapshot

2025

MedPro Group

MLMIC

MLMIC Insurance Company

CELEBRATING 50 FIFTY YEARS

Introduction

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 2014-2023 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.

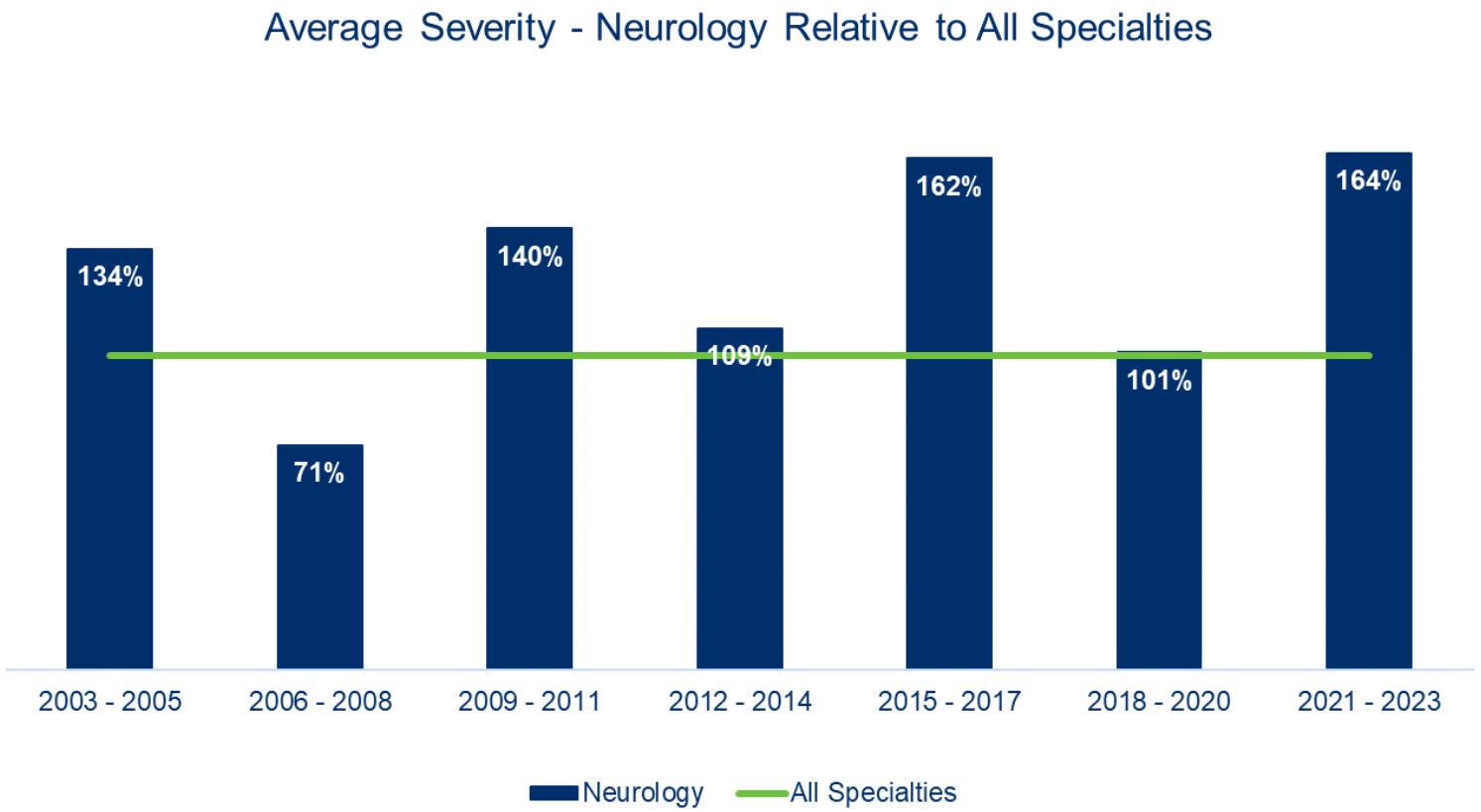
Severity Tier	Low Frequency	Medium Frequency	High Frequency
High	Hematology/Oncology, Pathology, Pediatrics	Anesthesiology, Neurology	Emergency Medicine, Neurosurgery, OB/GYN
Medium	Family Medicine, Nephrology, Physiatry, Urgent Care	Cardiology, ENT, Gastroenterology, Internal Medicine	Cardiovascular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

