NCPS
Nebraska Coalition for Patient Safety

Patient Safety Events Summary 2024

for

Nebraska Coalition for Patient Safety

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Executive Summary

In 2024, NCPS collected patient safety records from member organizations at Nebraska electronically through three sources, REDCAP, ACCESS, or Press Ganey. All reported events were mapped to a hybrid taxonomy of 24 categories based on National Quality Forum (NQF) events, NCPS member reported events, in addition to the AHRQ Common Formats.

Key findings from 2024 patient safety events:

- There was a total of 39,486 events reported in 2024. Top five event types were **Care Management Not Otherwise Specified, Medication, Lab/Specimen, Patient Protection (Other), Diagnostic Error.**
- Top five contributing factors were **Staff Qualifications, Human Factors, Patient/Family Factors, Policies/Procedures, Communication/Team Factors.**
- About 6.3% (n=2,478) of the reported events reached the patient and resulted in harm. Specifically, of these events, 452 (18.3%) were **Medication**, 330 (13.36%) were **Care Management Not Otherwise Specified,** and 319 (12.9%) were **Fall**.
- About 0.57% (n=162) of the 28,187 events with a known severity level resulted in permanent harm or death. **Care Management Failures or Delays** (n=37, 22.84%) and **Medication** (n=25, 15.43%) were the highest reported events, followed by **perinatal**, **Surgery**, and **Care Management Not Otherwise Specified**.
- Of the reported event types, **Skin/Tissue (Non-Pressure Injuries)** (46%), **Skin/Tissue (Pressure Injuries)** (44%), **Airway/Respiratory Care Management** (36%), and **Anesthesia** (19%) were the reported events most likely to result in harm.
- The most common event types reported across different hospital settings were **Care Management Not Specified** and **Medication.** In addition to these two events, **Patient Protection (Other***)* is the most reported event in large hospitals and medical center and specialty hospitals, while **Diagnostic Error** are the 2nd most reported event in critical access hospitals, **Lab/Specimen** was the 2nd most reported event in ambulatory care practices, and **Patient Protection AMA/LWA/Elopement** was the 3rd most reported event in community hospitals.
- **Staff Qualifications, Human Factors, Patient/Family Factors, and Communication/Team factors** were the factors that contributed to a majority of event types.
- For multiple event types with more than 1,000 reported cases in 2024, the most frequently reported contributing factors across all hospital settings were **Staff Qualifications, Patient/Family Factors, Equipment/Devices/Supplies,** and **Human Factors**.
- The top contributing factors for **Blood and Blood Type** events and **Perinatal** events varied across hospital settings. For blood and blood type events, **Information Management** was among the top three contributing factors in large hospitals, urban hospitals, specialty hospitals, and community hospitals, but not in ambulatory care settings or critical access hospitals. For perinatal events, the most frequently reported contributing factor differed by setting: **Environment** was most common in large and urban hospitals and community hospitals; **Communication and Team Factors** were most common in ambulatory care settings; and **Policies and Procedures** were most common in critical access hospitals.

Introduction

In 2024, NCPS collected patient safety records from member organizations at Nebraska electronically through three sources, REDCAP, ACCESS, or Press Ganey. The patient safety events in the Press Ganey report mainly followed the Agency for Healthcare Research and Quality(AHRQ) Common formats to categorize events by type, assign a severity level according to the outcome to the patient, and identify factors that contributed to the event. To aggregate and analyze data from member organizations reporting through REDCAP and ACCESS, we mapped all reported events to a hybrid taxonomy of 24 categories based on National Quality Forum (NQF) events, NCPS member reported events, in addition to the original AHRQ Common Formats. This hybrid taxonomy uses the 10 event types in the AHRQ Common Formats and adds 14 event types that NCS members use but that would be categorized as 'Other' in the AHRQ Common Formats (Table 1). For events not categorized in these 24 types, we categorized them into 'Other' and we added a 'No event types reported' category to capture the records reported as an event but missing event type information. Definitions of these event types are reported in Appendix Table S1.

Table 1. Nebraska Coalition for Patient Safety Hybrid Event Type Taxonomy

NCPS Hybrid Event Types	Source
Airway/Respiratory Care Management (not associated with anesthesia)	NCPS Members
Anesthesia	AHRQ Common Formats
Blood or Blood Product	AHRQ Common Formats
Care Coordination	NCPS Members
Care Management Failure/Delay	NCPS Members
Care Management Language/Interpreter	NCPS Members
Care Management Not Otherwise Specified	NQF and NCPS Members
Device or Medical/Surgical Supply	AHRQ Common Formats
Diagnostic Error	AHRQ Common Formats
Diagnostic Imaging	NQF and NCPS Members
Environmental	NQF and NCPS Members
Fall	AHRQ Common Formats
Healthcare-Associated Infection	NQF and NCPS Members
Lab/Specimen	NQF and NCPS Members
Medication	AHRQ Common Formats
Patient ID/Documentation/Consent	NCPS Members
Patient Protection/Against Medical Advice/Left Without Being Seen/Elopement	NQF and NCPS Members
Patient Protection (Not Suicide/Suicide Attempt)	NQF and NCPS Members
Patient Protection (Other)	NQF and NCPS Members
Perinatal	AHRQ Common Formats
Pressure Injury	AHRQ Common Formats
Skin/Tissue (Non-Pressure Injury)	NCPS Members
Surgery (Including Invasive Procedures)	AHRQ Common Formats
Venous Thromboembolism	AHRQ Common Formats
Other	NCPS Members
No Event Type Reported	NCPS Members

Analysis of Events in 2024

Type of events

Table 2 shows the types of events reported by member organizations in 2024. There was a total of 39,486 events reported in 2024. The most frequently reported event types were Care Management events (n=5,235, 13.3%), Medication events (n=5,193, 13.2%), and Lab/Specimen events (n=3,874, 9.8%). The least frequently reported event types were Anesthesia events (n=32, 0.1%), Airway/Respiratory Care Management events (n=44, 0.1%), and Patient Protection (Suicide/Suicide Attempt) events (n=48, 0.1%). Additionally, Other events accounted for 4,061 reports (10.3%).

