Cases Involving Nurse Practitioners and Physician Assistants

Data Insight

2026

MedPro Group
a Berkshire Hathaway company

MLMIC
MLMIC Insurance Company
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Introduction

A partnership and a coding taxonomy

The MedPro Group and MLMIC partnerships with Candello, a division of CRICO, allow us to perform detailed claims data analyses, develop topic- and specialty-specific claims-based resources, and offer a variety of benchmarking capabilities across specialties, topics, and practice settings.

Our use of Candello's proprietary clinical coding taxonomy enables us to classify and describe patient safety events, including the underlying risks which lead to clinical harm and financial loss.

Our clinical taxonomy specialists capture numerous elements of both open and closed cases and develop a clinical narrative. Their clinical expertise combined with Candello's robust taxonomy ensure coding depth, accuracy, and consistency across the thousands of cases coded each year.

Some of those elements include:

- Case types
- Responsible services
- Contributing risk factors
- Clinical description
- Clinical injury severity
- Claimant type
- Location of event
- Diagnoses
- Surgical and medical procedures

Candello
Safety in Numbers

Key Points

Analytics	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 multiple defendant types such as hospital, physician/surgeon, or non-physician/surgeon providers. Cases that involve attorney representations at depositions, State Board actions, and general liability cases are not included.
Nurse practitioners (NP) and physician assistants (PA)	This analysis references cases in which a NP and/or a PA was identified as primarily responsible for the patient's outcome. A comparison to physician/surgeon-responsible cases is included for several of the data points. More than one primary responsible provider type is possible per case (i.e., a PA in the emergency department and an emergency medicine physician, both identified as responsible in failing to diagnose a stroke).
Diagnostic case types account for one third of NP and PA cases.	Across the diagnostic cases, initial diagnostic assessment and decision-making, followed by care coordination between providers, specialties, and patients, are identified most often as the 'breaks' during the diagnostic process of care.
Specialties	NPs are most often identified in Family/Internal medicine cases, while the distribution of PA cases is more wide-spread, albeit with a higher concentration in Orthopedic cases.
A variety of contributing factors are identified.	More than three-fourths of all cases reflect clinical judgment issues, involving patient assessments, and diagnostic and treatment decision-making. Specific factors observed in clinically severe cases include diagnostic decision-making, suboptimal communication, insufficient documentation, and events arising during night/weekend/holiday shifts.

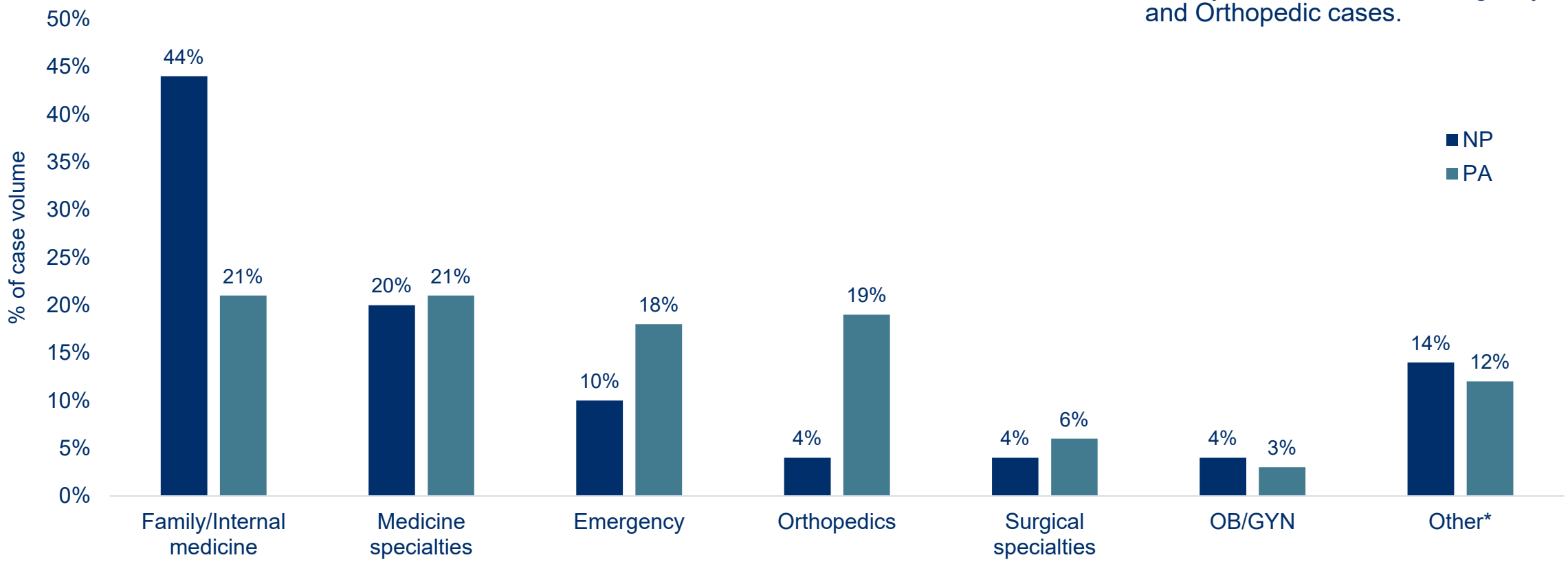
NP and PA Cases by Primary Responsible Service

The analysis was conducted on cases that identified NPs and PAs as the responsible provider type within the healthcare team. Other provider types include attending physicians, nurses and residents.

