Cardiology

Claims Data Snapshot

2023

MLMIC
MLMIC Insurance Company
a Berkshire Hathaway company

MedPro Group

Introduction

This publication provides an analysis of aggregated data from clinically coded cases opened between 2012-2021 in which Cardiology, including Interventional Cardiology, 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.

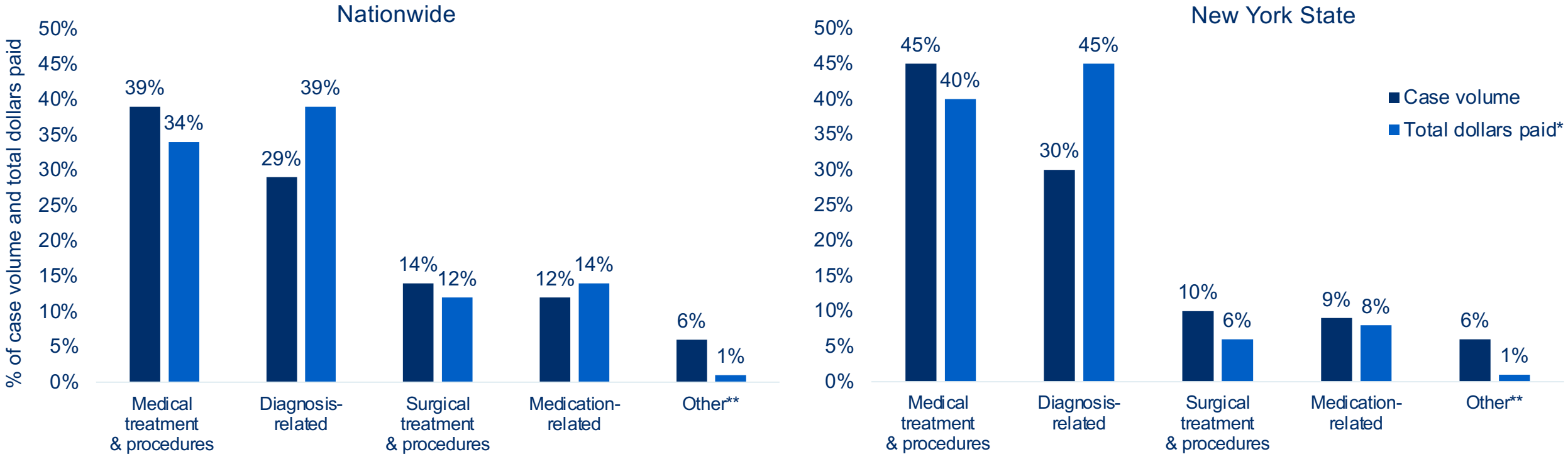
Key Points - Clinically Coded Data

- **Throughout this analysis, nationwide Cardiology case volume is reflected, with targeted focus on several New York State-specific data points.**
- **Diagnosis-related and medical treatment allegations** account for more than two-thirds of cardiology case volume and dollars paid*.
- **Medical treatment allegations** reflect an almost even distribution between procedural performance and medical management. Procedural performance cases, which most commonly involve diagnostic catheterizations, can be impacted by delayed recognition of complications, while management cases most often reflect issues with selection of the most appropriate procedure for the patient, and appreciating and reconciling symptoms and test results.
- **Diagnostic cases** on average are 15% more expensive to resolve than the average of all cardiology cases, and encompass wrong, missed and delayed diagnoses. **These cases commonly reflect** breaks in the diagnostic process of care, most often including inadequate assessment and evaluation of patient symptoms, a narrow diagnostic focus, delays or failures in ordering diagnostic testing, delays in obtaining consults or referrals, and sub-optimal communication among providers on the patient's care team.
- **Cases involving the management of surgical patients**, including pre-, intra-, and post-operatively, are often related to the **surgeon's response to developing complications**. While complications of procedures may have been the result of procedural error, the failure to timely recognize and/or monitor/manage the issue prevents the opportunity for early mitigation of the risk of serious adverse outcome. Surgical performance-related cases involve a variety of procedures with no real discernible pattern.
- **Prescribing and managing anticoagulation therapy** accounts for 51% of the **medication allegations**, and, on average, anticoagulation cases are the most expensive cardiology cases to resolve (49% more so). **Failure to identify which provider is coordinating care** is noted as a specific risk issue in anticoagulant cases, while 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 among all medication allegations.
- **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, including inadequate assessments, are most common; however, cases noting sub-optimal communication among members of the care team are, on average, the most expensive to resolve.

MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; *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.



MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; *Total dollars paid = expense + indemnity; **Other includes allegations for which no significant case volume exists

Clinical Severity*

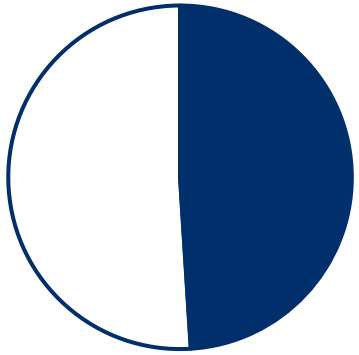
Clinical Severity Categories	Sub-categories	% of Nationwide case volume	% of New York State case volume
LOW	Emotional Injury Only	3%	5%
	Temporary Insignificant Injury		
MEDIUM	Temporary Minor Injury	23%	23%
	Temporary Major Injury		
	Permanent Minor Injury		
HIGH	Significant Permanent Injury	74%	72%
	Major Permanent Injury		
	Grave Injury		
	Death		

Typically, the higher the clinical severity, the higher the indemnity payments are, and the more frequently payment occurs.