Frequency Tier

Source: MedPro Group Physician & Surgeon Claim Experience & Analysis

Specialty trends – Neurology

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



Frequency Tier
High
Medium
Low

Source: MedPro Group Physician & Surgeon Claim Experience & Analysis

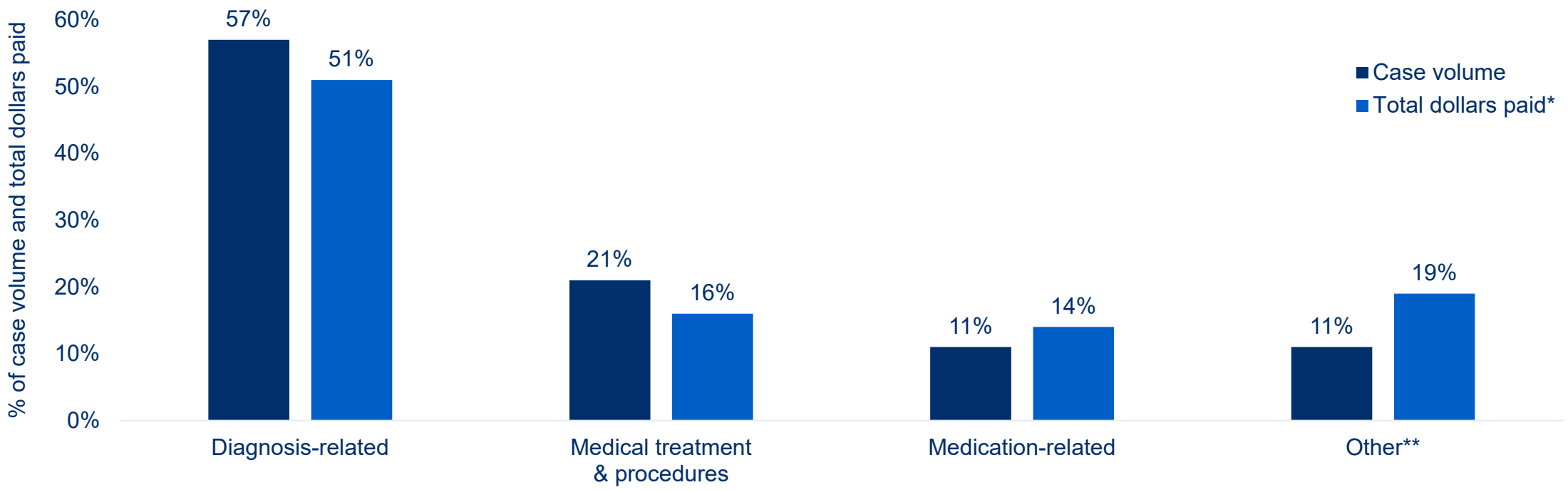
Key Points - Clinically Coded Data

- Diagnosis-related allegations account for over half (57%) of Neurology case volume, and 51% 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 21% 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 clinical Neurology case severity.

MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244); *Total dollars paid = expense + indemnity

Major Allegations & Financial Severity

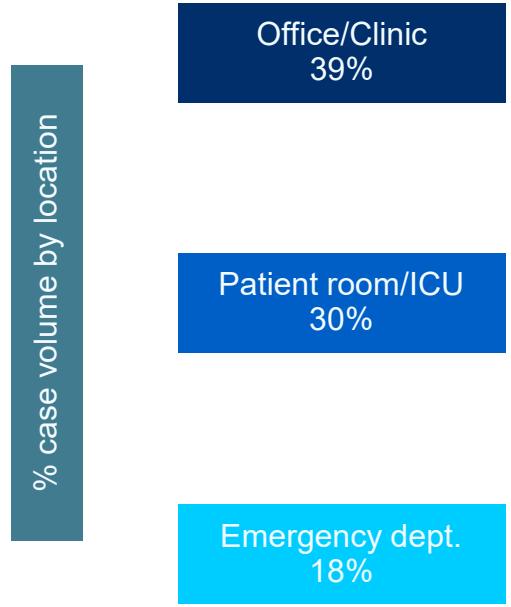
Each case reflects one major allegation category. Categories are designed to enable the grouping and analysis of similar cases and to drive focused risk mitigation efforts. The coding taxonomy includes detailed allegation sub-categories; insight into these is noted later in this report.



MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244); *Total dollars paid = expense + indemnity; **Other includes allegations for which no significant case volume exists

Clinical Severity* & Most Common Locations

Clinical severity* categories	Sub-categories	% of case volume	Definitions
LOW	Emotional Injury Only	**6%**	Mental distress or suffering that is generally temporary; includes HIPAA violations, discrimination, involuntary stay
	Temporary Insignificant Injury		Lacerations, contusions, minor scars, rash; no delay in recovery
MEDIUM	Temporary Minor Injury	**23%**	Infection, fracture set improperly or a fall in the facility, where recovery is complete but delayed
	Temporary Major Injury		Burns, drug side effect; recovery delayed
	Permanent Minor Injury		Loss of fingers or loss or damage to organs; includes non-disabling injuries
HIGH	Significant Permanent Injury	**71%**	Deafness, loss of limb, loss of eye or loss of one kidney or lung
	Major Permanent Injury		Paraplegia, blindness, loss of two limbs or brain damage
	Grave Injury		Quadriplegia, severe brain damage, life-long care or fatal prognosis
	Death		Death
		18%	**% of cases resulting in patient death**



MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244); *Severity codes reflect National Association of Insurance Commissioners (NAIC) injury severity scale

Contributing Factors

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.

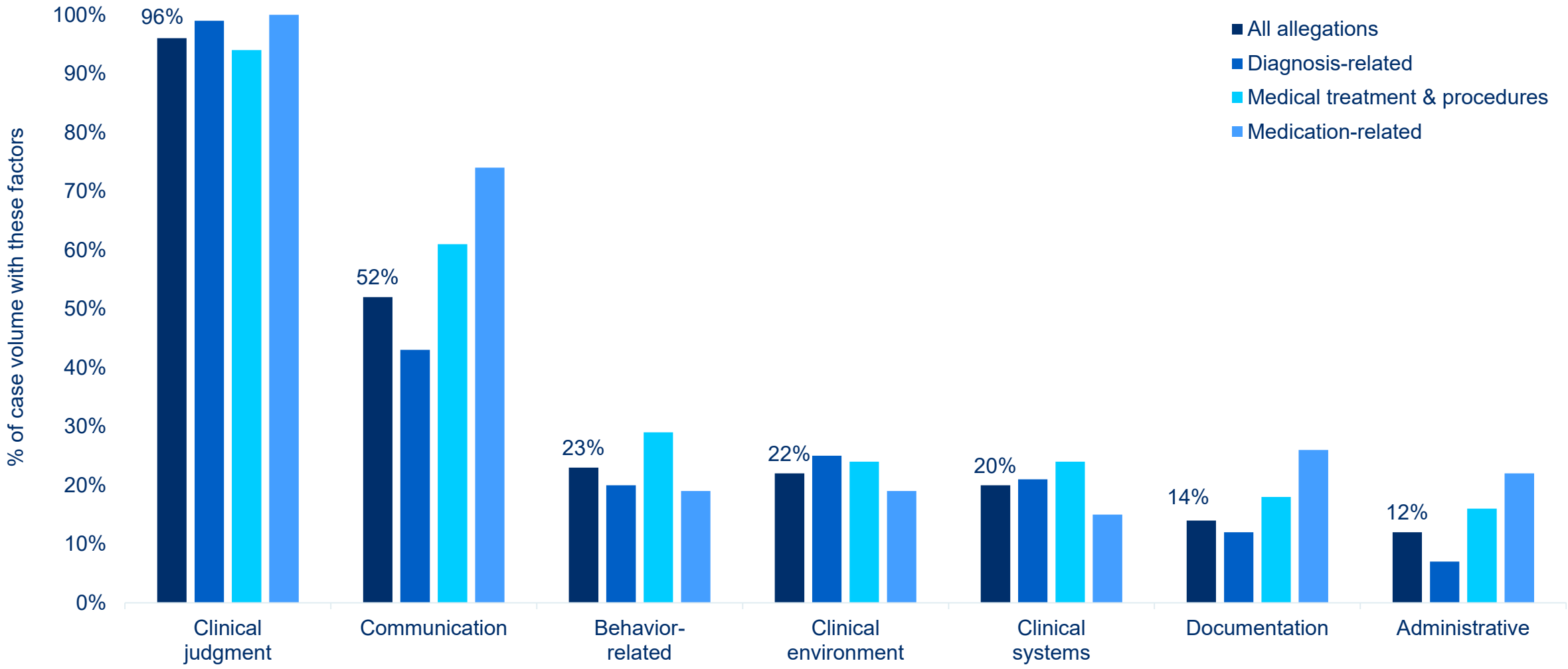
Multiple factors are identified in each case because generally, there is not just one issue that leads to these cases, but rather a combination of issues.