Responsible services indicate the clinical service of the provider(s) most directly responsible for the patient's care at the time of the event.

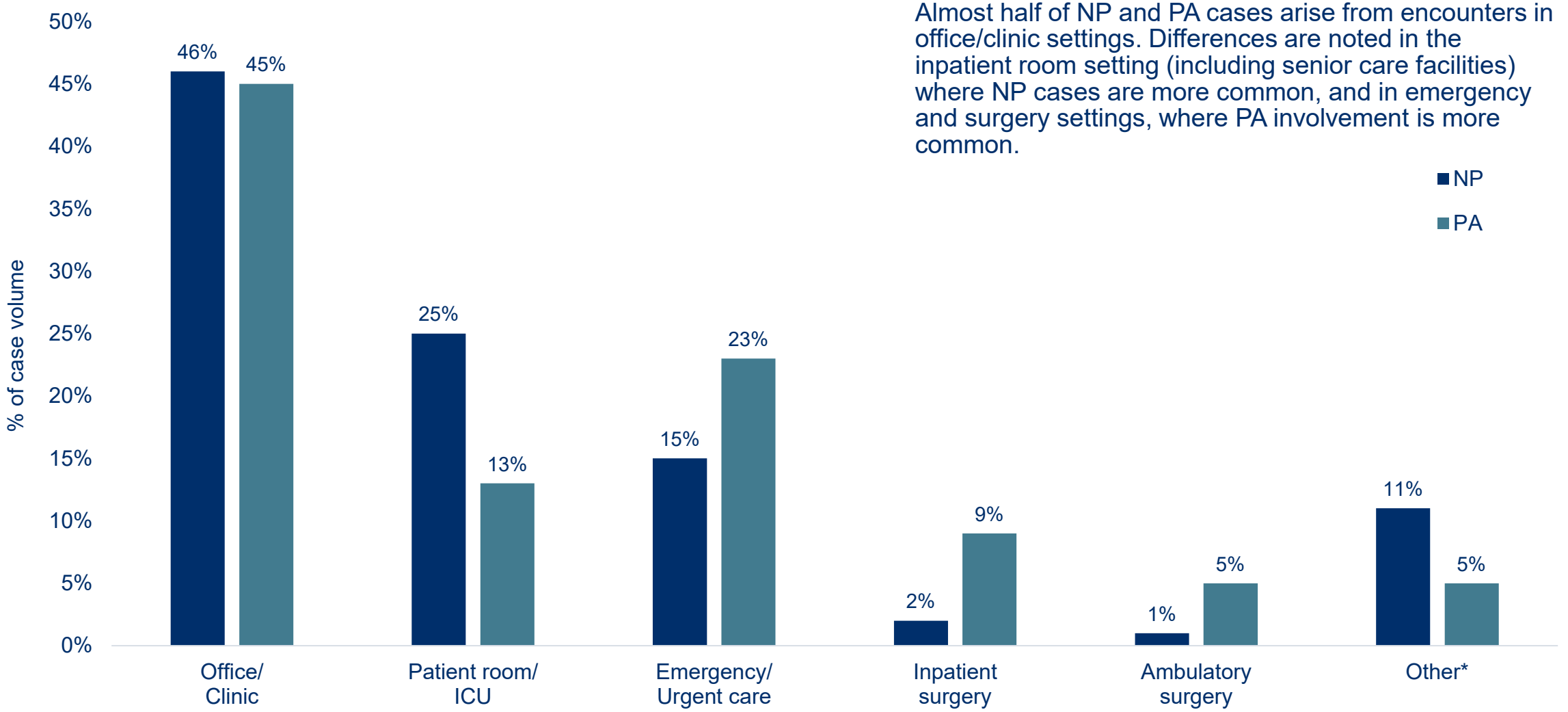
During the clinical coding process, individual provider types are linked to their clinical service.

The distribution shows a higher volume of NPs in Family/Internal Medicine cases, while PAs are more closely associated with Emergency and Orthopedic cases.



MedPro Group & MLMIC closed medical/surgical cases, opened 2015-2024, involving nurse practitioner (N=624) and/or physician assistant (N=641) as a primary responsible provider type; *Other includes services for which less significant case volume exists

NP and PA Cases by Location



Almost half of NP and PA cases arise from encounters in office/clinic settings. Differences are noted in the inpatient room setting (including senior care facilities) where NP cases are more common, and in emergency and surgery settings, where PA involvement is more common.

