A summary of healthcare event information collected in 2015 through the Center for Patient Safety PSO.
In 1999, the Institute of Medicine (IOM) released its report “To Err Is Human; Building a Safer Health System” which has since changed the face of healthcare in the United States. At that time, the majority of patient safety research and improvement projects were developed for within hospital walls. However, in January 2016, the National Patient Safety Foundation released its report, “Free From Harm,” which reviewed the progress of patient safety and gave eight recommendations for going forward:

1. Ensure leaders establish and sustain a safety culture
2. Create centralized and coordinated oversight of patient safety
3. Create a common set of safety metrics that reflect meaningful outcomes
4. Increase funding for research in patient safety and implementation science
5. Address safety across the entire care continuum
6. Support the health care workforce
7. Partner with patients and families for the safest care
8. Ensure that technology is safe and optimized to improve patient safety

In an effort to encourage organizations to address safety, the Center for Patient Safety’s (CPS) Annual PSO Report provides a high level overview of multiple areas across the healthcare continuum:

- Hospitals/Ambulatory Surgical Centers/Medical Offices
- Long-Term Care
- Emergency Medical Services
- Home Health/Hospice

CPS is a federally-designated Patient Safety Organization (PSO) in compliance with provisions of the federal Patient Safety and Quality Improvement Act of 2005 (PSQIA). PSOs support the collection, analysis, sharing and learning about the occurrence and prevention of errors and safety concerns. By reinforcing a safety culture that encourages healthcare providers to safely report and share information about vulnerabilities within the healthcare system, PSOs are pivotal in the crusade to prevent medical errors and patient harm.

CPS is positioned to assist new and current participants in gaining this invaluable learning, and obtaining the federal protections that are available within the PSQIA – but, most importantly, to prevent patient harm.

For more information about PSO and safety culture services, contact the Center for Patient Safety at info@centerforpatientsafety.org.

SIX 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. Meet the pending Accountable Care Act requirement.
6. Enhance learning and prevention through collaboration and voluntary reporting outside of regulatory mandates.

PSOs provide an opportunity to report near misses and unsafe conditions, as well as an opportunity to evaluate and learn from adverse events across healthcare organizations, differentiating the work from most regulatory and mandatory reporting programs. This provides the PSO with additional information to analyze, share and use to prevent future adverse events.
LEGAL UPDATE
By Kathy Wire, JD, MBA, CPHRM
Center for Patient Safety

The legal environment for PSO participants remains generally favorable. Most of the legal activity has occurred in two states, Florida and Kentucky. Because they have little protection for peer review and safety work under their state laws, providers in those states rely more heavily on the Patient Safety and Quality Improvement Act (PSQIA). As a result, they have more PSQIA cases. While some of the cases are troublesome, others are very reassuring. Because most of the activity on PSO protection issues takes place in discovery disputes, many of the cases that address the issues are state trial court orders and not published. They are circulated by interested attorneys.

Two Florida cases have strongly supported the protections for Patient Safety Work Product (PSWP), finding that the PSQIA supersedes Florida’s Amendment 7 and that providers can protect information that is not required to be reported to the state. (Loyless v. Flagler Hospital et al., No. CA12-2401, 7th Judicial Circuit, St. Johns County, FL and PETRASKIEWCHZ v. Laser Spine Institute et al., No. 13-CA-14394 13th Judicial Circuit, Hillsborough County FL (August 10, 2015). The latter case stressed the importance of good Patient Safety Evaluation System (PSES) policy development and documentation. There is also conflicting line of thinking in Florida, as laid out in Charles v. Southern Baptist Hosp. et al., Duyal County, Case No. 15-2012-CA-002677A (July 30, 2014): Appelate Case No. 1D15-0109 (First District). The trial court in Charles noted that Florida has a very extensive program of required investigations of adverse events and reports to the state, and held that any activity related to those requirements could not be protected PSWP, whether it was reported to the state or not. The appellate case reversed that finding and found that PSO participants could protect patient safety work as long as it is not subject to required reporting. The case is pending before the Florida Supreme Court. The national PSO community, including CPS, has filed briefs in support of the hospital’s position.