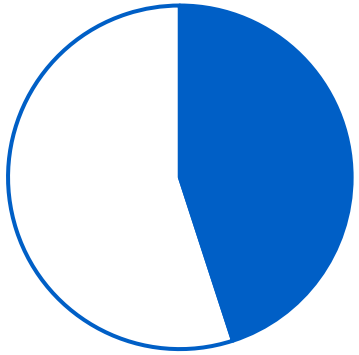
MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; *Severity codes reflect National Association of Insurance Commissioners (NAIC) injury severity scale

Claimant Type & Location

Nationwide



Inpatient
49%

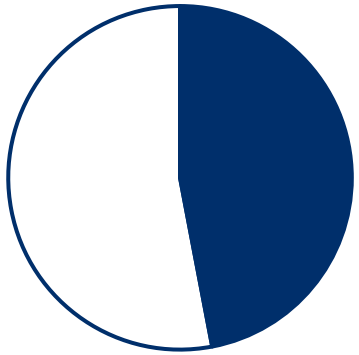


Ambulatory
45%

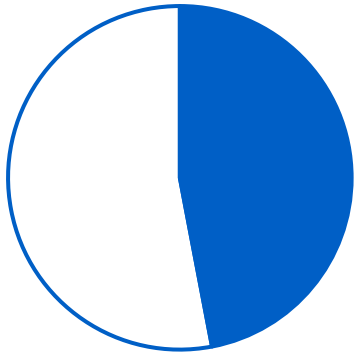
Emergency
6%

Top locations	% of case volume
Office/clinic	30%
Patient room/ICU	27%
Cardiac cath lab	27%
Emergency department	5%

New York State



Inpatient
47%



Ambulatory
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Top locations	% of case volume
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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."

CRICO Strategies. (2020). The Power to Predict: Leveraging Medical Malpractice Data to Reduce Patient Harm and Financial Loss. Retrieved from https://www.candello.com/Insights/Candello-Reports/Power-to-Predict.

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.

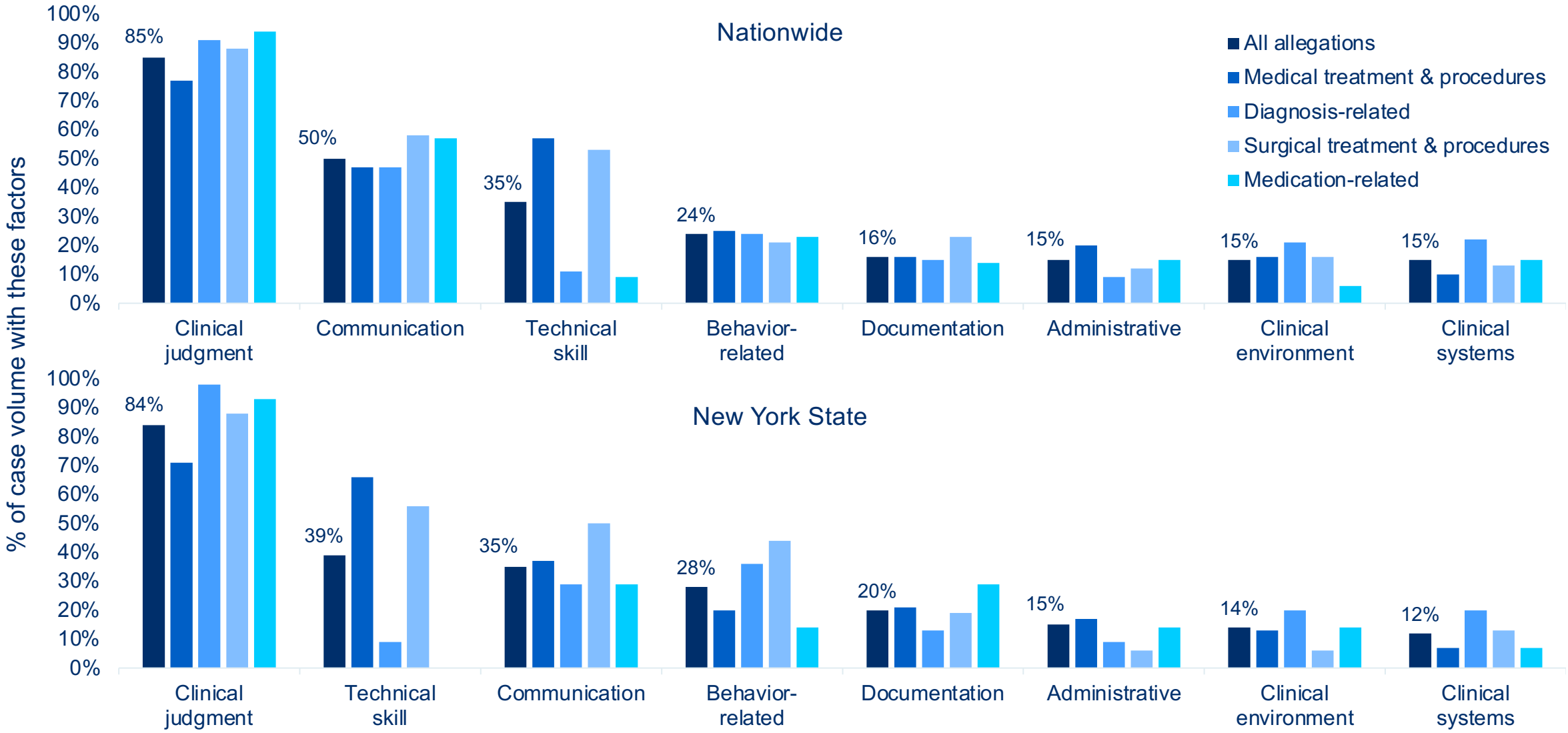
Multiple factors are identified in each case because generally, there is not just one issue that leads to these cases, but rather a combination of issues.

