PSO ANNUAL REPORT

BASED ON DATA COLLECTED IN 2018

The Center for Patient Safety (CPS) provides this annual report as a service to the healthcare industry.

Center for Patient Safety

About The Center for Patient Safety

The **Center for Patient Safety (CPS)** is certified as a federally-designated **Patient Safety Organization (PSO)** in compliance with the provisions of the federal **Patient Safety and Quality Improvement Act of 2005 (PSQIA)**.

CPS provides PSO services across the continuum of health care and is positioned to assist new and current participants in gaining valuable learning and obtaining the federal protections that are available within the PSQIA – but most importantly, to **reduce preventable harm**. CPS works with health systems, emergency medical services (EMS), long term care, ambulatory surgery centers (ASC) and home-based care. CPS has two data collection platforms, one of which collects events using common data formats from health systems including long term care, home-based care, medical offices, and hospital. The second data collection platform uses a common data set from EMS, both ground and air.

CPS was one of the first federally designated PSOs in 2008. Today, we are one of the largest, most active and diverse PSOs in the country.

Important Note About the Data

The data contained in this report is from the CPS' PSO database. Licensed healthcare providers may participate in a PSO in order to share information, learn from the sharing, gain federal protection and ultimately reduce mistakes and patient harm. PSO participation is voluntary and organizations may choose to submit only the more adverse events to share lessons learned. The event types and their severities, along with the additional information contained in this report, are de-identified as required by the PSQIA.

The goal of this report is to present an overview of the findings within all of the events reported to the CPS PSO, to learn how and why events are occurring, and inform providers and others about how to prevent future occurrences.

This report will highlight some of the predominant events that were reported within the dates of January 1, 2018 through December 31, 2018.

Five Reasons to Participate with a Patient Safety Organization

1. Participate in sharing and learning aimed at preventing medical errors and patient harm.
2. Collaborate with other providers to identify medical error prevention strategies.
3. Gain the support and expertise of PSOs to enhance quality and safety processes and practices.
4. Gain federal protections that fill the gaps left from peer review and attorney-client privilege protections.
5. Enhance learning and prevention through collaboration and voluntary reporting outside of regulatory mandates.

There is a positive culture trend occurring in the healthcare industry that is resulting in growing transparency and contributing to reducing preventable harm. The Center for Patient Safety (CPS) continues to support this paradigm shift by educating on the value of open communication and shared accountability through:

- Manager and frontline Just Culture Training
- Train-the-Trainer Second Victim Workshops
- Online Resource Catalog
- Safety Culture Surveying and Improvement Planning
- Patient Safety Program Development Boot Camps
- Supporting All Disciplines with Transitions of Care

To date, participating organizations with CPS have reported more than 100,000 events. As the culture shift continues, CPS anticipates reporting will increase along with participation in the PSOs (Patient Safety Organizations).

The rule supporting PSOs has now been around for 10 years with popularity continuing to increase. Of the more than 80 PSOs in the country currently, each is slightly different and has different services, but their goals are the same:

1. identify what medical errors are occurring,
2. determine why they are occurring, and
3. share the learnings with others to prevent them from occurring again.

PSOs can do this in an aggregate way because of the federal designation they are granted under the Agency for Healthcare Research and Quality (AHRQ). Strict criteria are used to identify eligible organizations to provide support for the analysis and learning that comes from reviewing unexpected errors that occur during the delivery of healthcare services.

The Patient Safety Act (2005) and the Patient Safety Rule (2008) provide a structure for PSOs while legislation provides confidentiality and privilege protections (inability to introduce the protected information in a legal proceeding), when certain requirements are met. The program intentionally differentiates PSO work from most regulatory and mandatory reporting programs.

Aggregated information, like what is included in reports like this one, are developed by PSO analysts that dive in and access rare and uncommon events to those that reflect (or reveal) more pervasive trends.

Any licensed provider can participate with a PSO and receive the protections, including but not limited to, emergency medical services (EMS), nursing homes, home health and hospice, pharmacies, hospitals, health systems, medical offices, and ambulatory surgery centers (ASC).

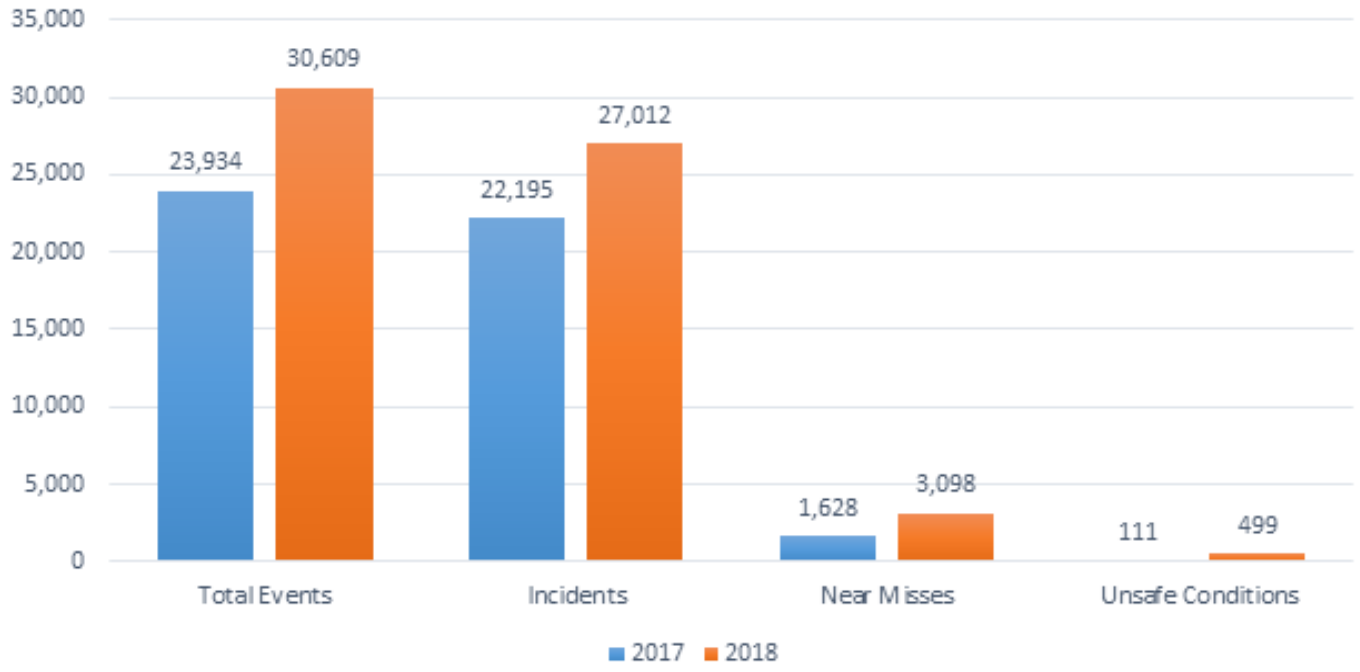
CPS PSO Health System Data Statistical Review