Table 2. Types of Events

Events	**n**	**%**
Care Management Not Otherwise Specified	5,235	13.3%
Medication	5,193	13.2%
Lab/Specimen	3,874	9.8%
Patient Protection (Other)	3,384	8.6%
Diagnostic Error	2,718	6.9%
Patient Protection Against Medical Advice/Left Without Being Seen/Elopement	2,662	6.7%
Fall	1,885	4.8%
Surgery (Including Invasive Procedures)	1,739	4.3%
Blood or Blood Product	1,453	3.7%
Device or Medical/Surgical Supply	1,244	3.2%
Patient ID/Documentation/Consent	1,217	3.1%
Care Management Failure/Delay	1,173	3.0%
Perinatal	1,061	2.7%
Healthcare-Associated Infection	740	1.9%
Care Management Language/Interpreter	365	0.9%
Skin/Tissue (Non-Pressure Injury)	352	0.9%
Pressure Injury	311	0.8%
Care Coordination	232	0.6%
Environmental	99	0.3%
Diagnostic Imaging	56	0.1%
Patient Protection (Suicide/Suicide Attempt)	48	0.1%
Airway/Respiratory Care Management (not associated with anesthesia)	44	0.1%
Anesthesia	32	0.1%
Other	4,061	10.3%
No Event Type Reported	308	0.8%
Total	**39,486**	**100%**

Contributing factors

Table 3 shows the types of contributing factors member organizations reported in 2024. There was a total of 58,169 event-contributing factor combinations reported in 2024. The most frequently reported contributing factors were Staff Qualifications (n=12,543, 21.6%), Human Factors (n=8,633, 14.8%), Patient/Family Factors (n=6,459, 11.1%), and Policies/Procedures (5,314, 9.1%), Communication/Team Factors (n=4,627, 8.0%). The least frequently reported contributing factors were HIT/EHR/CPOE/eMAR (n=1,282, 2.2%), Environment (n=1,538, 2.6%), and Handover/Handoff (n=1,677, 2.9%). A total of 2,662 events did not have contributing factors reported. Because multiple contributing factors could be reported for a single event type, the number of contributing factors exceeds the total number of events. Definitions of these contributing factors are reported in Appendix Table S2.

Table 3. Types of Contributing Factors

Contributing Factors	**n**	**%**
Staff Qualifications	12,543	21.6%
Human Factors	8,633	14.8%
Patient/Family Factors	6,459	11.1%
Policies/Procedures	5,314	9.1%
Communication/Team Factors	4,627	8.0%
Supervision/Management/Culture	3,013	5.2%
Information Management	2,755	4.7%
Equipment/Devices/Supplies	1,795	3.1%
Handover/Handoff	1,677	2.9%
Environment	1,538	2.6%
HIT/EHR/CPOE/eMAR	1,282	2.2%
Other	3,055	5.3%
No Known Factors	2,816	4.8%
No Factors Reported	2,662	4.6%
Total	**58,169**	**100%**

Abbreviations: CPOE, Computerized Provider Order Entry; eMAR, Electronic Medication Administration Record; EHR, Electronic Health Record; HIT, Health Information Technology.

Events Severity Levels

Table 4 shows the distribution of events by severity. The NCCMERP Error Severity Scale was used to categorize the severity of events from categories A to I (See Appendix table S3). Of the total 39,486 events that occurred in 2024, 18.1% (n=7,137) did not reach the patient (Categories A-B), 47.1% (n=18,582) reached the patient but did not result in harm (Categories C-D), 6.3% (n=2,478) reached the patient and resulted in harm (Categories E-I), and 28.6% (n=11,289) did not report event severity.

Three types of events (Medication, Care Management, and Falls) accounted for nearly half of the 2,478 events that resulted in harm. Specifically, of the 2,478 harm events, 452 (18.3%) were Medication events, 330 (13.36%) were Care Management events (not otherwise specified), and 319 (12.9%) were Fall events.

Table 4: Severity of Events in 2024 (n=39,486)		
Severity Levels	**n**	**%**
Did not reach patient and did not result in harm	7,137	18.1%
Reached patient and did not result in harm	18,582	47.1%
Reached patient and resulted in harm	2,478	6.3%
No severity level reported	11,289	28.6%
Total	**39,486**	**100%**

Association between event types and severity

Figure 1 illustrates the association between event types and the three levels of severity. When looking at the percentage of events that resulted in any harm for each event type, the top event categories that resulted in harm are:

- Skin/Tissue (Non-Pressure Injuries): (46%) of the reported events resulted in harm.
- Pressure Injuries: (44%) of the reported events resulted in harm.
- Airway/Respiratory Care Management: (36%) of the reported events resulted in harm.
- and Anesthesia: (19%) of the reported events resulted in harm.