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

Contributing Factor Category Definitions

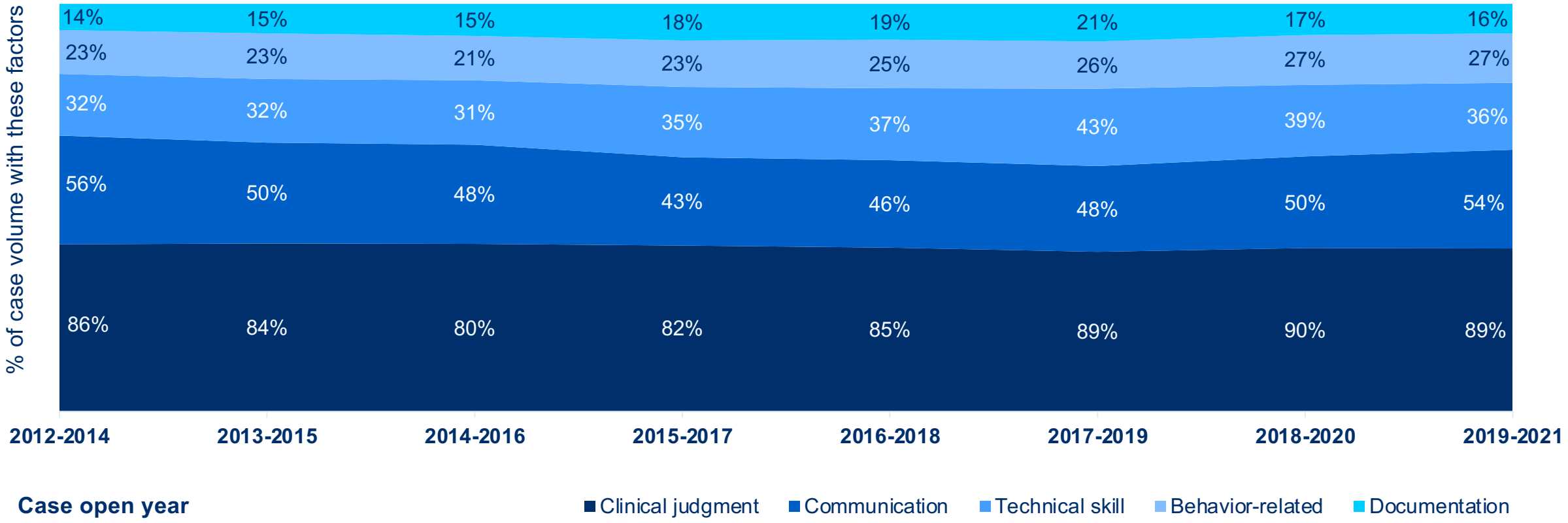
Administrative	Factors related to medical records (other than documentation), reporting, staffing, ethics, policy/protocols, regulatory
Behavior-related	Factors related to patient nonadherence to treatment or behavior that offsets care; also provider behavior including breach of confidentiality or sexual 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



MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; More than one factor per case, therefore totals >100%

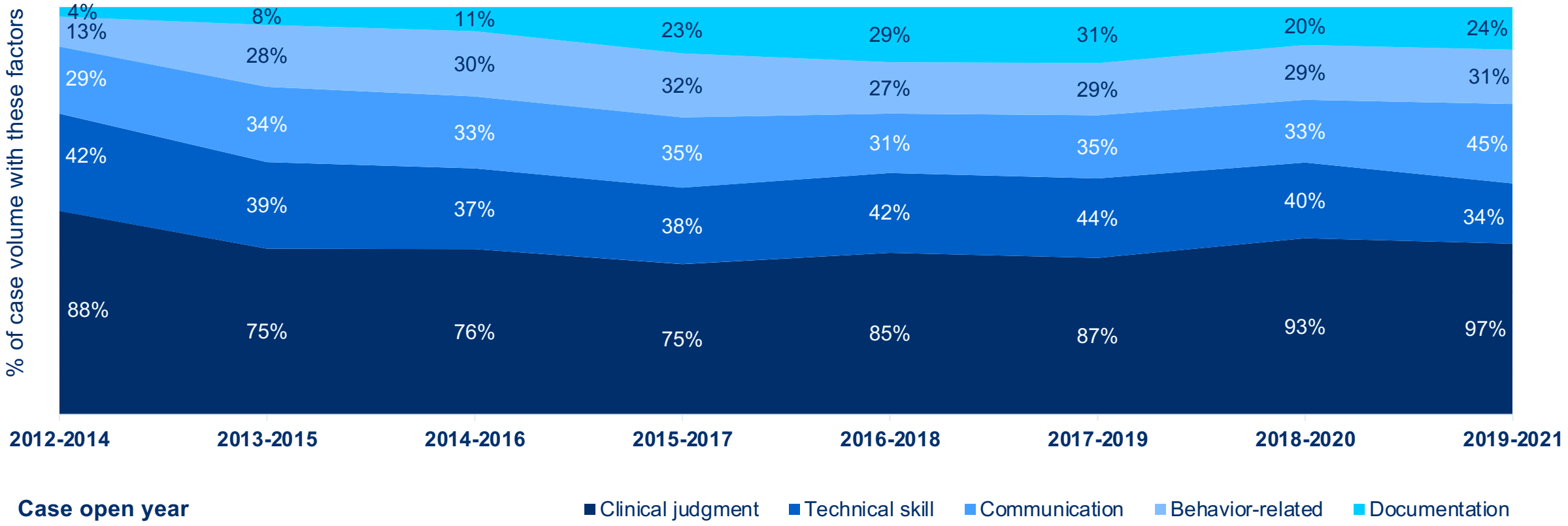
Nationwide: Distribution of Top Five Factor Categories Over Time



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.

MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; More than one factor per case, therefore totals >100%

New York State: 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.

Over time in New York, we see several fluctuations in the data. Keep in mind the relatively low number of New York cases in this data set; even small changes in the number of cases opened per year can have an impact on the distribution of the contributing factors.

MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; More than one factor per case, therefore totals >100%

Nationwide: Focus on Most Common Drivers of Clinical & Financial Severity

Factors associated with high clinical severity outcomes	**(CJ) failure to appreciate/reconcile signs/symptoms/test results (43%)**	**% of high severity case volume**
	(CJ) selection of most appropriate procedure (27%)	
	(CJ) failure/delay in ordering diagnostic test (26%)	
	(CO) suboptimal communication among providers about patient condition (26%)	
	(TS) recognition/management of known complications (19%)	
Factors associated with the costliest indemnity payments	**(CJ) monitoring of patient's medication regimen (60%)**	**% more expensive than the average indemnity payment***
	(TS) poor procedural technique (32%)	
	(CJ) misinterpretation of diagnostic studies (25%)	
	(CJ) failure to appreciate/reconcile signs/symptoms/test results (14%)	
	(CJ) failure/delay in ordering diagnostic test (11%)	

Clinical judgment factors, specifically inadequate patient assessment processes, are key drivers of both clinical and financial cardiology case severity.
Of note, indemnity payments involving medication regimen monitoring are primarily associated with the management of anticoagulants and antiarrhythmics.