CPS' PSO received reports on 30,609 incidents, near misses and unsafe conditions from 79 organizations in 2018. Twelve percent of reported events were near misses or unsafe conditions, meaning an error or mistake was about to happen or could have happened but was caught before it reached the patient. These types of events provide excellent learning opportunities to help prevent adverse events going forward.

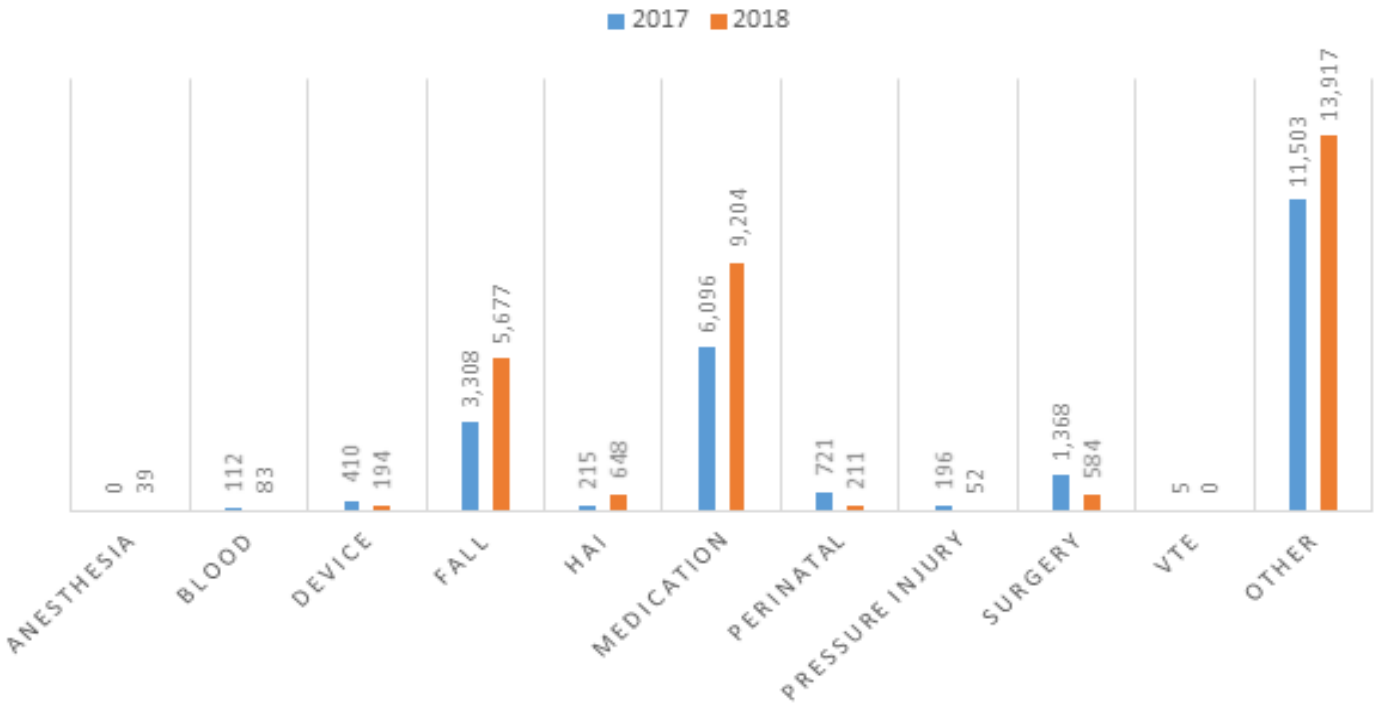
Patterns that remain consistent from the 2017 report include the order of most frequently reported events. Medications, falls and uncategorized events in the 'other' category are the most frequently reported. However, in 2018, healthcare-acquired infections was the fourth most frequently reported, taking the place of surgery/anesthesia. Of note is the variation in some reporting formats. In 2018, AHRQ revised the common data format forms to make the reporting process more efficient. As a result, Anesthesia and Surgery events, once combined, have been separated. The following pages provide statistics, case examples, resources and discussion points for the most frequently reported events.