Administrative | Behavior-related | Clinical environment | Clinical judgment | Clinical systems | Communication | Documentation | Supervision | Technical skill

Contributing Factor Category Definitions

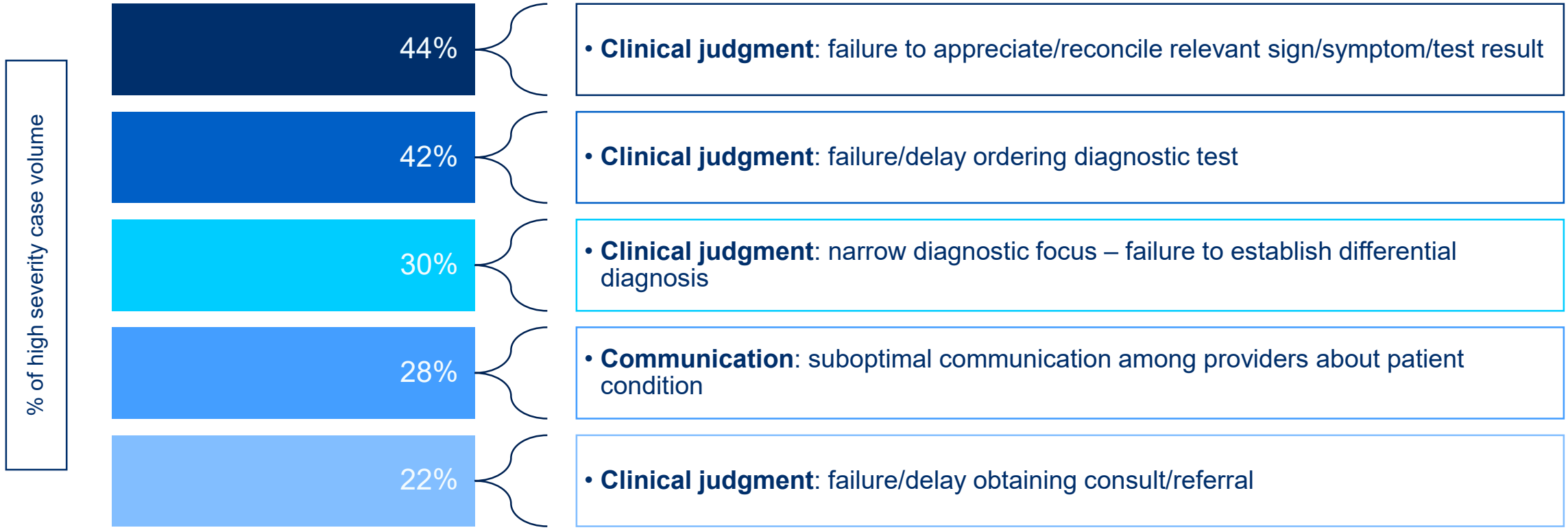
Administrative	Factors related to reporting of adverse events, adequacy of staffing, staff education/training, ethics, failure to follow and/or need for policy/protocols
Behavior-related	Factors related to patient nonadherence to treatment or behavior that offsets care; also, provider behavior including 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, diagnostic decision-making, 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=244); More than one factor per case, therefore totals >100%

Focus on Most Common Drivers of Clinical Severity



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

MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244); More than one factor per case, therefore totals >100%

Focus on Diagnosis-Related Allegations

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

Cerebrovascular disease

34%

Strokes, artery dissections

Nervous system disorders & infections

23%

Intra-spinal abscesses, meningitis, polyneuritis

MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244); *as a percentage of all diagnosis-related allegations