AD: administrative; BR: behavior-related; CE: clinical environment; CJ: clinical judgment; CO: communication; CS: clinical systems; DO: documentation; SU: supervision; TS: technical skill
MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; More than one factor per case, therefore totals >100%; *limited to factors associated with >/= 15 cases

New York State: Focus on Most Common Drivers of Clinical & Financial Severity

Factors associated with high clinical severity outcomes	**(CJ) failure to appreciate/reconcile signs/symptoms/test results (41%)**	**% of high severity case volume**
	(CJ) failure/delay in ordering diagnostic test (32%)	
	(TS) recognition/management of known complication (29%)	
	(CJ) selection of most appropriate invasive (26%) or medical procedure (18%)	
	(CO) suboptimal communication among providers about patient condition (17%)	

Factors associated with the costliest indemnity payments

Occurrence/management of known complications and failures to appreciate/reconcile signs/symptoms/test results are the contributing risk factors noted most often in the indemnity-paid cases, but the low overall New York State case volume does not allow for conclusive statements.

Clinical judgment factors, specifically inadequate patient assessment processes, are key drivers of both clinical and financial Cardiology New York case severity. Of note, indemnity payments involving medication regimen monitoring are primarily associated with the management of anticoagulants and antiarrhythmics.

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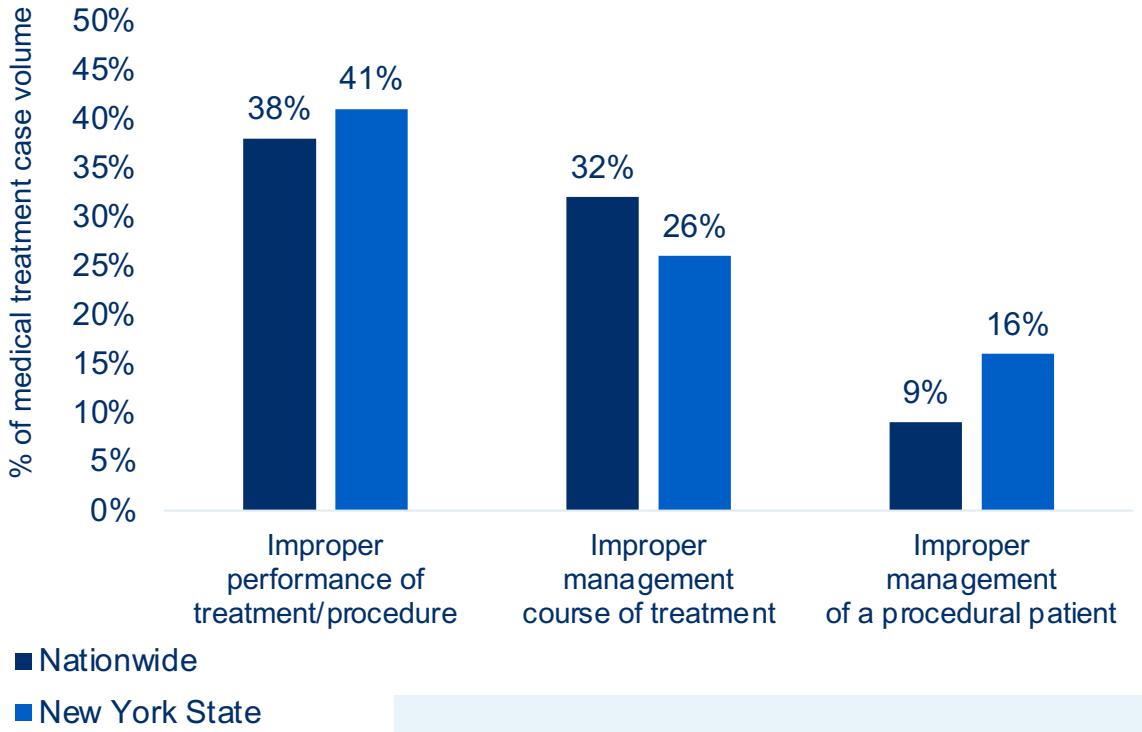
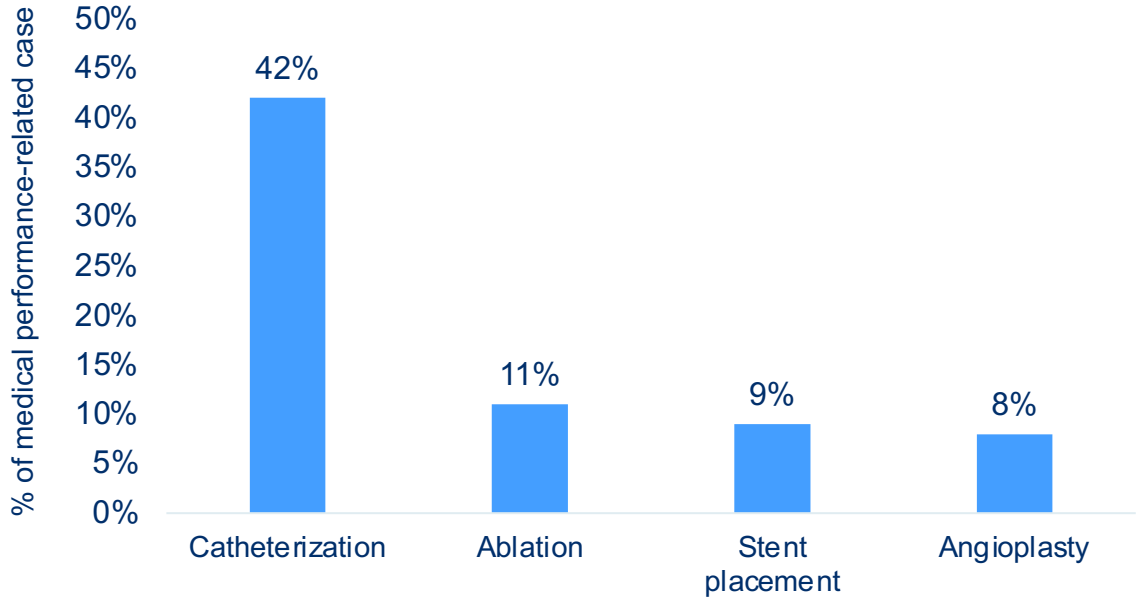
Focus on Medical Treatment Allegations