- Events reported from 79 different organizations
- 30,609 reports
- 88% reached the patient
- 10% were near misses
- 2% were unsafe conditions
- 24% caused harm
- 4% resulted in death
- 1% resulted in severe harm
- 12% resulted in moderate harm
- 8% resulted in mild harm
- 66% were reported with no harm
- 10% unknown harm or no harm level reported

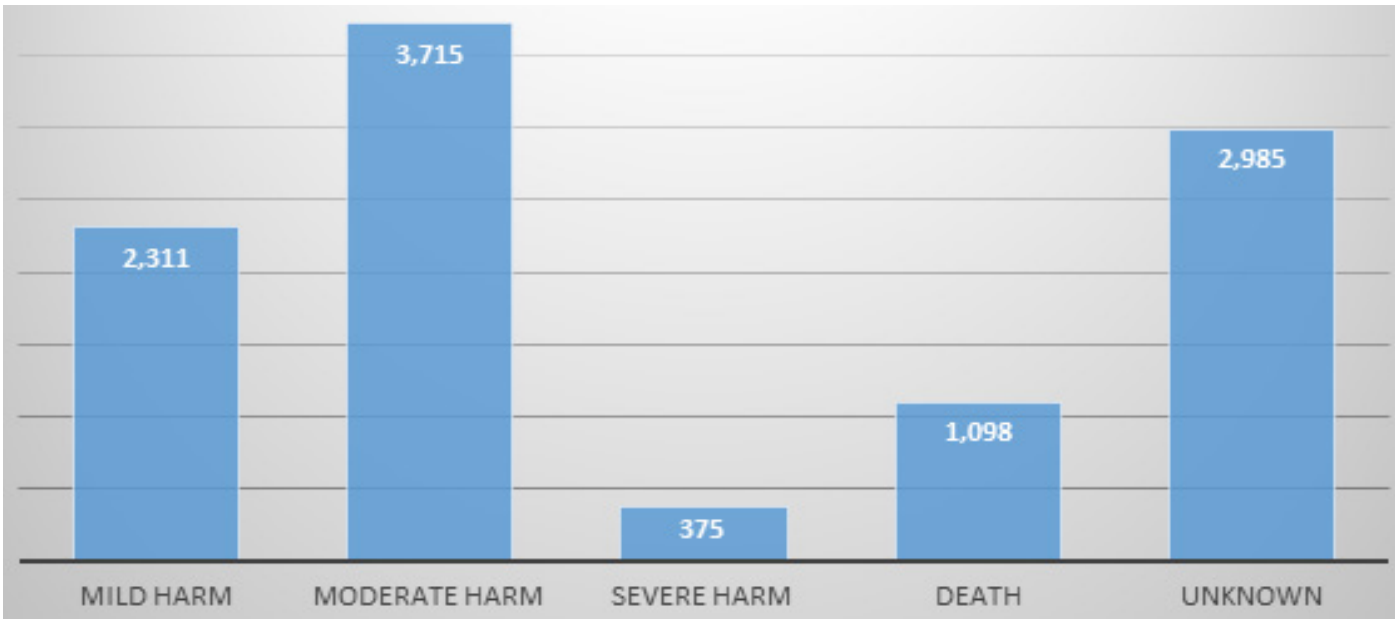
2017-2018 EVENTS



CATEGORY OF EVENTS



CATEGORY OF EVENTS



'Other' Category

The **'Other'** category consists of events which don't fit into the AHRQ Common Data Format categories. The 'Other' category includes behavioral health events, patients leaving without being seen (LWBS) or against medical advice (AMA), diagnostic errors, incidents of violence/verbal abuse toward healthcare providers and other uncategorized events.

- **13917 events**
- **45% of total events reported in 2018**
- **95% reached the patient**
- **3% near misses**
- **2% unsafe conditions**
- **43% resulted in patient harm**

AMA continues to be a category that remains challenging. The data continues to show that long wait times, long lengths of stay and the desire for pain medication/pain management are major contributing factors to patients leaving AMA or without being seen. Societal factors such as lack of primary care physician and lack of coordination of care also play a role. Other contributing factors include workflow and staffing to the point that staff feel rushed and unable to spend adequate time with patients and a culture that prioritizes moving patients through the system over identifying health care needs and connecting with the patient.

Behavioral health is an area gaining much national attention. In April of 2018, The Joint Commission (TJC) released an alert regarding violence against healthcare workers. CPS data reflects TJC's sentinel alert with reports of health care workers, primarily nurses, being spit on, kicked, hit and verbally abused. Leadership, communication and support for the healthcare worker are mandatory components for dealing with these issues.

Of the 1,065 deaths in the 'Other' category 147 were due to suicide/overdose. Many of these deaths were a result of opioids mixed with illegal street drugs. Other reports include patients seen for possible overdose or suicidal ideation which resulted in discharge from the emergency room/hospital only to lead to overdose or committing suicide within 24-48 hours.

- **Death 1065**
- **Severe harm 316**
- **Moderate harm 3291**
- **Mild harm 1340**
- **No harm 5752**
- **Unknown harm 2153**

Examples Include:

- Patient admitted to psychiatric unit for drug addiction. Discharged home in custody of significant other, who was concerned patient was not truly recovered and would fall back into addiction. Next day, it was reported patient had overdosed within 12 hours of being home.
- Emergency room was informed that a patient seen earlier in the week for suicidal ideation was brought to another emergency room by family members the next day, dead on arrival, after having slit throat.
- Patient brought in via law enforcement for suspected intoxication. Patient became belligerent, verbally abusive and physically assaulted emergency room nurse. Patient put in four-point restraints to protect staff.
- Patient came to emergency room, complaining of a headache and low-grade fever. When called to be taken back, patient was no longer in the waiting room. Patient came back the next day with fever of 102, shortness of breath, admitted and worked up for sepsis.