The U.S. Supreme Court still has not decided whether it will hear Tibbs, et al. v. Bunnell (2012-SC-000603-MR). (View the opinion). The issues in that case parallel the trial court’s decision in Charles.

All the cases supporting the PSQIA protections continue to emphasize the need for definitive PSES policies and evidence that the protected information was developed within the defined PSES. In an extreme example of this, an Illinois federal case found that a provider could not claim the protections, when it contracted with a PSO for several years but could not demonstrate the structure of its PSES or that the requested information was developed appropriately or reported to the PSO. Johnson v. Cook County et al., 2015 WL 5144365 (N.D. IL August 31, 2015). CPS continues to encourage all of its participants to develop strong policies, update them as needed, match their PSES activities to their policies and REPORT consistently to the PSO.
The Center offers PSO services for hospitals, ambulatory surgery centers, emergency medical services, medical offices, home health, hospice, and long-term care facilities.

Protecting:
The Center’s PSO services offer a seamless way for licensed healthcare providers to work collaboratively to learn how to reduce serious events and patient harm within the federal confidentiality and privilege protections of the federal Patient Safety and Quality Improvement Act of 2005.
- PSO Services

Learning:
The Center provides learning and education through tools, resources, webinars, training sessions, consultation, research and analysis:
- Quarterly Newsletters
- Online Resources
- Safety Alerts and Watches
- Annual Conference
- Webinars
- Patient Safety Experts
- Patient Safety Snapshots
- Annual PSO report
- Safe Tables and Huddles
- PSO Days

Preventing:
The Center promotes and encourages a strong cultural foundation that supports communication, teamwork, and leadership. This open and positive culture is a key step to improving patient safety in any environment:
- Safety Culture Survey
- Comprehensive Unit-based Safety Programs (CUSP)
- Just Culture
- Second Victims
- TeamSTEPPS
### IMPORTANT NOTE ABOUT THE DATA

The data contained in this report is from the Center for Patient Safety’s PSO database. Licensed healthcare providers may participate in a PSO in order to share information, learn from the sharing, gain federal protection to support open reporting and ultimately reduce mistakes and patient harm. PSO participation is voluntary and organizations may choose which events to report. Some report every event, others just those that they believe will support broader safety and learning. The data in this report are deidentified as required by the PSQIA.

The goal of this report is to present an overview of findings within all of the events reported to the CPS PSO. Through this sharing, CPS wants to inform the full healthcare community about how to improve safety for all who depend on us.

### TO LEARN MORE

Interested in learning more about the Center for Patient Safety, Patient Safety Organizations, or details within this report? Visit www.centerforpatientsafety.org, call our office 888.935.8272, or email info@centerforpatientsafety.org.

Also, join us on LinkedIn, follow us on Twitter, sign up for email updates, and stay current with the latest patient safety activities, toolkits, resources, and much more!

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<td>Cardiac Arrest</td>
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CPS Findings: All events

- 42,000+ events reported from over 110 organizations
- 6.5% of reported events are near misses or unsafe conditions, in which a mistake or error was about to occur, or could have occurred, but was caught before it reached the patient. These cases provide excellent stories and lessons learned, thereby preventing future patient harm.
- 93.5% of reports are incidents, which means it reached the patient.
- 20% of reported incidents resulted in patient harm.
- 1.1% of reported events resulted in severe harm or death.

Events Reported to CPS PSO

CUMULATIVE BASED ON EVENTS REPORTED TO THE CPS PSO ANNUALLY

<table>
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<td>2015</td>
<td>35000</td>
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2015 EVENT INFORMATION

10,609 events reported
53 different organizations
- 92% reached the patient
- 6% near misses
- 2% unsafe conditions
- <1% deaths
- <1% severe harm
- 3% moderate harm
- 18% mild harm
- 72% no harm
- 5% unknown harm level or harm level not reported

FIND MORE INFORMATION ON HOSPITALS ON PAGE 10
### 2015 EVENT INFORMATION

**ALL EVENTS**

- 137 events reported
- 10 different organizations
- 99% reached the resident
- 1% unsafe conditions
- 41% harm to the patient
- <1% deaths
- 4% moderate harm
- 36% mild harm
- 48% no harm
- 11% unknown harm level or harm level not reported