Top allegation details



Top procedures involved (nationwide only)



For both nationwide and New York State, procedural performance cases can be 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.

MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154

Nationwide: 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.

Cardiac disease (56%)

Primarily acute MI; others include pulmonary emboli, infections, congestive heart failure

Arterial disease (11%)

Primarily aortic dissections

Procedural complications (8%)

Primarily punctures and lacerations

Malignancies (5%)

Lung / trachea

MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; *as a percentage of all diagnosis-related allegations

Nationwide: 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

85%
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

27%
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

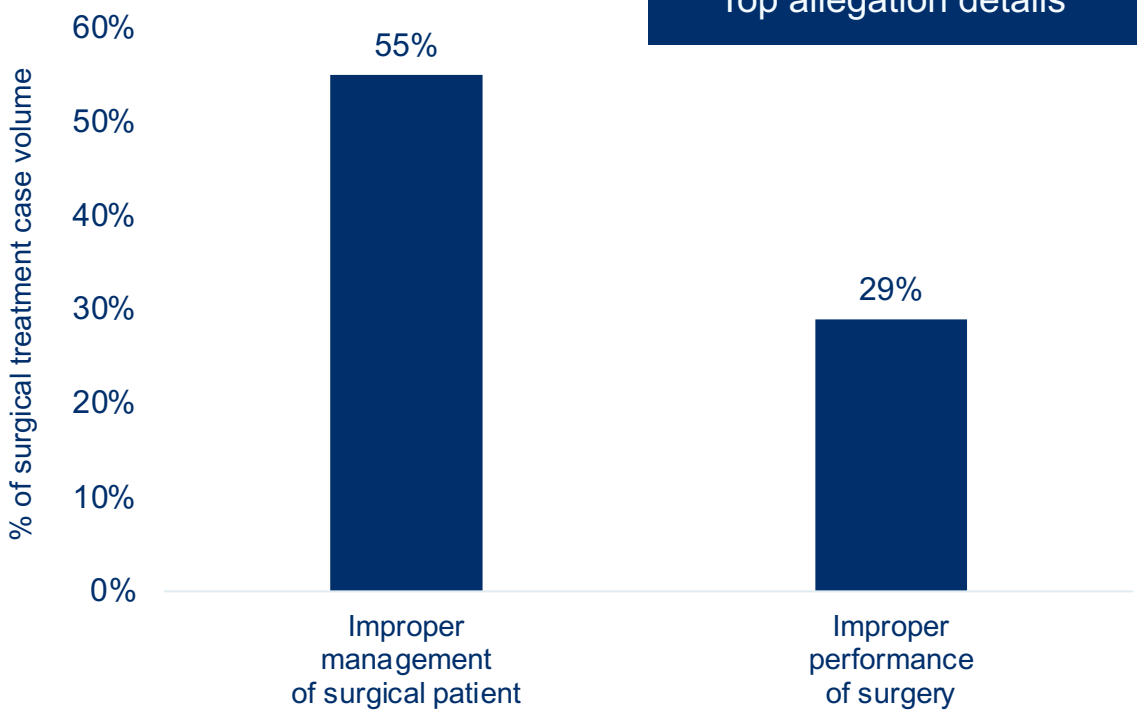
61%
of cases

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

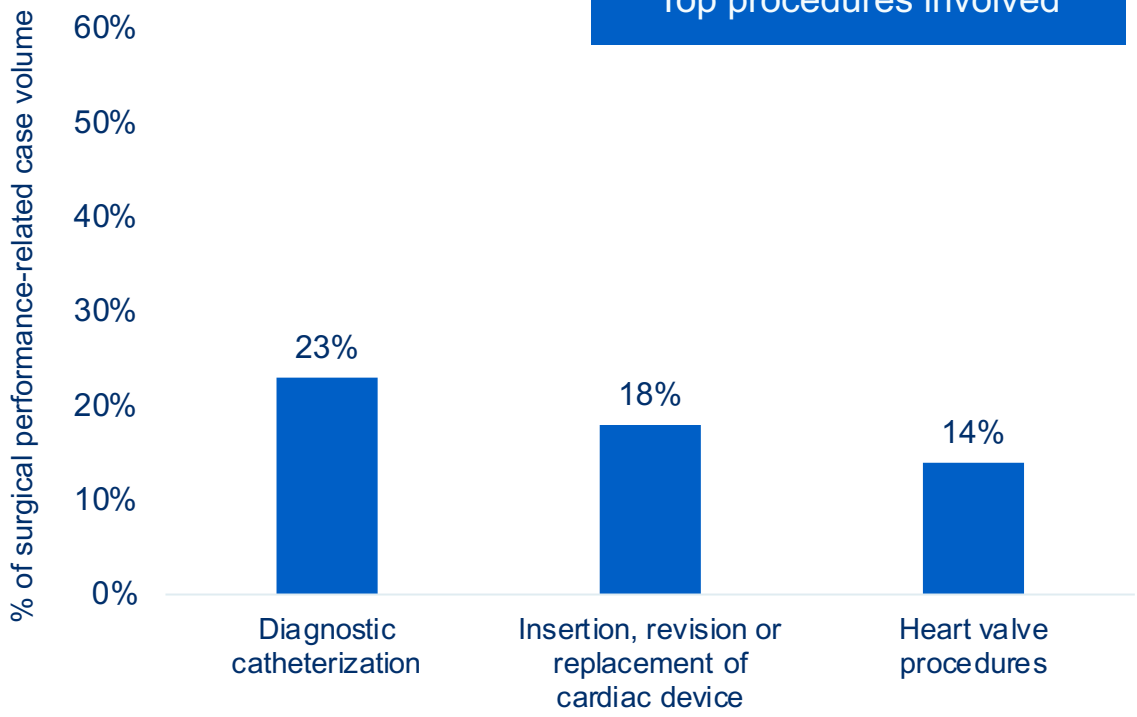
MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154; *each step reflects a combination of contributing factors; diagnostic process of care algorithm courtesy of Candello, a division of CRICO Strategies

Nationwide: Focus on Surgical Treatment Allegations

Top allegation details



Top procedures involved



Cases involving the management of surgical patients, including pre-, intra-, and post-operatively, are often related to the surgeon's response to developing complications. While complications of procedures may have been the result of procedural error, the failure to timely recognize and/or monitor/manage the issue prevents the opportunity for early mitigation of the risk of serious adverse outcome. A few other surgical allegation details with no significant volume are noted also, including unnecessary surgery, delayed surgery and retained foreign bodies.