Lessons Learned:

Key recommendations to address the risks that can result from AMA-related reports include coordinating and communicating between staff and the patient to ensure the patient understands wait time and what the length of stay may be and why. If the patient is adamant about leaving against medical advice, continue to communicate risks associated with leaving as well as resources for care outside the hospital. If the patient has a primary care physician (PCP), ensure that the PCP is informed of the patient leaving AMA and why.

Violence against healthcare workers is a very serious issue because the rates of violence are higher in healthcare than in any other professional arena. According to Dr. Tom Mihaljevic, president and CEO of the Cleveland Clinic, it is an epidemic that nobody speaks about. It is vital that healthcare organizations address this issue in a comprehensive and systematic fashion. Leadership and communication are vital if healthcare providers are going to be protected and each organization must assess what policies and processes fit best within their organization.

OSHA reported that "workers in a health care setting are four times more likely to be victimized than workers in private industry. Furthermore, the National Crime Victimization Survey shows that workers in a health care setting have a 20% higher risk of experiencing workplace violence than workers in other settings." (http://bulletin.facs.org/2018/07/joint-commission-issues-alert-on-violence-prevention-in-the-health-care-workplace/)

Suicide is another high priority issue facing many emergency rooms across the country. Identifying patients at risk for suicide and ensuring that organizations are utilizing suicide risk assessments on a regular basis are extremely important. The Zero Suicide campaign provides many resources to help organizations develop policies and processes to ensure appropriate assessment of patients.

>> RESOURCES:

Suicide Prevention Resources

General Suicide Reduction Tools

Zero Suicide

Discharge Against Medical Advice

When Patients Leave Against Medical Advice

Violence Against Healthcare Workers

Medication

Medication events continue to be the most frequently reported type of event, outside of the 'Other' category. These events include errors associated with prescribing, dispensing, administering and monitoring.

- Prescribing errors include orders intended for another patient, duplications of therapy, drug interactions and medications ordered when there are known allergies. Prescribing errors also include order entry errors within an electronic health record.
- Dispensing errors include mislabeling of medications and medication misplaced in unit-based dispensing systems.
- Administering errors include wrong patient, wrong drug, wrong dose, omitted dose and wrong time. These include events associated with entering weights as pounds instead of kilograms.
- Monitoring errors include lack of nursing assessment and no lab monitoring. Many anti-coagulant events and hypo-glycemic events were associated with a lack of lab monitoring.

High risk medications such as opioids, anti-coagulants, hypoglycemic agents and IV medications are cited most often in reported events with the first three making up over a quarter of the reported medication events. Nine of the eleven deaths in the medication category were related in part to overdoses involving these high risk medications.

+ **9204 events**
+ **30% of total events reported in 2018**
+ **70% reached the patient**
+ **27% near misses**
+ **3% unsafe conditions**
+ **4% resulted in patient harm**

Transitional care issues, such as medication reconciliation in the home health environment, skilled nursing facilities and medical offices are reported with increasing frequency. In 2015, five percent of events reported were associated with transitional care issues; In 2018, almost ten percent of medication events have some component of transitional care associated with them. These events include medication reconciliation errors and inaccurate dosages filled by community pharmacies.

+ **Death 11**
+ **Severe harm 15**
+ **Moderate harm 120**
+ **Mild harm 239**
+ **No harm 8391**
+ **Unknown 428**

Opioids continue to be a struggle in healthcare. While many reported events consist of documentation errors, such as not recording when a controlled medication is wasted or when a pain medication is administered, there were also several events reported that pertained to dosage errors and patient non-compliance/drug-seeking behavior. Of note in the opioid category, use of Narcan was reported in 48 opioid events.

Examples Include:

- A fentanyl patch was applied to a patient and ninety minutes later the patient was difficult to arouse with oxygen saturation on room air at 82%. Sternal rub was performed to arouse the patient with oxygen saturation improving to 95%. The nurse noted the fentanyl patch was not where it had been placed and the patient ended up admitting they had chewed up the fentanyl patch.
- A patient was prescribed Hydrocodone 5/300 mg upon discharge from the hospital, but instead was given 10/300mg. When the patient got home and opened the bottle he noted the medication looked different. The family called the pharmacy explaining the situation. The pharmacist noticed the error and the correct medication was delivered to the patient.
- Patient was prescribed Coumadin during hospital admission and discharged home on it. The patient was told to take 5mg daily and follow up with lab in 5 days to evaluate dosage. Patient didn't understand the importance of monitoring labs while on coumadin and came into ER bleeding with an elevated PT/PTT one week post discharge.
- Elderly patient over-sedated with hydromorphone for procedure resulting in hypercapnic, hypoxemic respiratory failure. Narcan administered repeatedly. Per physician order on chart, patient was a "do not resuscitate". Patient expired.
- Adverse drug reaction possibly contributing to hospital admission. Patient on hemodialysis prescribed two mediations for hepatitis: tenofovir and entecavir, which were dosed and being taken/administered three times weekly. The recommended dose for both these medications for hemodialysis patients is once weekly. Patient exhibiting signs of toxicity from at least one of the medications. Doses were held and later adjusted to correct dosing.

Lessons Learned:

High risk medications are a predominant cause of death and serious harm. And an underlying cause of death and serious harm with medication is miscommunication, poor documentation, order entry errors and over-riding alerts.