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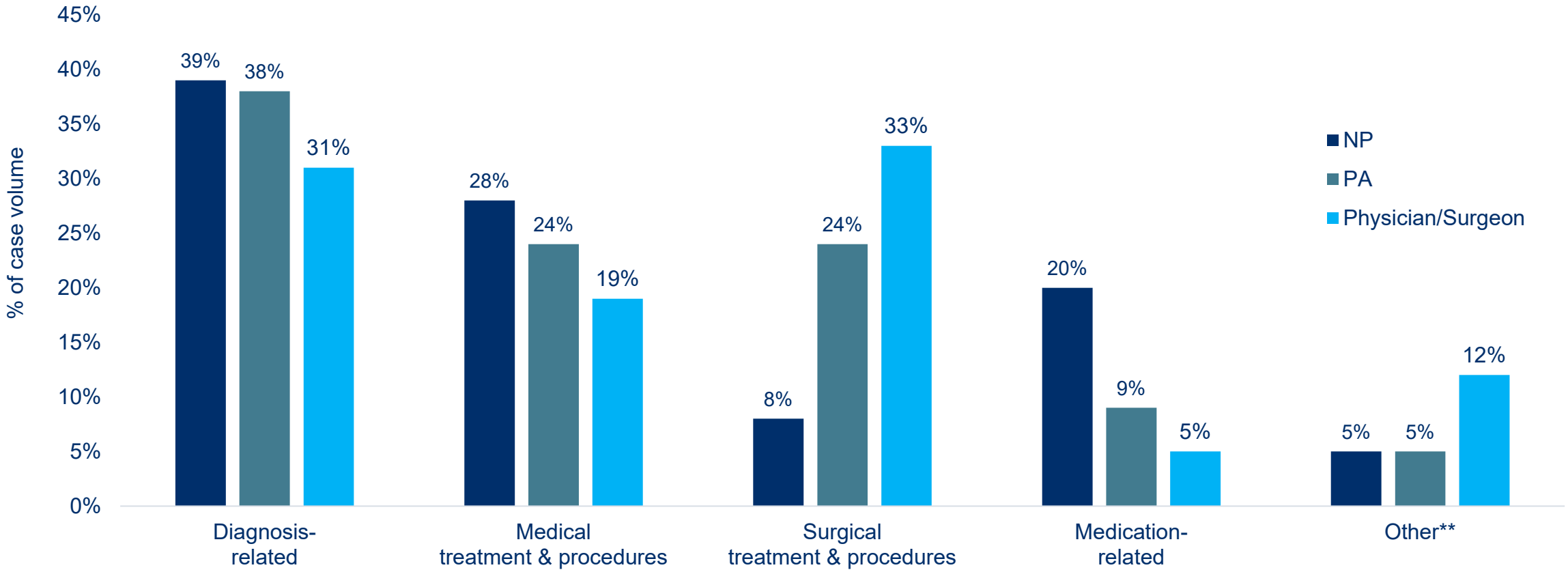
NP and PA Cases by Primary Case Type

Case types* characterize the essence of the event.

Diagnostic cases are most common. PAs are more often associated with surgical cases, while medication cases are more heavily linked to NPs.

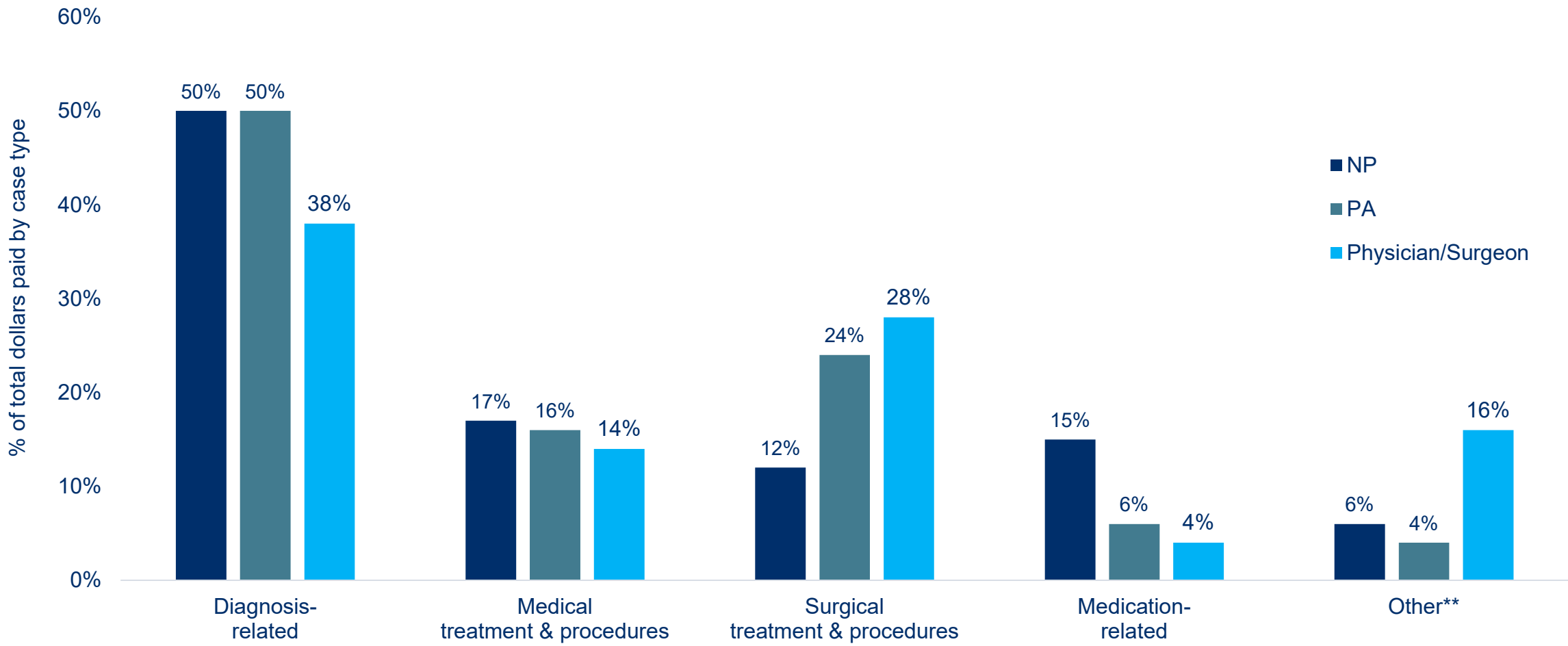
In comparison, approximately one-third of physician provider type cases are also diagnosis-related. Obstetric and anesthesia-related cases comprise most of the 'other' category for physicians/surgeons.