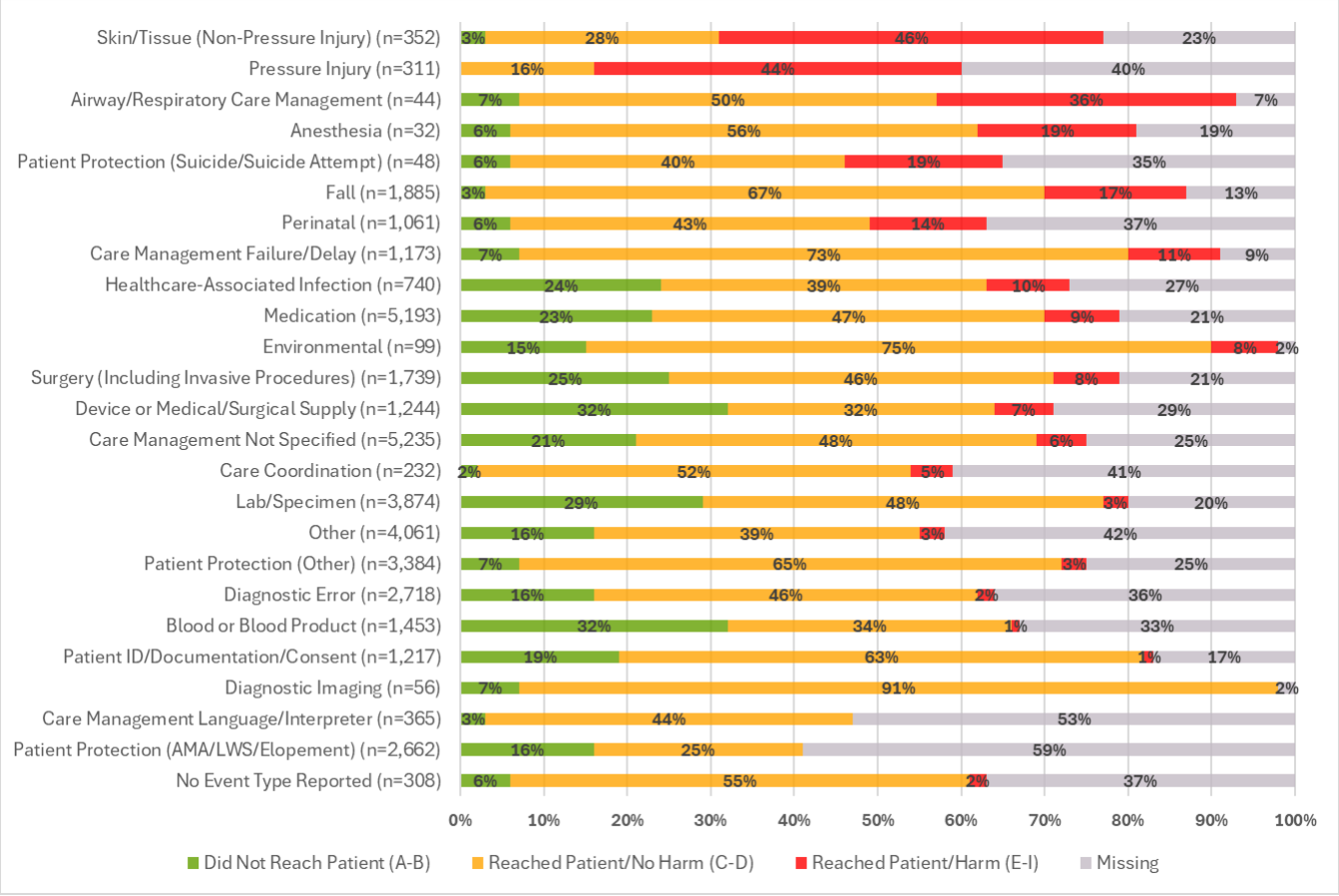

Figure 1. Association Between Event Type and Severity Among Total Events in 2024 (**n=39,486**)

Events Resulted in Permanent Harm or Death

Figure 2 shows the distribution of event types for the 162 events resulted in permanent harm or death (Categories G-I). It accounts for 0.57% (162) of the 28,187 events with a known severity level. Among these 162 events that resulted in permanent harm or death, Care Management Failures or Delays (n=37, 22.84%) and Medication events (n=25, 15.43%) were the highest reported events, followed by perinatal, Surgery, and Care Management Not Specified.