Inadequate and inaccurate communication is a key cause of medication errors occurring most often:

- during shift change,
- as a result of fragmented documentation processes,
- because of a combination of paper and electronic documentation systems,
- within busy units, and
- due to communication barriers. Consider evaluating a patient's health literacy and the health literacy of any caregivers involved with taking care of the patient.

The transition of the patient across the care continuum highlights the importance of communication processes with community healthcare providers. The events reported not only demonstrate the importance of communication between providers, but also with the patient. Another factor important for healthcare providers to understand is the limitations/financial impact a prescribed treatment may have on the patient and their family. Overall, medication errors are consistently associated with communication failures, both verbal and written and with other healthcare providers and patients.

>> RESOURCES:

Medication Errors

CPS Safety Alert/Watch – Look Alike Sound Alike Medications

Reducing the Risk of Using Medication Abbreviations, A Reminder from ECRI

CDC Opioid Basics

Understanding the Opioid Epidemic

Medication Reconciliation

Falls

Despite the multitude of resources and fall prevention toolkits available, **falls** continue to be a high priority safety concern. According to The Joint Commission (TJC), falls continue to be one of the most frequently reported sentinel events. In 2017, falls were the second most reported sentinel event and, in 2018, falls were tied with unintended retention of a foreign body as the most reported sentinel event. CPS had 5,677 falls reported in 2018, making it the second most reported event (excluding the 'Other' category) behind medication.

+ **Death 7**
+ **Severe harm 9**
+ **Moderate harm 233**
+ **Mild harm 458**
+ **No harm 4858**

The frequency of reported falls is concerning for two reasons:

1. Most falls are an avoidable injury to the patient.
2. Financial risk is imposed on the facility due to increased lengths of stay and the costs to treat any injury resulting from the fall.

+ **5677 events**
+ **19% of total events reported in 2018**
+ **99% reached the patient**
+ **12% caused known harm**
+ **2% Unknown harm level**

Examples of falls reported to the CPS PSO include:

- Patient not considered fall risk upon admission to hospital. Received Dilaudid for pain, utilized bathroom 20 minutes after administration of medication. Upon rising from the toilet, patient became dizzy and fell hitting head. Patient stated had not been told medication may cause dizziness or increase risk of fall.
- 80 year old post-op patient fell out of bed. Had received scheduled pain medication 45 minutes prior to fall. After the fall, nursing reported mental status changes and swelling with small amount of ecchymosis behind left ear. The patient complained of headache. A Stat CT of the head was ordered but the patient began seizing and had loss of consciousness. The patient was transferred to ICU where pupils were found to be dilated and nonresponsive and patient was non-responsive to sternal rub or painful stimuli. Patient had a DNR/DNI code status. The family was contacted and patient subsequently expired.
- Patient was given versed orally prior to surgery. Patient was sitting in the recliner and spouse was with patient. Spouse used call light 15 minutes later and nurse came to check on patient and found he had slipped out of the chair onto the floor. Golf ball size, unraised, red area noted to patient's right side of forehead. Patient awake and talking; had no complaints of pain or discomfort. Physician notified with no orders received. Patient monitored until taken back to surgery.
- Patient had appointment for allergy injections. After patient received both injections patient had a syncopal incident and fell forward while still sitting in chair. Patient was diaphoretic and pale but awake and oriented. The patient hit the ground landing on the right side of her forehead. Help was called for at that time. Patient put in reclining position in chair. Physician evaluated and suspected that patient had experienced a vasovagal episode. Patient was given an ice pack to place on her forehead and complained of nausea and "seeing shadows". Physician called ambulance and had patient transferred to the emergency room.

Lessons Learned:

Any patient admitted to the hospital automatically has an increased risk of falling. There are, however, other risk factors which should be assessed and identified:

- Medications; especially sedatives, antihistamines and pain medications
- Drug interactions; especially those that may increase the effects of sedatives and pain medications
- Age; those aged 65 and older have an increased risk of falling

- Post-op/post-procedure patients; be aware of the effects of anesthesia and sedatives
- Patients who have a history of falling
- Medical history and disease process

Other processes to improve falls include:

- Increasing awareness of the need to prevent falls
- Using falls as educational/training opportunities
- Utilizing a standardized risk assessment tool
- Communicating fall prevention activities to family members who are visiting
- Completing an RCA for all falls

Communication is also vital in preventing falls. Make certain all members of the healthcare team (housekeeping, dietary, transportation, maintenance, phlebotomy, etc) are aware of a patient's fall risk status and what measures to take to prevent a patient from falling. Include family members and caregivers as part of the fall prevention team and communicate with them on a regular basis regarding any changes to the patient's status.

>> RESOURCES:

A Collaborative Assessment of Falls in Missouri
Stop Falls

National Council on Aging Fall Prevention

AHRQ Fall Prevention Toolkit

VA National Center for Patient Safety Fall Prevention Toolkit

CDC STEADI Program

American Occupational Therapist Association Fall Prevention Toolkit

Health Care-Acquired Infections

Healthcare Acquired Infection (HAI) is an area where there has been an intense national effort to monitor and decrease the rate of HAIs. Healthcare organizations should be aware that any hospitalized patient is susceptible to contracting a HAI. However, there are certain patients who are at greater risk than others. These include:

- Children
- Patients over age 65
- Patients with compromised immune systems
- Patients with central lines
- Patients with urinary catheters

+ 648 events
+ 2% of total events reported in 2018
+ 97% reached the patient
+ 2% near misses
+ 1% unsafe conditions
+ 35% resulted in patient harm