MedPro Group & MLMIC closed medical/surgical cases, opened 2015-2024, involving nurse practitioner (N=624) and/or physician assistant (N=641) as a primary responsible provider type (physician type N=>12K); *See case type definitions at the end of this report; **Other includes case types for which less significant case volume exists

NP and PA Primary Case Types by Financial Severity

Diagnostic cases account for the highest percentage of total dollars paid* across all provider types.



MedPro Group & MLMIC closed medical/surgical cases, opened 2015-2024, involving nurse practitioner (N=624) and/or physician assistant (N=641) as a primary responsible provider type (physician type N=>12K); *Total dollars paid = expense + indemnity; **Other includes case types for which less significant case volume exists

NP and PA Cases by Clinical Severity

Clinical severity is similar across each provider type.

Clinical severity* categories	Sub-categories	% NP case volume	% PA case volume	% Physician/ Surgeon case volume	Definitions
LOW	Emotional Injury Only	**6%**	**6%**	**4%**	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	**33%**	**39%**	**37%**	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	**61%**	**55%**	**59%**	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
		35%	**27%**	**24%**	**% of cases resulting in patient death**

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*Severity codes reflect National Association of Insurance Commissioners (NAIC) injury severity scale

NP and PA Cases: Focus on High Clinical Severity

Clinical severity* categories	Sub-categories	% NP case volume	% PA case volume
HIGH	Significant Permanent Injury	61%	55%
	Major Permanent Injury		
	Grave Injury		
	Death		

Like the distribution of case types and associated financial severity, the proportion of high clinical severity cases differ significantly for NPs and PAs only with surgical and medication cases.

NP:
Most common high clinical severity cases

Diagnosis-related	47%
Medical treatment & procedures	22%
Surgical treatment & procedures	10%
Medication-related	16%

PA:
Most common high clinical severity cases

Diagnosis-related	53%
Medical treatment & procedures	16%
Surgical treatment & procedures	21%
Medication-related	7%

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Focus on Diagnosis-Related Cases

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.

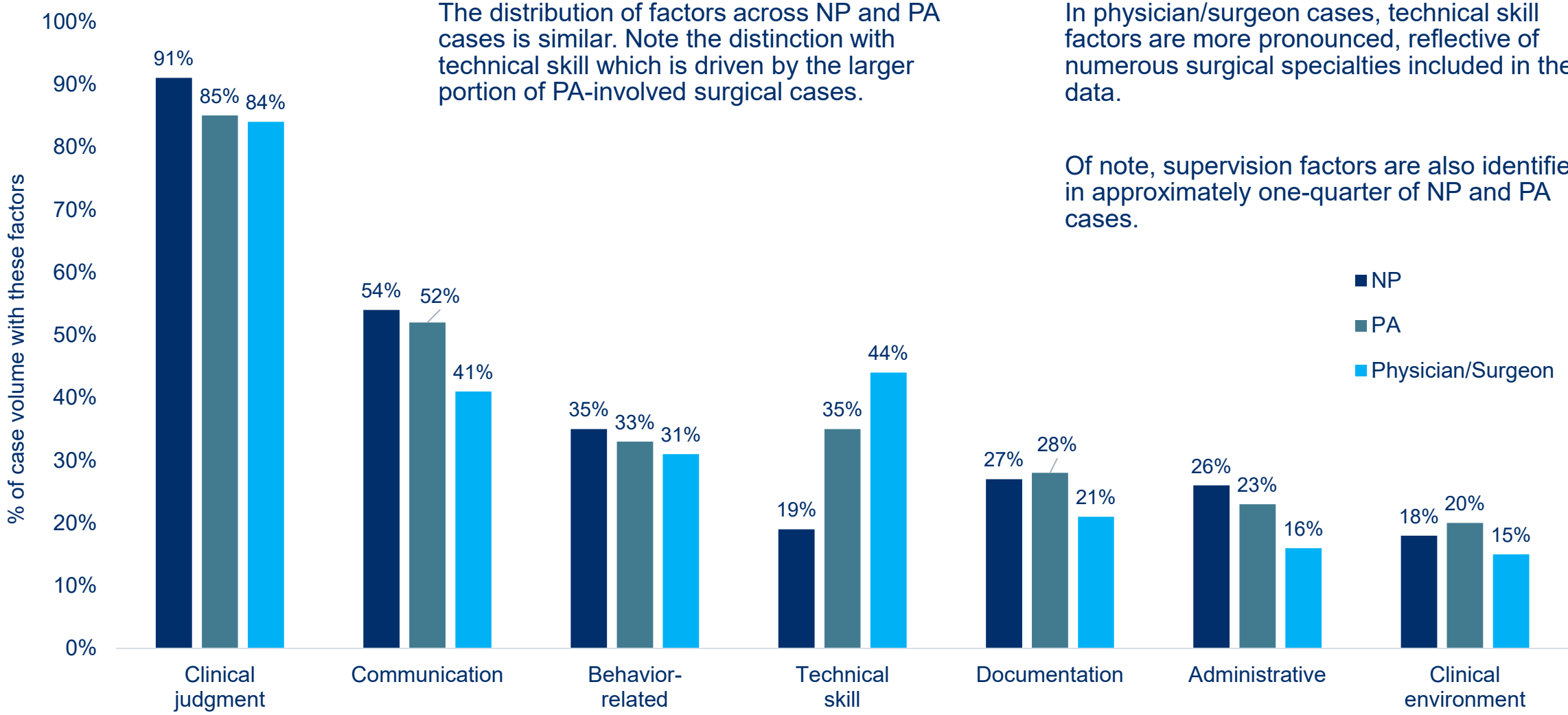
*See contributing factor definitions at the end of this report.