### LONG-TERM CARE EVENTS

<table>
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<td>Pressure Ulcer</td>
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### EMERGENCY MEDICAL SERVICES

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### HOME HEALTH, HOSPICE, IN-HOME SERVICES

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It’s been over 15 years since the Institute of Medicine (IOM) issued its first report, “To Err is Human,” providing a comprehensive strategy for healthcare providers, the government, payors, and consumers to reduce medical errors by fifty percent. We all know that goal has not been achieved. Medical errors resulting in patient harm and even death continue to occur daily across our nation.

On the positive side, many leaders have committed to patient safety improvement by making it a key strategic imperative and deploying more reliable processes to diminish the chances of errors and harm. There have been pockets of improvement in areas such as central line associated blood stream infections, surgical site infections and catheter-associated urinary-tract infections. While we celebrate these successes, we must all re-pledge our commitment to make greater and faster progress to fill the existing gaps. We have learned that despite our best efforts, errors will occur because we are human. The goal, then, is to design safer care systems so harm does not reach the patient.

The Center for Patient Safety is committed to promoting safe and quality healthcare, helping providers design safer processes and systems to reduce medical errors. Driven by the vision of a healthcare environment safe for all patients and healthcare providers, in all processes all the time, the Center serves as a central resource and facilitator to improve the safety and quality of care provided to citizens using a collaborative approach to education, information, resource sharing and learning.

You may have heard the saying that “culture eats strategy for lunch,” meaning a culture that embraces patient safety is a foundational requirement for safe care. The Center emphasizes the importance of culture in promoting safe systems of care, which support individualized care, teamwork and communication. In 2015 the Center completed 35,000 patient safety surveys for 39 organizations. Organizations have commented on the value of the detailed feedback report: “We love the Center’s patient safety culture survey feedback reports. The department level reports give a level of granularity we were lacking with previous surveys.”

One of the Center’s major tools to identify opportunities for improvement is the PSO database where the participants share events, near misses, unsafe conditions and lessons learned through root cause analyses. The database grew 55% from 2014 to over 44,000 reports in 2015. Analysis of the data lead to distribution of safety watches or alerts for topics such as scope sterilization and prevention of violent behavior as well as numerous safety suggestions shared in the quarterly PSO Newsletter. Adding options of electronic data submission in 2015 has resulted in easier submission and has been well received by PSO participants.

What lies ahead for the Center in 2016? More electronic submission options will be offered to the Center’s PSO participants, saving time and making it easier to report. Additionally, the Center will focus on organization-specific data analyses and real-time feedback. The Center continues to focus on three objectives:

• Learning – new opportunities for PSO participants to improve patient safety culture and implement best practices
• Preventing – improved analyses of the PSO database to identify opportunities for providers to reduce adverse events and patient harm
• Protecting – personal guidance on how to best protect patient safety and quality analysis and deliberations

The Center values all PSO participants and looks forward to a long future as partners to improve patient safety for all individuals.
A medication or substance event is a patient safety event or unsafe condition involving a substance such as medications, biological products, nutritional products, expressed human breast milk, medical gases or contrast media.

CPS Findings

1603 events reported to the Center for Patient Safety
• 15% of total events reported in 2015
• 80% reached the patient
• 16% near misses
• 4% unsafe conditions
• 22% resulted in patient harm

Harm Resulting from Medication Errors

<table>
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<td>MODERATE HARM</td>
<td>54</td>
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<td>MILD HARM</td>
<td>279</td>
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<tr>
<td>NO HARM</td>
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</tr>
<tr>
<td>UNKNOWN</td>
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Medication events include errors associated with prescribing, dispensing, administering, and monitoring.

• Prescribing errors include orders intended for another patient (e.g., order entry errors), duplications of therapy, drug-drug interactions, and medications ordered with known allergies.
• Dispensing errors include mislabeling of medications and medications misplaced in unit-based dispensing systems.
• Administering errors include wrong patient, wrong drug, wrong dose, omitted dose, and wrong time.
• Monitoring errors include lack of nursing assessment and no lab monitoring.