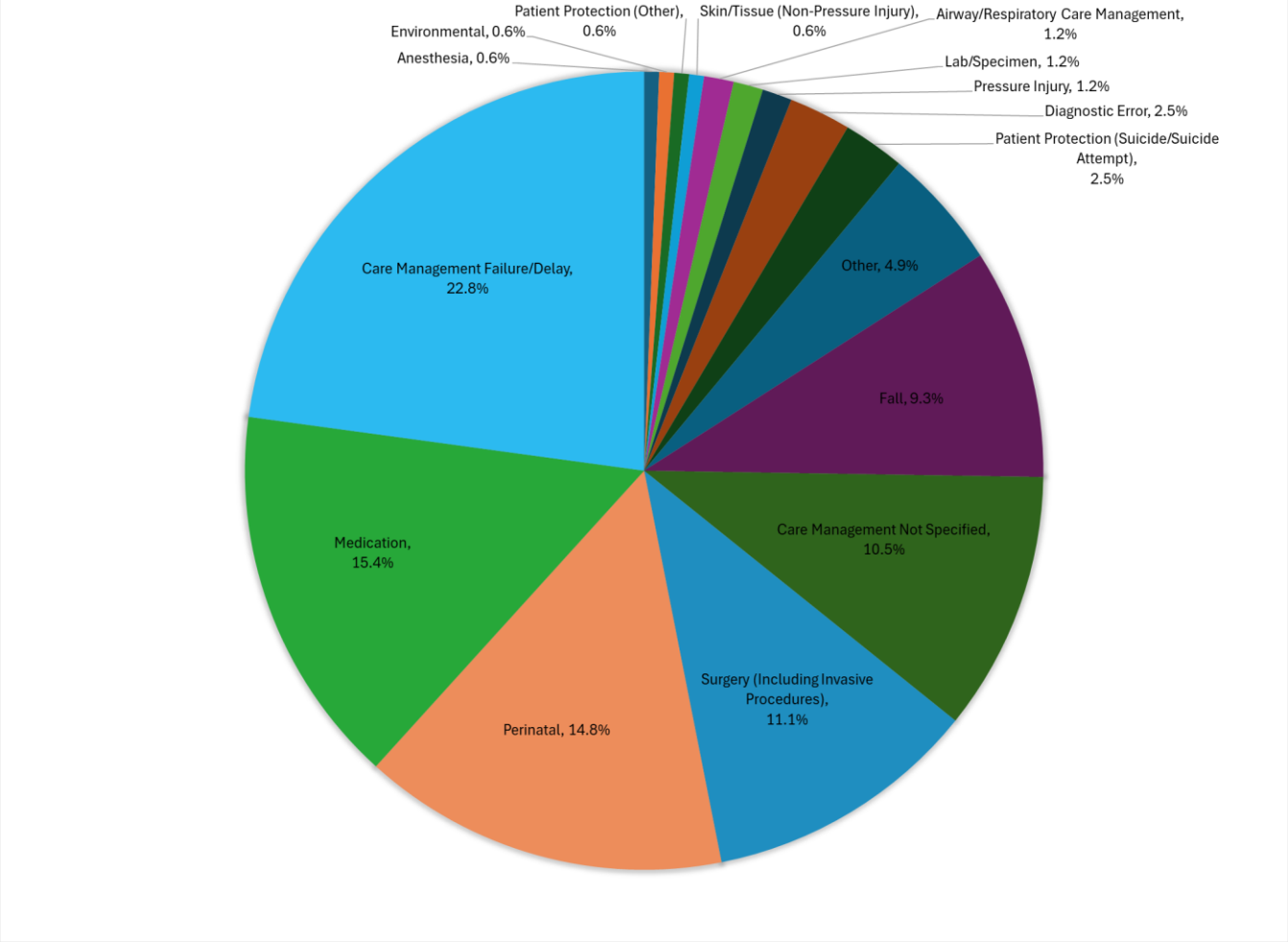

Figure 2. Types of Events That Resulted in Permanent Harm or Death in 2024 (n=162)

Events by hospital settings

Table 5 shows the most reported event types by hospital setting. Nearly half (46.5%) of all events reported occurred in **large hospitals and medical centers,** followed by **community hospitals** (35.2%), **ambulatory care practices** (9.6%), **critical access hospitals** (4.5%), and **specialty hospitals** (4.2%).

When looking at the top three reported events, the most common event types reported across different hospital settings were **care management events (not specified)** and **medication.** In addition to these two events, *patient protection (other)* is the most reported event in large hospitals and medical center and specialty hospitals, while *diagnostic error* are the 2nd most reported event in critical access hospitals, *lab/specimen* was the 2nd most reported event in ambulatory care practices, and *patient protection AMA/LWA/Elopement* was the 3rd most reported event in community hospitals.

Top three reported events amounted to 15,469, 39 % of the 39,471 events reported across these five settings. Top three reported events accounted for a very high percentage of total number of events in Large Hospitals and Medical centers (6,599, 35.9%) and in Community Hospitals (5,517, 39.7%), and in Ambulatory Care Practices (1,634, 40.0%), and close to half of the events reported in Critical Access Hospitals (880, 49.5%) and specialty hospitals (839, 51.0%)

Table 5. Reported Events Occurring in 2024 by Setting

Hospital Settings	Most Reported Event	2nd Most Reported Event	3rd Most Reported Event	Sum of Top 3
Ambulatory Care Practices (n=3,796, 9.62%)	Care Management Not Specified (n=678, 17.9%)	Lab/Specimen (n=603, 15.9%)	Medication (n=353, 9.3%)	**n=1,634, 40.0%**
Community Hospitals (n=13,885, 35.18%)	Medication (n=2,071, 14.9%)	Care Management Not Specified (n=1,844, 13.3%)	Patient Protection AMA/LWA/Elopement (n=1,602, 11.5%)	**n=5,517, 39.7%**
Critical Access Hospitals (n=1,777, 4.50%)	Medication (n=443, 24.9%)	Diagnostic Error (n=223, 12.6%)	Care Management Not Specified (n=214, 12.0%)	**n=880, 49.5%**
Large Hospitals and Medical Centers (n=18,369, 46.54%)	Patient Protection (Other) (n=2,288, 12.5%)	Care Management Not Specified (n=2,202, 11.9%)	Medication (n=2,109, 11.5%)	**n=6,599, 35.9%**
Specialty Hospitals (n=1,644, 4.17%)	Patient Protection (Other) (n=325, 19.8%)	Care Management Not Specified (n=297, 18.1%)	Medication (n=217, 13.2%)	**n=839, 51.0%**
Total	**n=5,805, 37.5%**	**n=5,169, 33.4%**	**n=4,495, 29.1%**	**n=15,469, 100%**

*Events (n=15) occurring at federally qualified hospital centers and offsite locations were excluded due to low frequencies.

Association between Event Types and Contributing Factors

Table 6 shows the association between Event Type and Contributing Factors. The distribution of contributing factors varied by event type.

- All reported event types had multiple contributing factors.
- When excluding "Other", "No Known Factors" and "No Factors Reported" as contributing factors**, Staff Qualifications, Human Factors, and Patient/Family Factors** were the factors that contributed to a majority of event types.
  - Staff Qualifications contributed to 76% of Patient ID/Documentation/Consent events, 54% of Pressure Injury events, and 48% of Diagnostic Error events.
  - Human Factors contributed to 44% of Medication events, 39% of Pressure Injury events, and 36% of Patient ID/Documentation/Consent events.
  - Patient/Family Factors contributed significantly to all Patient Protection events, 89% of events where patients went against medical advice, eloped, or left without being seen, 65% of suicide or attempted suicide events, and 65% of non-suicide or attempted suicide (other) events. Patient/Family Factors also contributed to 32% of Airway/Respiratory Care Management events.
- **Communication/Team factors** was the most reported contributing factor for Care Coordination, Care Management Language/Interpreter, Care Management Failure/Delay, Diagnostic Imaging events.

Association between Event Types and Contributing Factors by hospital settings

Table 7 shows the most reported contributing factors for selected event types by hospital settings. The selected event types were relatively more frequently reported (>1,000) in 2024, including Blood or Blood Product, Care Management Failure/Delay, Care Management Not Specified, Device or Medical/Surgical Supply, Diagnostic Error, Fall, Healthcare-Associated Infection, Lab/Specimen, Medication, Patient ID/Documentation/Consent, Patient Protection (Other), Patient Protection (AMA/LWS/Elopement), Perinatal, Surgery (Including Invasive Procedures).

For most events, the top three contributing factors are common across different settings.