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

Initial diagnostic assessment

89%
of cases

- Patient notes problem & seeks care
- History & physical
- Patient assessed, symptoms evaluated
- Differential diagnosis established
- Diagnostic testing ordered

Phase 2

Testing and results processing

34%
of cases

- Performance of diagnostic tests
- Interpretation of diagnostic test results
- Test results transmitted to/received by ordering provider

Phase 3

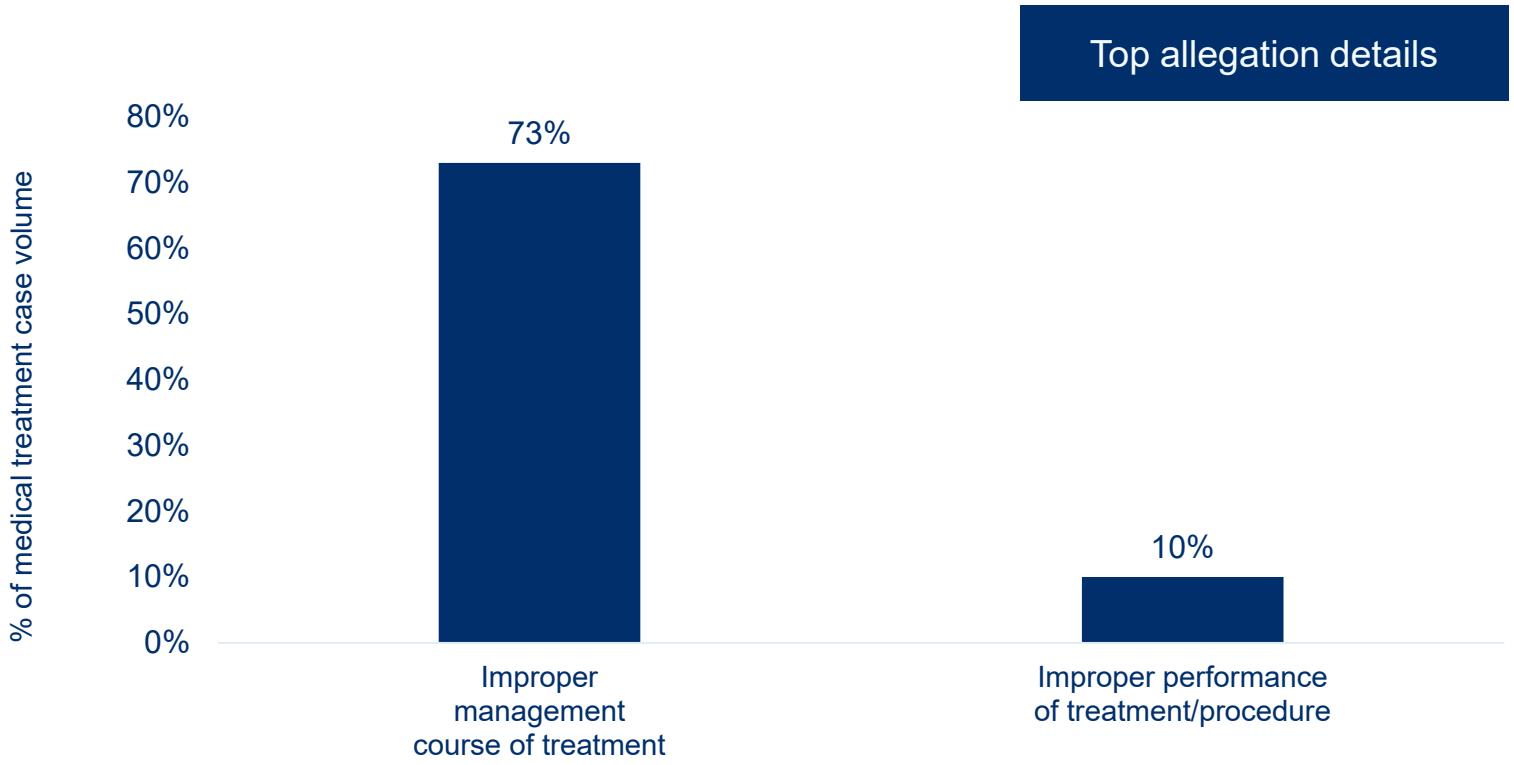
Follow-up and coordination

47%
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 2014-2023, Neurology as responsible service (N=244); *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