NP and PA Cases by Most Common Contributing Factors

The distribution of factors across NP and PA cases is similar. Note the distinction with technical skill which is driven by the larger portion of PA-involved surgical cases.

In physician/surgeon cases, technical skill factors are more pronounced, reflective of numerous surgical specialties included in the data.

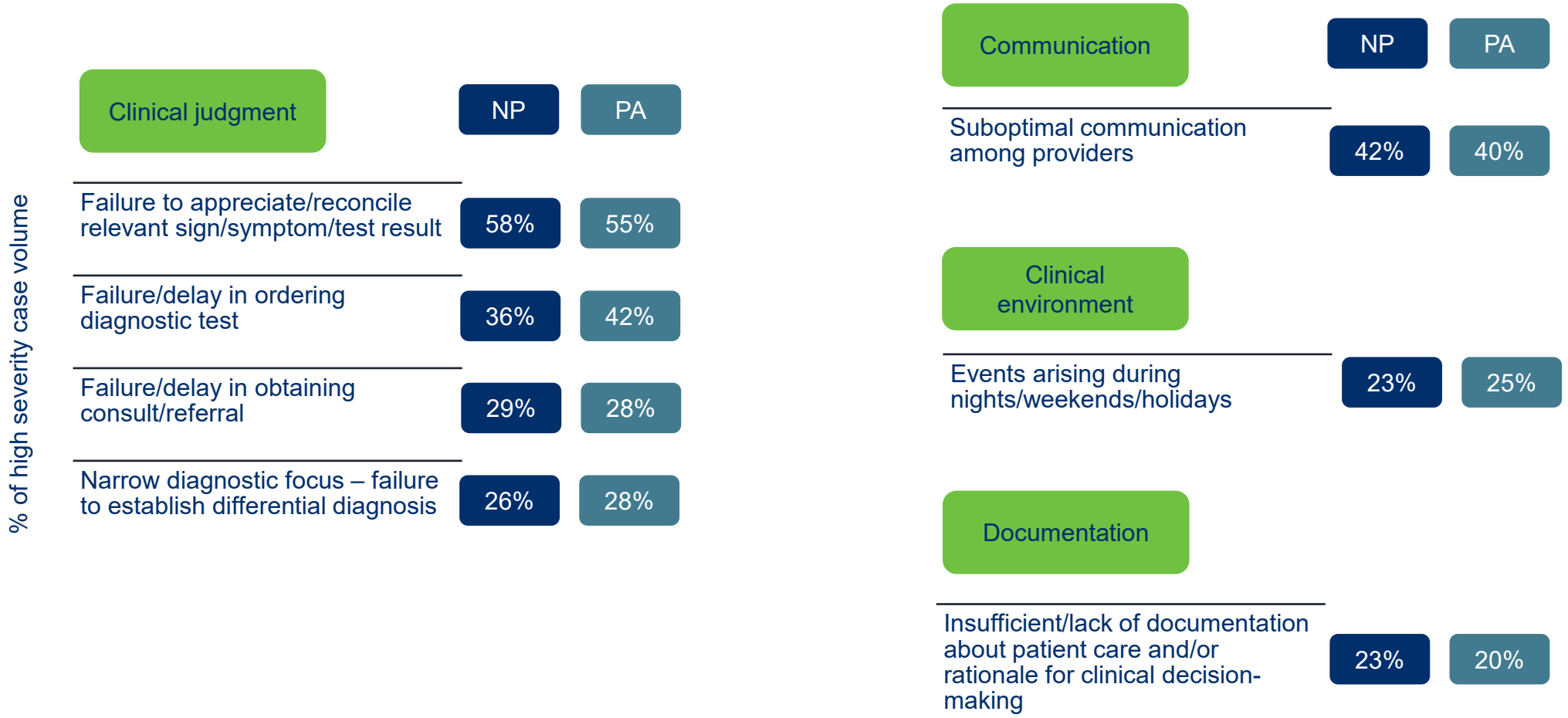
Of note, supervision factors are also identified in approximately one-quarter of NP and PA cases.