- **Staff Qualifications** was among the most reported contributing factors for events involving Blood or Blood Products, Care Management Failure/Delay, Care Management Not Otherwise Specified, Diagnostic Error, Healthcare-Associated Infections, Lab/Specimen, Patient ID/Documentation/Consent, and Surgery (including Invasive Procedures).
- **Patient/Family Factors** was the most reported contributing factor for Patient Protection events,
- Equipment/Devices/Supplies was the most reported contributing factor for Devices or Medical/Surgical Supply Events
- **Human Factors** was the most reported contributing factor for Medication events across all hospital settings.

There were some differences in the contributing factors by events across different hospital settings.

- For blood and blood type, *Information Management* was the most frequently reported contributing factor in large hospitals and urban hospitals, the 2nd most frequently reported in specialty hospitals, and the 3rd most frequently reported in community hospitals. It was not reported as one of the top three contributing factors in ambulatory care setting or in critical access hospitals.
- For perinatal events, *Environment* was the most frequently reported contributing factor in large hospitals and urban hospitals and community hospitals. *Communication/team factors* was the most frequently reported contributing factor in ambulatory care setting, while *Policies and Procedures* was the most frequently reported contributing factor in critical access hospitals.

Table 6. Contributing Factors to Events Occurring in 2024 (n=39,486 Events; Green 0-5%, Yellow >5-20%, Red >20%)														
Event Type	Communication/ Team Factors	Environment	Equipment/ Devices/ Supplies	Handover/ Handoff	HIT/EHR/ CPOE/eMAR	Human Factors	Information Management	Patient/ Family Factors	Policies/ Procedures	Staff Qualifications	Supervision/ Management/ Culture	No Known Factors	Other	No Factors Reported
Airway/Respiratory Care Management (n=44)	6.8%	4.6%	9.1%	0.0%	0.0%	20.5%	4.6%	31.8%	11.4%	15.9%	2.3%	0.0%	29.6%	27.3%
Anesthesia (n=32)	12.5%	9.4%	3.1%	3.1%	0.0%	3.1%	0.0%	3.1%	6.3%	15.6%	6.3%	12.5%	12.5%	37.5%
Blood or Blood Product (n=1,453)	4.6%	1.2%	0.8%	1.1%	5.4%	21.0%	39.3%	0.5%	10.1%	39.5%	9.2%	11.4%	7.1%	5.0%
Care Coordination (n=232)	29.3%	1.3%	0.9%	4.7%	0.4%	0.9%	0.0%	0.0%	6.5%	1.3%	4.7%	0.0%	3.5%	67.2%
Care Management Language/ Interpreter (n=365)	37.5%	0.3%	21.4%	0.8%	0.6%	1.6%	0.8%	0.0%	3.0%	23.8%	6.6%	31.2%	0.8%	2.7%
Care Management Not Specified (n=5,235)	17.4%	2.5%	2.5%	6.3%	4.5%	28.6%	11.4%	3.0%	16.8%	44.2%	10.6%	9.0%	3.9%	4.6%
Care Management Failure/Delay (n=1,173)	41.4%	2.3%	2.9%	8.5%	1.9%	14.9%	3.1%	3.9%	21.7%	23.6%	12.4%	5.3%	17.6%	0.5%
Device or Medical/Surgical Supply (n=1,244)	4.3%	2.7%	40.3%	0.4%	1.2%	16.9%	0.7%	3.7%	7.7%	27.3%	4.7%	12.0%	7.4%	5.4%
Diagnostic Error (n=2,718)	16.6%	3.1%	3.8%	3.8%	3.2%	24.1%	9.9%	0.6%	11.0%	47.9%	17.8%	6.1%	1.1%	11.7%
Diagnostic Imaging (n=56)	26.8%	1.8%	5.4%	0.0%	0.0%	1.8%	0.0%	14.3%	21.4%	3.6%	3.6%	1.8%	35.7%	3.6%
Environmental (n=99)	6.1%	2.0%	13.1%	0.0%	0.0%	0.0%	0.0%	12.1%	2.0%	3.0%	0.0%	3.0%	38.4%	30.3%
Fall (n=1,885)	12.4%	11.1%	9.4%	2.1%	0.5%	0.9%	0.0%	30.7%	19.6%	22.1%	6.8%	0.9%	6.6%	5.6%
Healthcare-Associated Infection (n=740)	9.9%	1.8%	4.1%	4.6%	0.4%	24.5%	3.1%	5.0%	20.3%	40.8%	15.7%	6.1%	18.7%	4.1%
Lab/Specimen (n=3,874)	5.9%	1.6%	2.0%	1.0%	2.6%	28.3%	10.4%	0.3%	15.2%	47.1%	11.9%	3.7%	12.3%	14.6%
Medication (n=5,193)	9.4%	1.9%	3.1%	12.8%	9.7%	43.7%	0.0%	8.1%	9.7%	10.5%	2.0%	0.04%	6.6%	10.2%
Other (n=4,061)	17.0%	3.0%	5.1%	4.1%	2.1%	18.9%	4.0%	6.1%	14.0%	33.4%	8.2%	17.5%	3.1%	4.6%
Patient ID/Documentation/ Consent (n=1,217)	6.4%	1.1%	0.3%	1.6%	6.2%	36.1%	37.5%	2.1%	44.0%	75.9%	6.5%	4.4%	2.9%	1.1%
Patient Protection AMA/LWS/Elopement (n=2,662)	1.7%	3.8%	0.2%	0.2%	0.0%	1.0%	0.3%	89.1%	6.7%	2.1%	1.6%	2.4%	1.0%	1.2%
Patient Protection (Other) (n=3,384)	3.6%	6.0%	1.3%	0.9%	0.1%	5.6%	0.5%	65.0%	4.5%	26.5%	1.9%	3.0%	20.3%	2.8%
Patient Protection (Suicide/Attempted Suicide) (n=48)	0.0%	10.4%	4.2%	0.0%	2.1%	6.3%	0.0%	64.6%	10.4%	10.4%	0.0%	22.9%	16.7%	2.1%
Perinatal (n=1,061)	10.3%	30.4%	2.3%	2.9%	1.4%	10.8%	3.1%	1.7%	13.1%	17.3%	5.7%	21.8%	8.7%	4.6%
Pressure Injury (n=311)	7.7%	2.9%	3.9%	3.2%	2.3%	39.2%	12.9%	16.7%	19.3%	54.3%	14.2%	7.1%	10.9%	4.8%
Skin/Tissue (Non-Pressure Injury) (n=352)	8.0%	3.70%	6.0%	4.0%	1.4%	29.0%	6.0%	13.4%	17.9%	31.8%	4.6%	14.8%	9.1%	8.8%
Surgery (Including Invasive Procedures) (n=1,739)	17.2%	3.20%	8.0%	3.3%	2.2%	23.6%	5.4%	1.6%	15.8%	42.0%	8.3%	10.5%	6.4%	4.3%
No Event Type Reported (n=308)	4.2%	5.20%	2.0%	2.3%	0.3%	14.3%	2.6%	26.6%	5.5%	36.4%	2.3%	16.2%	33.4%	3.6%