Events associated with technology use include order entry errors, overriding alerts, or issues with eMAR. High risk drugs including opioids, anticoagulants, and hypoglycemic agents as well as IV medications including antibiotics are the most frequently cited medications involved in reported events.
### Lessons Learned

**High risk drugs predominant cause of patient death and serious harm**

Five patients died following medication errors:
- 2 – received opioids in spite of a known allergy; 1 – over-dose of Lovenox resulting in bleeding; 1 – multiple wrong medications on admission due to order entry error; 1 – received Dopamine instead of Dobutamine

In the cases of serious harm, patients had adverse reactions to opioids requiring resuscitation, bleeding events due to anticoagulant use, delirium and hypotension as adverse reactions. Underlying causes of death and serious harm often related to miscommunication and poor documentation systems, order entry errors, and over-riding alerts.

**Communication is key underlying cause**

More than 10% of reported adverse drug events relate to lack of communication between patient care departments (e.g., OR to PACU, ED to ICU, EMS to ED). Lack of communication at handoff, fragmented documentation systems, and busy unit activities are cited as contributing to lack of communication between staff.

For example, a patient received 8mg Morphine IV push in OR, another 10 mg of morphine IV push while in PACU and then another 2 mg of Morphine upon arrival to the floor, totaling 18 mg in less than 3 hours. Medications administered were not discussed at handoff at any point of transition and medication documentation was not accessible for staff between departments. Patient responded to Narcan and recovered after the event.

Over 5% of events related to the patient’s home medications including medication reconciliation errors and mishandling of home medications. For example, a nursing home resident’s medication list included Haldol 5 mg every 4 hours PRN, but was ordered every 4 hours (routinely) when admitted to the hospital. In another case, a patient’s home medications were misplaced and unavailable to the patient at discharge.

Nearly one-half of reported adverse drug reactions involved the use of a reversal agent such as Narcan for opioid overdoses, Kayexelate to reduce elevated potassium levels, and Vitamin K to reduce elevated PT/INR levels from Coumadin use.

**Anticoagulant protocols necessary for safe dosing and administration**

Events related to anticoagulant use included dosing errors from miscalculation of patients’ body weight as well as not following protocol guidelines. In some organizations, conflicting guidelines exist on various units. For example, nurses had two separate, conflicting titration guidelines for a heparin drip order with only one guideline available as an order set in computerized physician order entry (CPOE).

---

| 80% reached the patient | 22% resulted in harm to the patient | 14 patients died or incurred severe harm | 10% occurred because of a lack of communication between patient care departments | 5% related to the patient’s home medications including medication reconciliation errors and mishandling |

### Stocking/Dispensing systems require double check to increase accuracy

Stocking errors occurred when Heparin 25,000 units/250 ml was misplaced in the bin intended for Heparin 1,000 units/500 ml and HyDRAلازم was misplaced in the slot intended for HyDROXز in the unit-based dispensing system. Errors were also associated with mislabeling, such as IV Rocephin mislabeled as Ancef. In another situation a near miss occurred for an OB patient who was to receive an epidural and Pitocin. The labels were attached incorrectly in pharmacy (Pitocin labeled as epidural and epidural labeled as Pitocin). The IV meds were placed on the counter in pharmacy and taken to OB. The nurse realized the error and alerted pharmacy. Good catch!