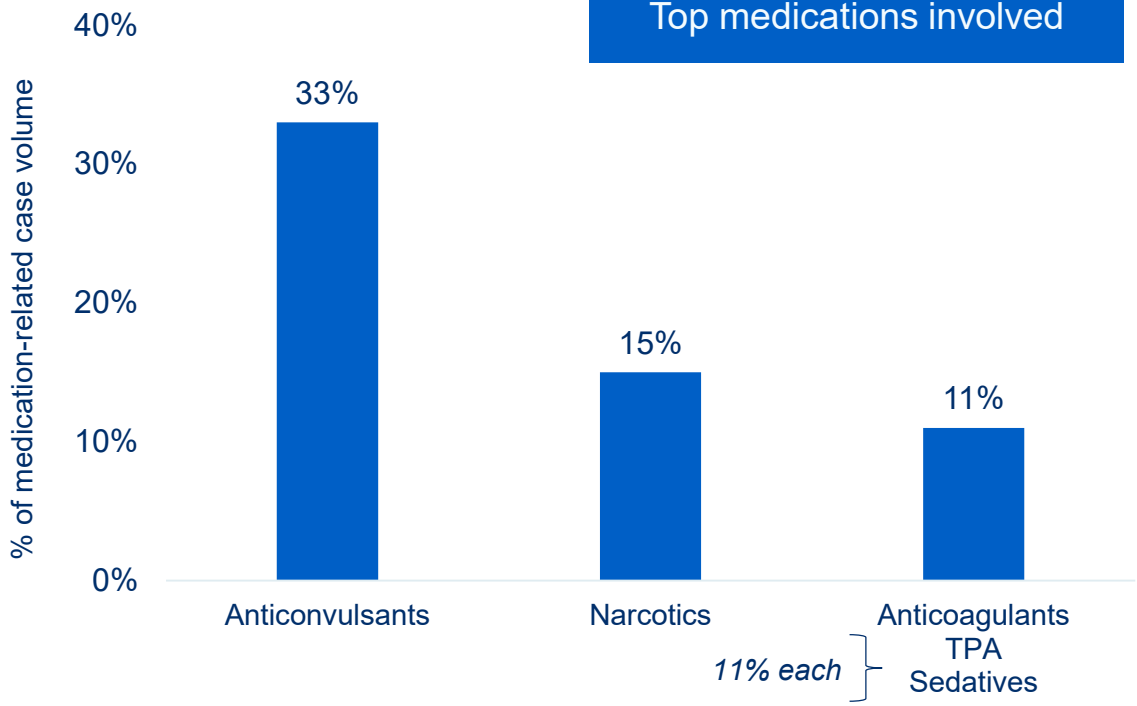
Procedural performance cases can be the result of poor procedural technique, and impacted by delayed recognition of complications, while management cases most often reflect issues with selection of the most appropriate course of treatment for the patient, and appreciating and reconciling symptoms and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

MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244)

Focus on Medication-Related Allegations

Top allegation details

Top medications involved



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.

MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244)

Focus on Medication-Related Allegations

Medication-related allegations primarily encompass management of medication regimens and ordering/dispensing/administration errors. Note the key opportunities to reduce medication errors along the process of care* below.

Phase 1

Ordering
14%
of cases

Includes failures to order, and wrong medication/dose/route orders

Phase 2

Dispensing
0%
of cases

Includes pharmacy dispensing of wrong medication/dose/method (route)

Phase 3

Administration
2%
of cases

Includes failures to medicate, administration wrong medication/dose/route

Includes technique involved with medication administration

Phase 4

Monitoring & management
62%
of cases

Includes management of regimen/patient response/reaction

Includes monitoring immediately after medication administration

Phase 5

Other
22%
of cases

Includes other process of care issues not captured in the previous steps, including patients with unknown allergies and cases in which medication shortages, contaminations or recalls impact the delivery of care

Process of care breakdowns within this set of cases are primarily noted within the monitoring & management phase.

MedPro Group + MLMIC cases opened 2014-2023, Neurology as responsible service (N=244); *each step reflects a combination of allegations; medication process of care algorithm courtesy of Candello, a division of CRICO Strategies

Risk Mitigation Strategies

- **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 and 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 and 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.