Table 7. Most Reported Contributing Factors for Event Types by Setting

	Ambulatory Care Practices		Community Hospitals		Critical Access Hospitals		Large Hospitals and Medical Centers		Specialty Hospitals	
Events	n	Top 3 Contributing Factors	n	Top 3 Contributing Factors	n	Top 3 Contributing Factors	n	Top 3 Contributing Factors	n	Top 3 Contributing Factors
Blood or Blood Product	8	Staff Qualifications (75%) Human Factors (63%) Supervision/Mgmt/Culture (25%)	275	Staff Qualifications (47%) Human Factors (27%) Information Mgmt (23%)	8	Staff Qualifications (50%) Human Factors (50%) Policies/Procedures (25%)	1,151	Information Mgmt (44%) Staff Qualifications (38%) Human Factors (19%)	11	Staff Qualifications (27%) Information Mgmt (27%) Human Factors (18%)
Care Management Failure/Delay	79	Staff Qualifications (65%) Human Factors (42%) Comm/Team Factors (22%)	231	Staff Qualifications (39%) Comm/Team Factors (30%) Human Factors (23%)	19	Staff Qualifications (47%) Human Factors (32%) Comm/Team Factors (21%)	822	Comm/Team Factors (48%) Policies/Procedures (23%) Staff Qualifications (14%)	21	Staff Qualifications (48%) Human Factors (33%) Supervision/Mgmt/Culture (24%)
Care Management Not Specified	678	Staff Qualifications (67%) Human Factors (46%) Policies/Procedures (17%)	1,844	Staff Qualifications (43%) Human Factors (26%) Policies/Procedures (19%)	214	Staff Qualifications (61%) Human Factors (40%) Supervision/Mgmt/Culture (10%)	2,202	Staff Qualifications (40%) Human Factors (26%) Comm/Team Factors (23%)	297	Staff Qualifications (23%) Human Factors (17%) Information Mgmt (17%)
Device or Medical/ Surgical Supply	74	Equip/Devices/Supplies (47%) Staff Qualifications (37%) Human Factors (23%)	607	Equip/Supplies/Devices (38%) Staff Qualifications (30%) Human Factors (19%)	64	Equip/Devices/Supplies (52%) Staff Qualifications (25%) Human Factors (17%)	452	Equip/Devices/Supplies (39%) Staff Qualifications (24%) Human Factors (12%)	46	Equip/Devices/Supplies (54%) Human Factors (17%) Staff Qualifications (17%)
Diagnostic Error	345	Staff Qualifications (54%) Human Factors (39%) Information Mgmt (17%)	777	Staff Qualifications (46%) Human Factors (23%) Comm/Team Factors (21%)	223	Staff Qualifications (52%) Human Factors (27%) Comm/Team Factors (22%)	1,331	Staff Qualifications (47%) Supervision/Mgmt/Culture (24%) Human Factors (20%)	42	Staff Qualifications (33%) Comm/Team Factors (26%) Human Factors (26%)
Fall	127	Staff Qualifications (26%) Comm/Team Factors (20%) Environment (17%)	558	Patient/Family Factors (24%) Policies/Procedures 21%) Staff Qualifications (20%)	130	Environment (26%) Staff Qualifications (18%) Patient/Family Factors (17%)	956	Patient/Family Factors (39%) Policies/Procedures (23%) Staff Qualifications (23%)	112	Patient/Family Factors (32%) Staff Qualifications (27%) Environment (15%)
Healthcare-Associated Infection	22	Staff Qualifications (55%) Human Factors (46%) Policies/Procedures (18%)	188	Staff Qualifications (58%) Human Factors (39%) Policies/Procedures (17%)	68	Patient/Family Factors (35%) Staff Qualifications (29%) Human Factors (19%)	450	Staff Qualifications (35%) Policies/Procedures (24%) Human Factors (18%)	12	Staff Qualifications (33%) Human Factors (25%) Supervision/Mgmt/Culture (17%)
Lab/Specimen	603	Staff Qualifications (72%) Human Factors (50%) Policies/Procedures (20%)	1,209	Staff Qualifications (44%) Human Factors (23%) Policies/Procedures (13%)	171	Staff Qualifications (72%) Human Factors (43%) Information Mgmt (12%)	1,853	Staff Qualifications (39%) Human Factors (24%) Policies/Procedures (16%)	33	Staff Qualifications (64%) Human Factors (33%) Policies/Procedures (12%)
Medication	353	Human Factors (57%) Policies/Procedures (30%) Comm/Team Factors (19%)	2,071	Human Factors (44%) HIT/EHR/CPOE/eMAR (13%) Handover/Handoff (12%)	443	Human Factors (57%) Handover/Handoff (17%) HIT/EHR/CPOE/eMAR (9%)	2,109	Human Factors (38%) Staff Qualifications (14%) Handover/Handoff (11%)	217	Human Factors (46%) Handover/Handoff (25%) Comm/Team Factors (21%)
Patient ID/ Documentation/ Consent	284	Staff Qualifications (82%) Human Factors (73%) Information Mgmt (15%)	203	Staff Qualifications (61%) Human Factors (49%) Policies/Procedures (31%)	41	Staff Qualifications (78%) Human Factors (66%) Supervision/Mgmt/Culture (15%)	670	Staff Qualifications (79%) Policies/Procedures (65%) Information Mgmt (58%)	19	Staff Qualifications (42%) Comm/Team Factors (37%) Human Factors (32%)
Patient Protection (Other)	156	Patient/Family Factors (70%) Comm/Team Factors (10%) Staff Qualifications (6%)	602	Patient/Family Factors (65%) Staff Qualifications (11%) Policies/Procedures (6%)	12	Patient/Family Factors (75%) Staff Qualifications (17%) Comm/Team Factors (8%) Policies/Procedures (8%) Supervision/Mgmt/Culture (8%)	2,288	Patient/Family Factors (64%) Staff Qualifications (33%) Environment (8%)	325	Patient/Family Factors (70%) Staff Qualifications (20%) Human Factors (15%)
Patient Protection (AMA/LWS/ Elopement)	30	Patient/Family Factors (77%) Policies/Procedures (10%) Supervision/Mgmt/Culture (7%)	1,602	Patient/Family Factors (96%) Environment (6%) Policies/Procedures (2%)	102	Patient/Family Factors (76%) Supervision/Mgmt/Culture (3%) Staff Qualifications (2%) Comm/Team Factors (2%)	732	Patient/Family Factors (79%) Policies/Procedures (15%) Staff Qualifications (6%)	196	Patient/Family Factors (81%) Policies/Procedures (15%) Human Factors (2%) Staff Qualifications (2%)
Perinatal	11	Comm/Team Factors (64%) Handover/Handoff (18%) Human Factors (18%)	401	Environment (29%) Staff Qualifications (18%) Comm/Team Factors (15%)	14	Policies/Procedures (14%) Human Factors (7%) Staff Qualifications (7%) Supervision/Mgmt/Culture (7%)	635	Environment (32%) Staff Qualifications (17%) Policies/Procedures (12%)	0	
Surgery (Including Invasive Procedures)	31	Staff Qualifications (55%) Human Factors (32%) Policies/Procedures (13%)	786	Staff Qualifications (50%) Human Factors (27%) Comm/Team Factors (16%)	24	Staff Qualifications (54%) Human Factors (38%) Policies/Procedures (25%)	851	Staff Qualifications (34%) Human Factors (20%) Comm/Team Factors (19%)	47	Staff Qualifications (40%) Human Factors (26%) Policies/Procedures (21%)