MedPro Group & MLMIC closed medical/surgical cases, opened 2015-2024, involving nurse practitioner (N=624) and/or physician assistant (N=641) as a primary responsible provider type (physician type N=>12K); Multiple factors identified per case, therefore totals >100%

Contributing Factor Details: Drivers of Clinical Severity

These failures in the process of care are among those most noted in cases involving a high clinical severity* outcome.



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NP and PA Cases: Diagnosis-Related Process of Care

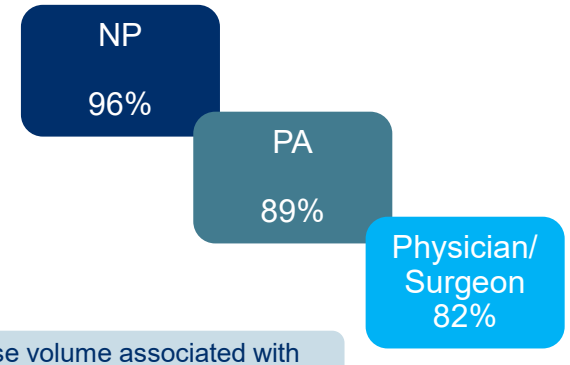
Diagnosis-related allegations encompass wrong diagnoses, failures/delays, and misdiagnoses. Note the key opportunities to reduce diagnostic errors along the diagnostic process of care*.

Comparatively, the distribution of case volumes across the three phases is similar between NP and PA cases. A larger portion of physician/surgeon cases is noted in phase two, primarily because Radiologists are included in the physician data set.

Phase 1 - initial diagnostic assessment

Steps involved:

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

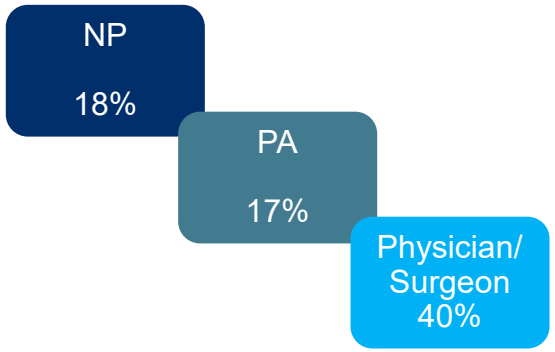


% case volume associated with each phase

Phase 2 - testing & results processing

Steps involved:

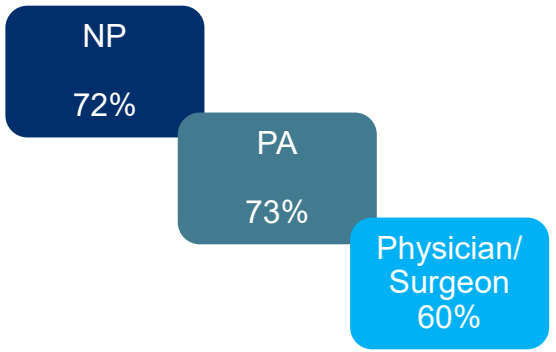
- Performance of diagnostic tests
- Interpretation of test results
- Test results transmitted to/received by ordering provider



Phase 3 - follow-up & coordination of care

Steps involved:

- Ordering provider follows up with patient
- Referrals/Consults initiated
- Patient information communicated among care team
- Patient compliance with follow-up plan



MedPro Group & MLMIC closed medical/surgical cases, opened 2015-2024, involving nurse practitioner (N=624) and/or physician assistant (N=641) as a primary responsible provider type (physician type N=>12K); *Each step reflects a combination of contributing factors (multiple factors identified per case therefore totals >100%); Diagnostic process of care algorithm courtesy of Candello, a division of CRICO Strategies

Focus on Most Common Driver of Clinical Severity

For both NPs and PAs, the clinical judgment factor involving failures to appreciate/reconcile relevant sign/symptom/test result is the most common driver in clinically severe* cases.

This factor is applied when there is evidence that a provider failed to recognize the emerging clinical scenario based on symptoms, exams, previous history, and diagnostic test results.

Diagnosis-related cases are most often associated with this factor.

Post-operative management cases are also commonly linked to this factor.

Case examples

NP

Patient presented with leg pain after a sports injury. Despite indicators of deep vein thrombosis (DVT), the NP diagnosed muscle strain and ordered an MRI but did not perform an ultrasound. DVT was not documented as differential diagnosis. Performance of the MRI was delayed. At a follow-up visit two weeks later, despite persistent symptoms, the NP maintained the initial diagnosis. When the MRI one week later revealed findings suspicious for DVT, anticoagulation was ordered, but then canceled due to insurance issues. The NP planned to perform an ultrasound the following morning, but the patient died overnight due to bilateral pulmonary emboli from the DVT.

PA

Orthopedic PA performed a closed reduction of a leg fracture while the patient was in the ED. Despite documented evidence of vascular insufficiency, no vascular consult was ordered pre-operatively. Post-operatively, there was an 8-hour delay by the PA to appreciate the significance of critical lab results, all pointing to developing compartment syndrome. The patient was left with permanent nerve and muscle damage.

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Case Examples

Case Example: Post-op Communication and Documentation Failures

Patient description

A 59-year-old male with a significant smoking history presented with chronic headaches, neck popping and cracking, and intermittent numbness affecting the right hand and arm.