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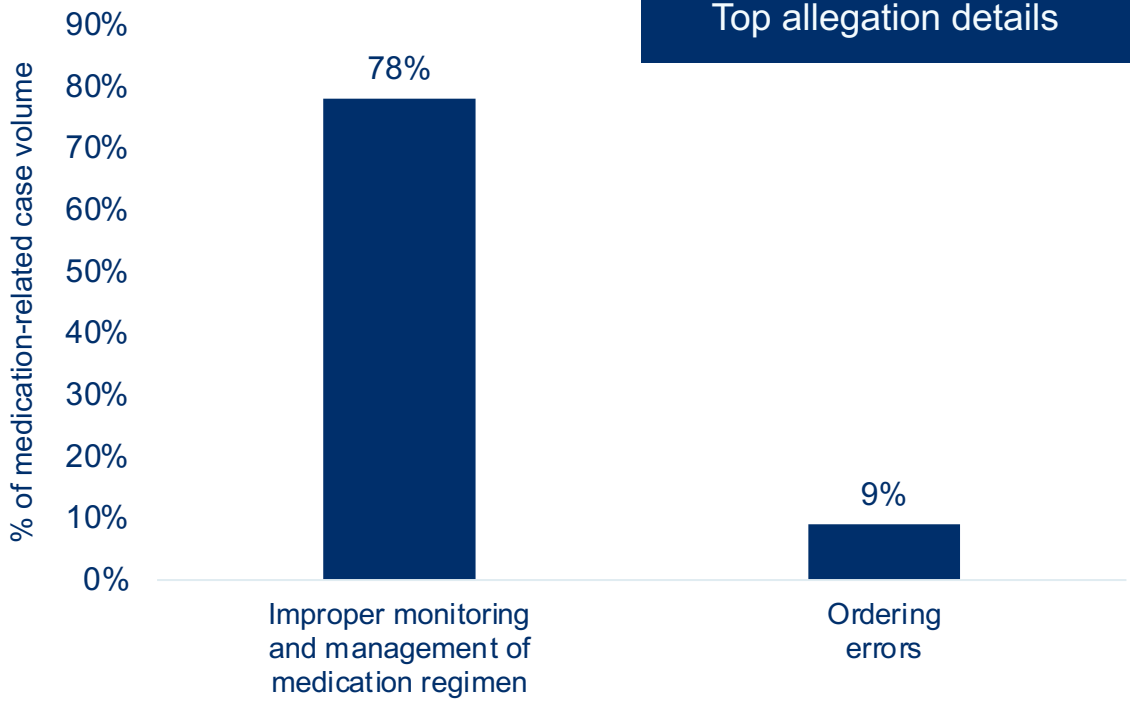
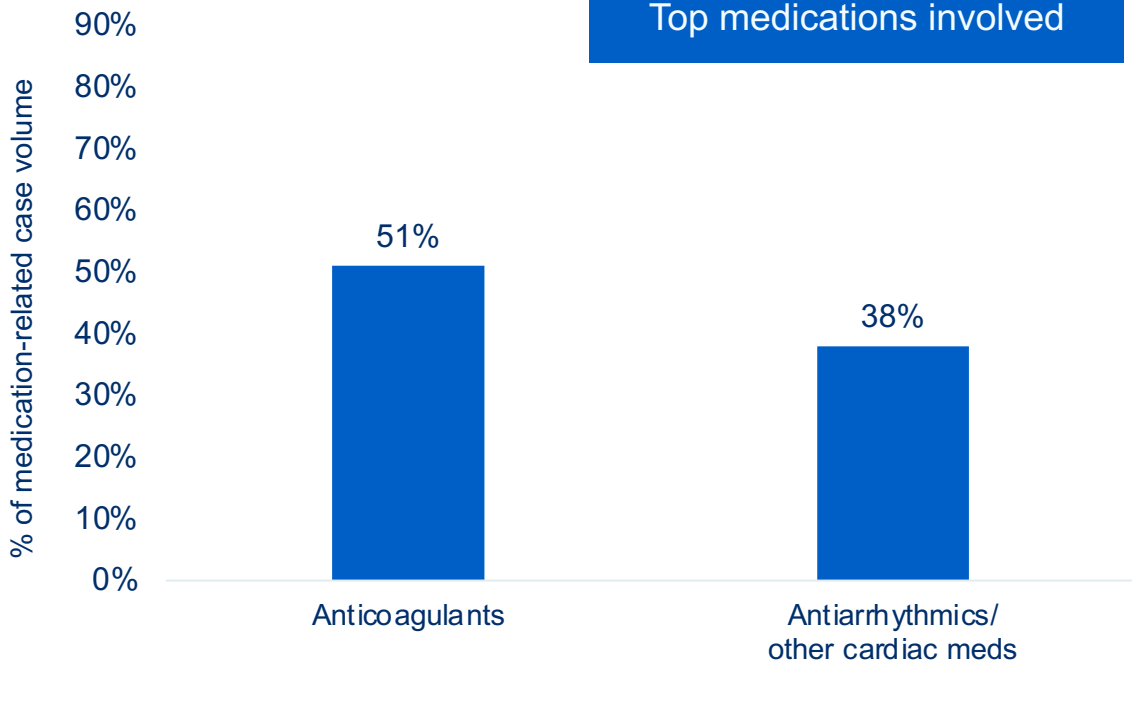
Nationwide: Focus on Medication-Related Allegations

Top allegation details



Top medications involved



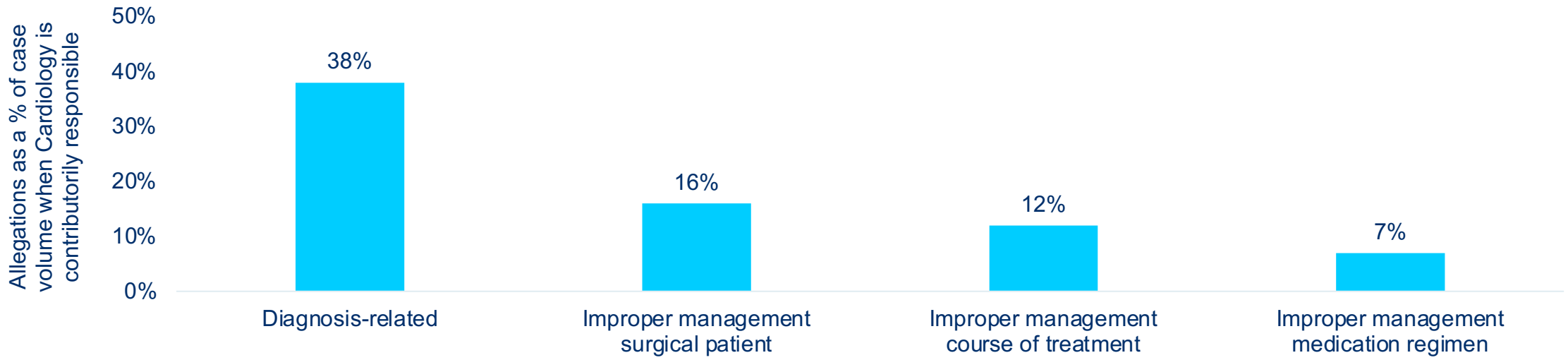
Failure to identify which provider is coordinating care is noted as a specific risk issue in anticoagulant cases, while problems with selection of the most appropriate medication regimen, monitoring/assessing the patient while on that regimen, and sub-optimal communication among providers about medication regimens and evolving signs/symptoms are the most common contributing factors. A few other medication allegation details with no significant volume are noted also, including previously unknown allergic reactions to medications.