Note: The contributing factors "Other", "No Known Factors", and "No Factors Reported" were excluded from the top contributing factors due to nondescript reporting.

Abbreviations: AMA, Against Medical Advice; Comm, Communication; CPOE, Computerized Provider Order Entry; eMAR, Electronic Medication Administration Record; EHR, Electronic Health Record; Equip, Equipment; HIT, Health Information Technology; LWS, Left Without Being Seen; Mgmt, Management.

APPENDIX

Table S1. Event Types Definitions and Sources		
NCPS Hybrid Event Types	Definition	Source
Airway/Respiratory Care Management (not associated with anesthesia)	An airway/respiratory care management event is associated with maintenance of a patent airway and respiratory function while not under anesthesia.	NCPS Members[1]
Anesthesia	An anesthesia event is associated with the administration of anesthesia or sedation.	AHRQ Common Formats[2]
Blood or Blood Product	A blood or blood product event or unsafe condition involves the processing and/or administration of blood or a blood product.	AHRQ Common Formats[2]
Care Coordination	A care coordination event is associated with actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location.	NCPS Members[1]
Care Management Failure/Delay	Failure/delayed response to change in patient's condition	NCPS Members[1]
Care Management Language/Interpreter	Failure/delayed response due to language barrier or problems with interpretation.	NCPS Members[1]
Care Management Not Otherwise Specified	A care management event - not otherwise specified is associated with patient care/monitoring that is not included in an existing category.	NQF and NCPS Members[1,3]
Device or Medical/Surgical Supply	A device or supply event or Unsafe condition involves a defect, failure, or incorrect use of a device.	AHRQ Common Formats[2]
Diagnostic Error	Diagnostic Safety Event: One or both of the following occurred, whether or not the patient was harmed: (1) Delayed, Wrong or Missed Diagnosis: There were one or more missed opportunities to pursue or identify an accurate and timely diagnosis (or other explanation) of the patient's health problem(s) based on the information that existed at the time. (2) Diagnosis Not Communicated to Patient: An accurate diagnosis (or other explanation) of the patient's health problem(s) was available, but it was not communicated to the patient (includes patient's representative or family as applicable).	AHRQ Common Formats[2]
Diagnostic Imaging	A diagnostic imaging event is associated with actions related to ordering, obtaining, processing, and communicating results to other providers and to patients of a diagnostic image.	NQF and NCPS Members[1,3]
Environmental	An environmental event is associated with the physical environment in which care is delivered and includes (1) electric shock; (2) systems designated for oxygen or other gas to be delivered to a patient contains no gas, the wrong gas, or are contaminated by toxic substances; (3) a burn incurred from any source in the course of a patient care process; and (4) use of physical restraints or bedrails.	NQF and NCPS Members[1,3]
Fall	A fall is a sudden, unintended, descent of a patient's body to the ground or other object (e.g., onto a bed, chair, or bedside mat) that can be assisted or unassisted.	AHRQ Common Formats[2]
Healthcare-Associated Infection	A healthcare-associated infection (HAI) is a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s). It is acquired during the course of receiving treatment for other conditions within a healthcare setting, with no evidence that the infection was present or incubating at the time of admission (except surgical site infection (SSI), see 1.1.2.1)	NQF and NCPS Members[1,3]
Lab/Specimen	A lab specimen event is associated with actions related to ordering, obtaining, and processing specimens.	NQF and NCPS Members[1,3]
Medication	A medication event or unsafe condition involves the processing and/or administration of medications, biological products, nutritional substances, medical gases, contrast media, or radiopharmaceuticals.	AHRQ Common Formats[2]