- Ventilated patients
- Antibiotic use
- Patients who have an extended hospital stay

The Centers for Disease Control (CDC) estimates that HAIs account for an estimated 1.7 million infections and 99,000 associated deaths each year. Of these infections:

- 32% are can be identified as Catheter Associated Urinary Tract Infections (CAUTI)
- 22% are Surgical Site Infections (SSIs)
- 15% are identified as pneumonia
- 14% can be identified as Central Line Associated Blood Stream Infection (CLABSI)

+ Death 3
+ Severe harm 8
+ Moderate harm 24
• Mild harm 190
• No harm 417
• UnknowN 7

Examples submitted to CPS include:

- Patient told nurse didn't feel well, had a headache and arm hurt where blood had been drawn a couple of days earlier. Right antecubital area bruised with some swelling. Physician notified, patient administered Tylenol and ice pack for arm. Approximately eight hours later, patient stated still didn't feel well, felt clammy and like couldn't breathe. Pulse noted to be rapid and faint, patient was tachypneic, pale and diaphoretic. B/P was 82/54, respirations 34, and oxygen saturation 80%. Right antecubital appeared purple with reddish streaks heading up to shoulder and down to wrist. Labs drawn, lactic acid elevated, patient worked up for sepsis.
- Resident was observed by nurse looking 'groggy', so temperature was assessed. Resident had a 100.1°F temperature, physician was informed, and Tylenol ordered. Residents fever declined after about an hour to 98.3°F. Three hours later temperature was taken again, and it was 99.4°F. After temperature was taken resident was noticed to be shivering, spilling his drink. An early meal tray was requested.

Twenty-five minutes later, resident was observed trying to get up from his wheelchair and almost fell. Resident appeared confused and unable to feed himself. Temperature was taken again; was up to 106.1°F. Doctor was called immediately and gave orders to have resident transferred by ambulance to local hospital. At hospital, he was diagnosed as septic with infection in hardware for knee replacement.

- Patient admitted to floor from emergency. Report given noted patient had history of asthma and currently had infiltrate in lower lobe of right lung indicative of pneumonia. Upon reading chart, noted that patient also had history of MRSA and MDRO (multi-drug resistant organisms) Appropriate isolation had not been ordered for patient.

Lessons Learned:

MRSA and VRE account for 12% of reported HAI events to CPS. However, many of these patients were not put on the appropriate precautions due to a lack of communication between departments. Organizations need to evaluate communication practices and put processes in place that ensure patients diagnosed with infections are provided appropriate protected measures.

10% of reported HAI events were associated with surgical site infections (SSI). Any invasive procedure increases a patient's risk of contracting an infection. The Society for Healthcare Epidemiology of America published guidelines for the prevention of SSIs in 2014. Review and implement processes and policies designed to decrease the rate of SSIs.

12% of HAI events reference catheter associated urinary tract infections, of which several went on to cause sepsis and blood stream infections (BSI). Other infection noted included multiple events of CLABSI (4% of reported events).

>> RESOURCES:

AHRQ Health Care-Associated Infections Program

The Joint Commission Infection Prevention and Control Portal

Institute for Healthcare Improvement Measures to Prevent HAI's

Health.gov Health Care-Associated Infections

CDC Preventing Health Care-Acquired Infection

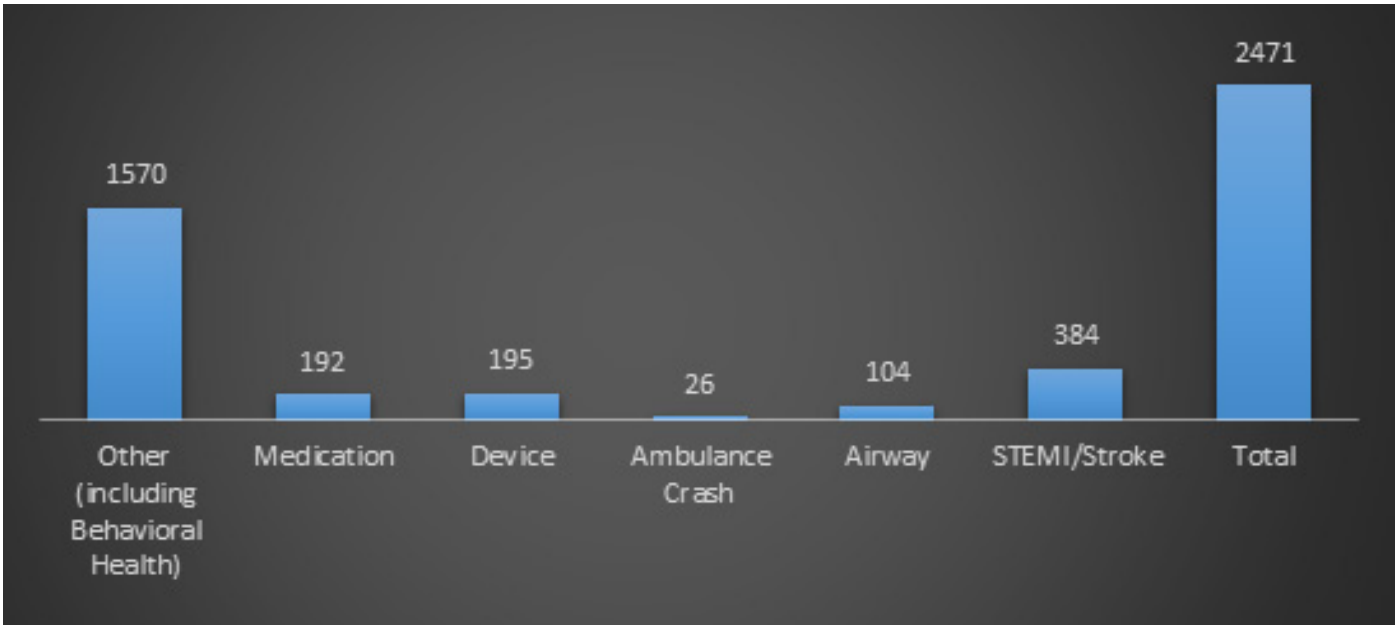
Summary

Communication is a major challenge in addressing patient safety. Of the events that reported contributing factors, over 25% indicated that communication played a role in the event. Communication also plays a vital role in the transition of care. If patients are to be managed within the community, communication between healthcare providers and patients must improve.