MLMIC + MedPro Group cases opened 2012-2021, Cardiology as responsible service; Nationwide N=536, New York State N=154

Nationwide: Contributorily Responsible

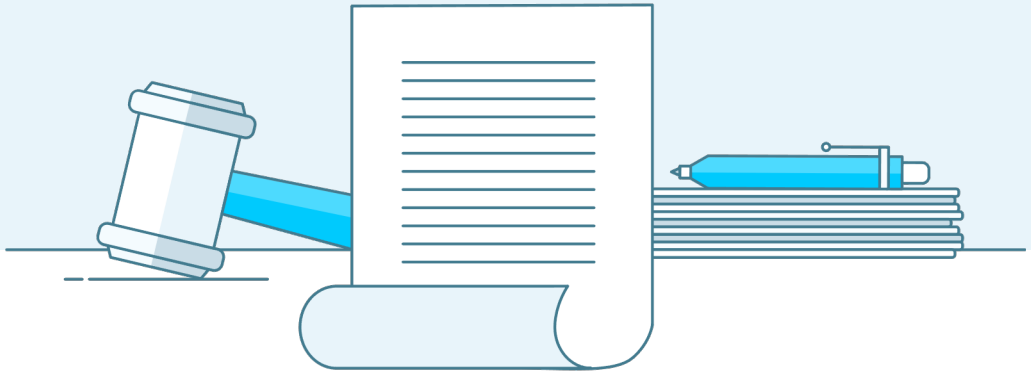
Although this analysis is focused on cases reflecting Cardiology as the primarily responsible service, another 359 cases identify Cardiology as contributorily responsible. The primary services in these cases are varied, reflecting the myriad of providers who care for patients along the healthcare continuum. The most common primary services, and a comparison of top allegation categories, are shown below.

Emergency medicine	Internal medicine	Nursing staff	Medical hospitalist	Cardiac surgery	Family medicine	Anesthesiology
14%	14%	10%	8%	8%	8%	6%



MLMIC + MedPro Group cases opened 2012-2021, Cardiology as contributorily responsible (N=359)

Case Examples



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

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

SETTLED

$1.5M

CONTRIBUTING FACTORS

Clinical judgment
Failure/delay in obtaining consult/referral

Selection/management of the most appropriate procedure

Communication
Hierarchal issues - suboptimal communication among providers about patient's condition

IMPROPER PERFORMANCE OF CARDIAC CATHETERIZATION RESULTING IN DEATH

A 65-year old female patient presented to the cardiologist for cardiac catheterization. **During the procedure, the cardiologist punctured the femoral artery resulting in a massive retroperitoneal bleed**.

An intra-aortic balloon pump was inserted. The cardiologist left around midnight the day of the procedure. Overnight, the patient developed a distended abdomen and became hemodynamically unstable.

The ICU resident and nurse documented three separate calls to the cardiologist during the overnight shift, asking for permission to call for a vascular consult. The cardiologist refused each time. It wasn't until the patient developed severe metabolic acidosis that the cardiologist agreed to the consult.

It was discovered that the intra-aortic balloon pump had occluded blood supply to the colon. The patient subsequently developed multi-system organ failure. Despite several emergency surgeries, she died three days after the initial surgery.

Case Examples

SETTLED

$500,000

CONTRIBUTING FACTORS

Clinical judgment
Narrow diagnostic focus with atypical presentation (young patient)

Inadequate history/physical

Failure to appreciate/reconcile relevant signs/symptoms/test results

Failure/delay ordering diagnostic test

FAILURE TO DIAGNOSE PULMONARY EMBOLUS RESULTING IN DEATH

A female patient in her early 20s, with a history of morbid obesity, asthma, oral contraceptive use and a family history of blood clots **was admitted to the ER with syncopal episode, urinary tract infection, dehydration, and heat stroke**.

She was admitted, treated with fluids and antibiotics and discharged two days later. **She saw an allergist shortly thereafter**, who determined that her pulmonary function was consistent with asthma. However, **the allergist also referred the patient to a cardiologist** due to elevated heart rate (120-130) while in the office, and difficulty breathing.

The next day, the patient saw her primary care provider as a follow-up to the ER visit. She complained of shortness of breath and advised of the cardiologist appointment later in the day. Patient then presented to the cardiologist. She did not complain of shortness of breath at this appointment. Her heart rate was noted to be 124, O2 stats 92%, and **physical exam normal except for pain in the left calf**. EKG revealed several non-specific abnormalities.

The cardiologist did not consider deep vein thrombosis/pulmonary embolus (DVT/PE) as a differential diagnosis; he later claimed that he assumed the patient had been worked up for pulmonary embolus in the ER. However, no inquiry was made to confirm this assumption. The cardiologist ordered a Holter monitor, an echocardiogram, thyroid function test and tilt table test.

Four days after the cardiology appointment, **the patient suffered a respiratory arrest and was unable to be resuscitated in route to the hospital**. No data was found on the Holter monitor. The autopsy states the cause of death to be a PE. Expert review was critical of the cardiologist's failure to consider DVT/PE given the patient's history of oral contraceptives, increased heart rate, pain in calf, intermittent shortness of breath and an abnormal EKG reading.

Risk Mitigation Strategies

To support sound clinical decision-making:

- Conduct a thorough pre-procedure screening of patients for risk factors.
- Consider differential diagnoses, especially when faced with repeated patient complaints or concerns when making clinical decisions about patient care and additional diagnostic testing.
- Incorporate standardized practices to reduce the risk of adverse events, including anticoagulant dosing regimens and flowcharts.

Communicate with each other. Actively collaborate with other members of the patient's care team.

- Focus on care coordination (next steps and who is responsible).

Engage patients as active participants in their care. Consider patients' health literacy when communicating.

- Carefully document nonadherence using objective information.

To minimize the risk of complications, ensure adherence to credentialing policies, including evaluation of procedural skills and competency with equipment.

- Consider using the American College of Cardiology's "Tools and Practice Support" website option.

Ensure a consistent system for safe patient care.

- Focus on the scheduling, performance, interpretation of tests, and timely communication of results.
- Consider expanding the role of clinical pharmacists to assist in management of anticoagulant services.
- Recognize that failure to communicate results to the patient, failure to arrange for follow up testing, and failure to document the plan for follow up can drive malpractice allegations.

MLMIC & MedPro Group Data

MLMIC and MedPro Group 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, MLMIC and MedPro Group 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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