Patient ID/Documentation/Consent	A Patient ID/Documentation/Consent event refers to any event associated with patient identification, documentation or consent.	NCPS Members[1]
Patient Protection Against Medical Advice/Left Without Being Seen/Elopement	Patient left the facility without completing care or patient was abandoned.	NQF and NCPS Members[1,3]
Patient Protection (Not Suicide/Suicide Attempt)	A patient protection event refers to loss or potential loss of a patient's safety and security that is not associated with direct patient care and includes criminal events and discharge to other than an authorized person.	NQF and NCPS Members[1,3]
Patient Protection (Other)	A patient protection event that refers to suicide, attempted suicide, and self-harm.	NQF and NCPS Members[1,3]
Perinatal	A perinatal event involves an adverse outcome occurring to the mother, fetus(es), or neonate(s) associated with either the birthing process (labor, birth, or postpartum) or an intrauterine procedure. Perinatal events include those that occur from the 20th week of gestation through 4 weeks (28 days) postpartum (up to 42 days for maternal events).	AHRQ Common Formats[2]
Pressure Injury	A pressure injury is localized damage to the skin and underlying soft tissue usually over bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, comorbidities, and condition of the soft tissue. For staging information refer to the National Pressure Ulcer Advisory Panel website at http://www.npuap.org	AHRQ Common Formats[2]
Skin/Tissue (Non-Pressure Injury)	Injury to skin or tissue not caused by pressure.	NCPS Members[1]
Surgery (Including Invasive Procedures)	A surgical event is associated with an operating room or other invasive procedure (e.g., colonoscopy, bone marrow biopsy).	AHRQ Common Formats[2]
Venous Thromboembolism	A venous thromboembolism (VTE) event comprises an objectively confirmed symptomatic deep vein thrombosis (DVT) and/or pulmonary embolism (PE). DVT refers to partial or total thrombotic occlusion of a deep vein of the lower extremity or pelvis (e.g., inferior vena cava, iliac, femoral, popliteal, tibial, gastrocnemial, soleal, or peroneal vein) or a deep vein of the upper extremity or upper thorax (e.g., internal jugular, brachiocephalic, superior vena cava, axillary, brachial, or subclavian). Symptomatic DVT is an objectively confirmed DVT that results in symptoms that include pain and/or swelling of the affected limb. PE refers to a partial or total thromboembolic occlusion of one or more pulmonary arteries that causes symptoms or death. Symptomatic PE is an objectively confirmed PE that results in symptoms or signs such as shortness of breath, pleuritic chest pain, hemoptysis, oxygen desaturation, or death. PE does not include non-thrombotic emboli (e.g., air, fat, amniotic fluid, or foreign body or material). Reported VTEs should not include those present on admission or in a patient receiving comfort care.	AHRQ Common Formats[2]
Other	Patient safety concern not included in an existing category.	NCPS Members[1]
No Event Type Reported		NCPS Members[1]

1. Definition developed by Nebraska Coalition for Patient Safety personnel. More information about the Nebraska Coalition for Patient Safety is available at: https://www.unmc.edu/publichealth/research/multidisciplinary-programs/ncps.html.
2. AHRQ Common Formats for Event Reporting – Hospital Version 2.0a. Available at: https://www.psoppc.org/common-formats/hospital-2.0. Accessed March 12, 2026.
3. National Quality Forum, Serious Reportable Events In Healthcare—2011 Update: A Consensus Report. Available at: https://digitalassets.jointcommission.org/api/public/content/4534bbaaee4f4bd280c2054765f37f4b?v=a60f8f9a. Accessed March 12, 2026.

Table S2. Definitions of Contributing Factors	
Contributing Factors	Definition
Staff Qualifications	Factors related to staff knowledge, skills, training, experience, and/or performance.
Human Factors	Factors related to the errors, lapses, or adverse events arising from human performance, behavior, or cognition.
Patient/Family Factors	Factors related to patient or family characteristics, behaviors, or health conditions.
Policies/Procedures	Factors related to the existence of or adherence to existing policies or operating procedures.
Communication/Team Factors	Factors related to issues or breakdowns in the communication of patient information or coordination among providers, patients, and patient's families.
Supervision/Management/Culture	Factors related to organizational culture, supervision/leadership, and/or staffing issues.
Information Management	Factors related to the access, accuracy, or management of patient information/clinical data.
Equipment/Devices/Supplies	Factors related to the transfer of the availability, functionality, design or use of medical equipment, devices, or supplies.
Handover/Handoff	Factors related to the transfer of the patient or patient information between providers or care teams.
Environment	Factors related to a patient's physical surroundings, infrastructure, or environmental conditions.
HIT/EHR/CPOE/eMAR	Factors related to the design or malfunction of health information technology systems.
Other	Factors not captured by other categories.
No Known Factors	Factors where no contributing factors could be identified.
No Factors Reported	No associated factors were reported for the event.

Abbreviations: CPOE, Computerized Provider Order Entry; eMAR, Electronic Medication Administration Record; EHR, Electronic Health Record; HIT, Health Information Technology.
Note: Definitions for contributing factors were developed by the NCPS research team.

Table S3. Severity Level Definitions	
Severity Levels	NCCMERP Error Severity Scale Definition
Did not reach patient and did not result in harm	A. Circumstances or events that have the capacity to cause error B. An error occurred but did not reach the patient
Reached patient and did not result in harm	C. An error occurred that reached the patient but did not cause patient harm D. An error occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient, and/or required intervention to preclude harm
Reached patient and resulted in harm	E. An error occurred that may have contributed to or resulted in temporary harm to the patient and required intervention F. An error occurred that may have contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization G. An error occurred that may have contributed to or resulted in permanent patient harm H. An error occurred that required intervention necessary to sustain life I. An error occurred that resulted in the patient's death
No severity level reported	The event type was missing an associated severity level.

Abbreviations: NCCMERP, National Coordinating Council for Medication Error Reporting and Prevention.
Source: National Coordinating Council for Medication Error Reporting and Prevention Index for Categorizing Medication Errors. Available at: https://www.nccmerp.org/sites/default/files/index-bw-2022.pdf. Accessed March 12, 2026.