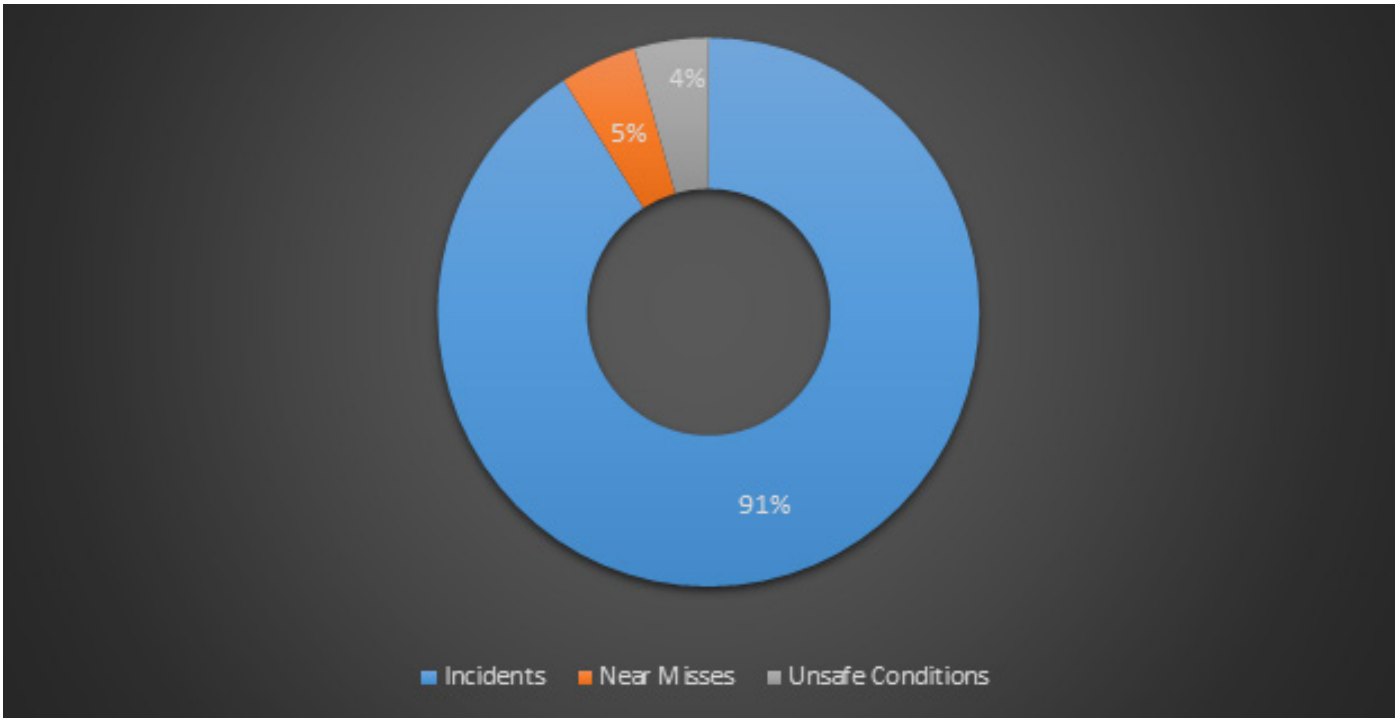
Health literacy is a problem area that commonly appeared in reported events. Scenarios include sending patients home with 20 to 30 pages of discharge paperwork; patients then not understanding or reading the paperwork; and ending up back in the emergency room two or three days after discharge. Assessing a patient's health literacy and explaining discharge instructions in language that the patient and family members/caregivers understand should be a priority. Research shows that when patients and their families/caregivers are involved with discharge planning, readmissions decrease and the risk of a patient safety event occurring also decreases.

Going forward in 2019, healthcare organizations should reach out to community health partners, such as home health organizations, medical offices, community paramedicine providers, and develop ways to communicate regarding patients at high risk of re-admission. By opening lines of communication, breaking down barriers, healthcare providers can work with their patients to prevent hospital re-admission and keep patients functioning at optimal health in their home environment.