Case scenario

Neurosurgeon recommended cervical spine surgery. Anterior cervical discectomy and fusion across multiple cervical levels was performed with assistance from a physician assistant (PA). Following surgery, the patient continued to report right arm pain, burning sensations, numbness, and weakness. During those office visit, the PA did not sufficiently document these symptoms, nor communicate them to the surgeon. Dissatisfied, the patient sought care elsewhere. Subsequent MRI and CT results demonstrated lack of fusion and spinal cord compression, leading to a diagnosis of cervical myelopathy and further surgical intervention.

Outcome

After posterior cervical decompression surgery, pain initially improved with return of strength. However, the patient later reported gait instability, shock-like sensations in a lower extremity, and balance difficulties. Neurological evaluation identified myelopathy and hemi-cord syndrome. The patient was unable to return to work and pursued disability.

Risk assessment summary

This case highlights the complexity of postoperative spine care and the impact of clinical judgment, communication, and documentation on patient outcomes.

- Communication gaps: Poor communication between the Neurosurgeon and PA regarding persistent postoperative symptoms limited timely reassessment and intervention.
- Documentation deficiencies: Incomplete documentation of patient complaints and the use of virtual examinations for neurological assessment, despite ongoing symptoms, reduced insights into the patient's clinical status and continuity of care. One virtual visit was documented as in-person.
- Patient factors and care fragmentation: Patient dissatisfaction led to care elsewhere, complicating coordinated postoperative management; smoking history increased risk for non-fusion.

Overall, the case underscores the importance of thorough documentation, clear interdisciplinary communication, appropriate in-person evaluations, and careful surgical decision-making in complex neurosurgical patients.

Case Example: Missed Diagnosis During Weekend/Night shift

Patient description

A 46-year-old female with stage four chronic kidney disease awaiting transplant, rheumatic heart disease, and smoking, reported chills and cough.

Case scenario

At 2am on a Friday, patient presented to the emergency department (ED). A physician assistant (PA) documented stable vital signs, oxygen saturation of 98%, and a normal breathing examination. Streptococcal and influenza tests were negative, and she was discharged with supportive care despite continuing chills and cough. Her symptoms persisted, and she presented to an urgent care center later that day. Evaluation was brief and no chest x-ray was ordered despite ongoing shortness of breath.

Outcome

The next evening, she returned to the ED critically ill with respiratory failure and sepsis; imaging showed pneumonia with tension pneumothorax. She required a breathing tube, chest tube, blood pressure support, transfer, and died after cardiac arrest.

Risk assessment summary

Clinical review highlights how repeated attribution of symptoms to viral illness can delay recognition of pneumonia progressing to sepsis.

- Missed risk recognition: High-risk history and persistent shortness of breath were not reconciled with a normal examination and stable vital signs during two separate visits.
- Delayed diagnostic testing: Chest x-ray was not obtained during either initial encounter despite ongoing symptoms.
- Overreliance on negative rapid tests: Negative streptococcal and influenza results appeared to reinforce discharge decisions while symptoms continued.
- Night and weekend care pressures: Initial evaluation occurred during a night shift and follow-up occurred on a weekend day, settings associated with reduced assessment time.

Overall, the pattern of limited assessment and delayed imaging contributed to a fatal escalation. Emphasis on broader differential diagnosis and timely diagnostics is essential in similar presentations.

Case Example: Medication Regimen Based on Incorrect Documentation

Patient description

A 74-year-old woman with hypertension, psychiatric illness, and chronic obstructive pulmonary disease was evaluated for abdominal pain.

Case scenario

She was hospitalized, diagnosed with diverticulitis, treated with antibiotics, and received an anti-coagulant for clot prevention. After transfer to a rehab facility, the admitting nurse documented "DVT" as the abbreviation for "diverticulitis." Upon return to an assisted living facility, a nurse practitioner (NP) prescribed an anticoagulant for presumed deep vein thrombosis (DVT) and pulmonary embolism and ordered INR monitoring. A critical value of 7.8 was not documented as having been received at the facility.

Outcome

The patient was hospitalized after coughing up blood. Overnight she worsened; imaging showed a large right parietal hemorrhage with herniation. Care was withdrawn and she died.

Risk assessment summary

Primary harm arose from anticoagulant therapy initiated for an unverified diagnosis and compounded by communication failures across care settings.

- Erroneous diagnosis entry: DVT was documented after transfer to rehabilitation, possibly from mislabeling "diverticulitis", and later orders relied on that erroneous entry.
- Record review lapse: The NP ordered anticoagulation for presumed DVT and pulmonary embolism without confirming the diagnosis in the medical record.
- Critical laboratory result failure: A critically high INR of 7.8 was reported as faxed, however, there was no evidence of receipt, and follow-up actions were unclear.
- Transition and supervision gaps: Multiple moves between facilities and unclear physician supervision contributed to fragmented accountability for anticoagulant dosing and monitoring.

Diagnostic verification at each transition in care, reliable result delivery, and clear supervision responsibility are central safeguards to reduce preventable hemorrhagic stroke and death.

Case Example: Narrow Diagnostic Focus

Patient description	A 66-year-old female with cardiac stents, atrial fibrillation, hypertension and a current history of smoking, presented with severe right leg burning pain, numbness, and impaired walking.
Case scenario	During an office visit, the Family Medicine nurse practitioner (NP) was not focused on the patient's leg symptoms, but instead on additional complaints, including an irregular heartbeat. Despite symptoms, she did not perform a pulse, foot, or vascular examination. Days later, discoloration and weakness in the patient's foot prompted hospital evaluation; a CT angiogram revealed complete femoral artery occlusion.
Outcome	Vascular surgery confirmed severe ischemia. Emergent revascularization failed, resulting in right below-knee amputation, later additional toe amputations, and long-term wheelchair dependence.
Risk assessment summary	This case highlights a diagnostic failure leading to limb loss in a patient with significant vascular risk factors.

- Incomplete assessment: The NP documented leg complaints but failed to perform a pulse, foot, or vascular examination, resulting in missed recognition of critical ischemic signs.
- Narrow diagnostic focus: Attention to other complaints led to failure to consider femoral artery occlusion despite pain, numbness, discoloration, and known cardiovascular risk factors.
- No referral: Absence of timely consultation, referral, or advanced vascular testing delayed definitive diagnosis until severe ischemia was present.

Overall, the events demonstrate how failures in the physical examination and diagnostic reasoning process in an ambulatory setting can delay intervention. Emphasis on thorough assessment and early referral is essential to prevent catastrophic outcomes in high-risk patients.

Risk Mitigation Strategies

Risk Mitigation Strategies

- Insufficient communication with other providers, nurses and supervising physicians/surgeons regarding relevant facts about the patient's care is a concern.
  - Ensure that NPs and PAs are comfortable communicating their concerns without fear of appearing non-confident.
  - Ensure that all providers understand that they are an essential part of a care team and that they must share pertinent patient information, which, when combined with other provider observations, could indicate a much more severe issue.
  - Ensure hand-off communication is effective and unrushed.
  - Authorize and invoke the "stop the line" concept by anyone who identifies a risk to a patient.
  - Encourage escalation of concerns up the chain of command.
  - Make sure that in all locations, nursing understands the role of NPs and PAs to ensure appropriate care coordination.
- Documentation styles can be widely varied when multiple providers (supervising physician/surgeon, NPs and PAs) are involved in a single patient's care.
  - Inconsistent documentation of patient symptoms and a provider's clinical rationale for treatment can result in patient care errors and create malpractice case defensibility issues.
    - Adhere to an established process for chart reviews.
    - Ensure consistent documentation among providers, with explanations where there is any inconsistency.
    - Do not sign off on charted information without thoroughly reading it.

Risk Mitigation Strategies

- Insufficient supervision/oversight/training is a frequently noted risk issue in NP and PA cases.
  - Supervision involves more than just signing charts.
  - Ensure that required supervision is a regular, on-going activity.
  - Establish that all staff who will be working on your behalf fully understand each the norms/policies/procedures of each facility or office location.
  - Be able to effectively communicate how you can determine and/or assess the competency of providers to perform their assigned tasks.
  - Use supervisory time to ensure that providers are comfortable relating doubts or questions.
  - Scope of practice is something that should be defined for each NP and PA and can be enhanced and/or expanded upon demonstration of requisite skills and knowledge.
  - Different levels of expertise should result in differing levels of supervision.

Definitions

Case Types & Contributing Factors

Definitions: Most Common Primary Case Types

Anesthesia-related: Management and treatment of the anesthesia patient; inclusive of pre-, intra-, and post-anesthesia periods, including performance of anesthesia procedures, diagnosing complications and immediate post-procedure pain management

Diagnosis-related: Encompasses delayed, missed and wrong diagnoses; inclusive of management of incidental findings

Medical treatment & procedures: Management and treatment of patients to address diseases and disorders; inclusive of the performance of medical and diagnostic procedures

Medication-related: Reflective of the medication delivery process, including ordering, dispensing and administering; inclusive of technique issues during administration

OB-related: Management and treatment of pregnancy; inclusive of antepartum, labor, delivery and post-partum periods; inclusive of diagnosing pregnancy-related maternal and fetal health conditions and performing OB procedures

Patient environment: Inclusive of falls and other preventable injuries during care, including physical safety (i.e., injury from equipment, surgical fires), infection control in the patient care areas, and security issues (i.e., assault)

Patient monitoring: Reflective of bedside observations and response to patients' physiologic or psychiatric reactions to disease, condition, injury or treatment

Provider behavior: Inappropriate behavior, including sexual misconduct

Surgical treatment & procedures: Management and treatment of the surgical patient; inclusive of pre-, intra-, and post-operative periods, performance of surgical procedures, and retained foreign bodies

Definitions: Most Common Contributing Factors

Administrative: Factors related to the 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 non-adherence 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 diagnostic testing, reporting findings, follow-up systems, patient identification, specimen handling, nosocomial infections

Communication: Factors related to communication between providers, among patient/family and providers; includes electronic communication (texting, email, etc.) and telehealth/tele-radiology

Documentation: Factors related to inaccuracy, insufficiency, altered or inappropriate content

Supervision: Factors related to supervision of nursing, staff, advanced practice clinicians

Technical skill: Factors related to improper use of equipment, medication errors, retained foreign bodies, and the technical performance of procedures

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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