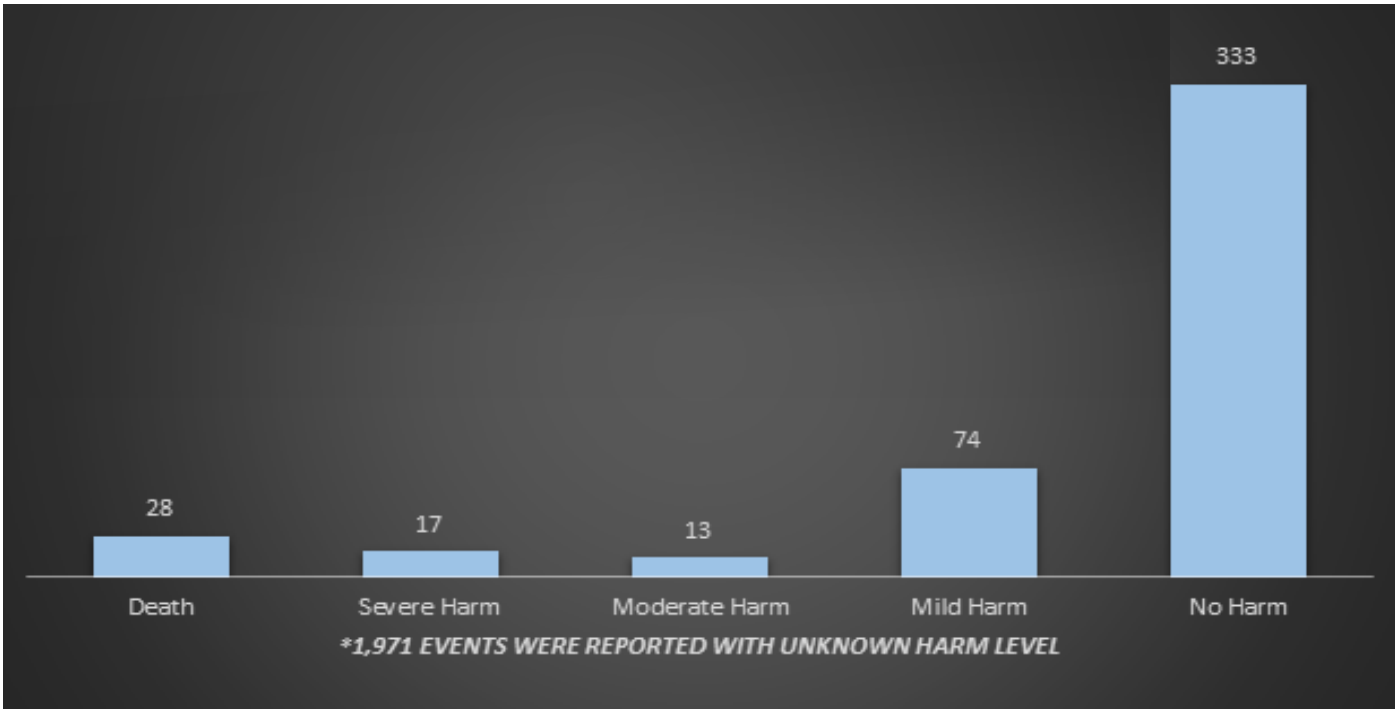
CATEGORY OF EMS EVENTS 2011-2018



TYPE OF EMS EVENTS 2011-2018



HARM LEVEL 2011-2018



EMS Patient Safety Organization

Ground and air emergency medical services (EMS) are becoming more active in quality and patient safety improvement activities. Today, 138 EMS organizations participate with CPS for PSO services. These organizations make up thousands of individual EMS air and ground bases across the United States. Approximately 53% of participating EMS organizations have contributed to the event reporting that makes up this report.

The events reported to the EMS data platform include those events specific to the EMS environment like Ambulance Crash and Airway Management. By working with CPS, these organizations evaluate their systems and processes under the protections provided by the Patient Safety Act.

CPS experienced exciting growth in EMS in 2018. In March, for Patient Safety Awareness Week, and in collaboration with Medtronic, CPS hosted a Patient Safety Forum on respiratory compromise and educated attendees on how to integrate principles of patient safety in clinical improvement efforts, including the importance of reporting patient safety events. 2018 also saw a greater number of organizations taking advantage of efficient reporting practices by using CPS for data mapping. Lastly, the EMS 360 report was developed to provide actionable items in the feedback reports of the EMS patient safety survey. CPS is continuing efforts with data vendors to build PSO reporting capabilities into pre-existing EMS data platforms to ease the reporting process.

Summary of Events

Behavioral events are most commonly reported in the database. These events are included in the "other" category but make up a large portion of Other events. These include not only calls for homicidal and suicidal ideation but also transports of patients to appropriate facilities and incidents of violence against healthcare workers. Actionable items related to this area would ensure that an organization educate their staff in the management of de-escalation and also has a way to report acts of violence committed against them by patients.

STEMI/Stroke events are among the more commonly reported events in the database. These events look at response times for time-critical diagnoses, aspirin administration for STEMI patients, and last known well time for stroke patients. Another variable analyzed was if patients were transported primarily to an appropriate facility or if the patient had a secondary transport to an appropriate facility.

Airway management events provide information about the use of endotracheal tubes and supraglottic airways. The analysis provides insight as to the cause of failed airway management. Capnography is becoming a standard among many agencies for monitoring and managing airways. Reporting airway events allows for the identification of barriers in the implementation and usage of capnography.

Ambulance crash reporting helps to identify dangerous driving conditions but also provides the needed insight to human factor influences. While there aren't many events reported, those with contributing factors allows for evaluation of fatigue and employee training.

Device events also include events involving health information technology. Device events look at issues with ventilators, stretchers, IV pumps, IO placement, etc. The events in this category can demonstrate issues with equipment that the DME provider may need to resolve. Events in this category can also show if there has been adrift in a protocol such as not utilizing all five straps on the stretcher or if additional training should be implemented on a certain device.

Medication events in EMS are very similar to those seen in the Health System platform. There are events reported of wrong doses and routes, look alike sound alike medications being stored next to each other and a lack of knowledge regarding pediatric doses. Review of these events can highlight the educational needs of agencies.

28 deaths reported in the database through 2018