### Resources

- Medication Errors  
  [https://psnet.ahrq.gov/primers/primer/23/medication-errors](https://psnet.ahrq.gov/primers/primer/23/medication-errors)
- Medication Errors: Don’t let them happen to you  
- Medication Errors Related to Drugs  
  [http://www.fda.gov/drugs/drugsafety/medicationerrors/](http://www.fda.gov/drugs/drugsafety/medicationerrors/)
- Medication Safety Program  
- Medication Reconciliation to Prevent Adverse Drug Events  
  [http://www.ihi.org/topics/adesmedicationreconciliation/Pages/default.aspx](http://www.ihi.org/topics/adesmedicationreconciliation/Pages/default.aspx)
- Safety Watch – Expressed Breast Milk  
- OR Medication Safety, Room to Improve  
  [http://www.centerforpatientsafety.org/or-medication-safety-room-to-improve/](http://www.centerforpatientsafety.org/or-medication-safety-room-to-improve/)
- Prevent Fatal Medication Errors  
- Medication Reconciliation Interventions in Transitions of Care – AHRQ Webinar Recording Available  
- PSO Lessons Learned: Medication Errors  
- Reducing the Risk of Using Medication Abbreviations, A reminder from ECRI  
A fall is a sudden, unintended, uncontrolled, downward displacement of a patient’s body to the ground or other object (e.g., onto a bed, chair or bedside mat). This definition includes unassisted falls and assisted falls (i.e., when a patient begins to fall and is assisted to the ground by another person) and excludes near falls (loss of balance that does not result in a fall) and falls resulting from a purposeful action or violent blow (e.g., a patient pushes another patient).

CPS Findings

1541 events reported to the Center for Patient Safety
- 14% of total events reported in 2015
- 99% reached the patient
- 1% near misses
- 40% resulted in patient harm
- 39% of the falls resulted in mild or moderate harm, ranging from bruising to fractures and subdural bleeds.
- 4 deaths (2 intracranial bleeds, 1 found on floor with no pulse, 1 had no additional information)
- 8 severe harm (2 hip fractures, 3 cranial hemorrhages, 1 facial fracture, 1 neonate skull fracture, 1 had no additional information)
Lessons Learned

Despite the multitude of toolkits and resources available, falls still remain a prevalent safety issue. Over the past three years, falls have consistently been in the top five reported sentinel events. In 2013, falls were the fifth most commonly reported sentinel event, rising to the second most reported event in 2014. In 2015, falls and suicide were listed as the third most reported sentinel event. This 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.

While there is a host of contributing factors, there are certain pre-fall activities that place a patient at higher risk; and also certain patient groups that are at higher risk. The groups, factors and activities associated with a greater risk of falls are:

- attempting to ambulate independently, often attempting to go to the bathroom.
- lack of communication between caregivers or between caregivers and patients/family members leads to higher risk of falls.
- environment issues such as bedside tables out of the patient’s reach, cords or furniture in the path of the patient continue to be a challenge which contributes to higher risk of falling.
- those aged 65 and older are at greater risk
- patients who are post-op or post-procedure and under anesthesia have a higher risk of falls
- patients on high risk medications or on multiple medications are at greater risk of falls
- patients who have a history of falls have an increased risk for falls

Additional scenarios include:

- two neonates fell from the mother’s bed after she had fallen asleep, one resulting in a fractured skull.
- several cases of combative patients who fell during abusive behavior directed at other patients or staff members were reported. Several cases involved falls when the patient was in ancillary departments such as radiology and physical therapy.

The majority of events report the completion of a fall risk assessment. However, with the multitude of toolkits available, it is suggested that an organization review its fall risk assessment tool and ensure that it fits not only with its patient population but also with the organization’s daily routine. Ensure that all staff, not just nurses, is trained on the utilization of the tool. Always complete a Root Cause Analysis on falls to ensure any implemented interventions are appropriate for the situation.

Resources

A Collaborative Assessment of Falls in Missouri

PSO Newsletter - Summer 2013

https://psnet.ahrq.gov/primers/primer/3/never-events

Agency for Healthcare Research and Quality. (2013, January). Preventing Falls in Hospitals, A Toolkit for Improving Quality of Care


http://www.ihi.org/resources/pages/tools/tcabwehowtoguidereducingpatientinjuriesfromfalls.aspx


http://www.centerfortransforminghealthcare.org/tst_pfi.aspx

A surgery or anesthesia – related event is a patient safety event involving a surgical or other invasive procedure (e.g., colonoscopy), or the administration of anesthesia. The definition does not include events involving the removal of organs from brain–dead patients (ASA Class 6) or handling an organ after procurement.

CPS Findings

587 events reported to the Center for Patient Safety
- 6% of total events reported in 2015
- 95% reached the patient
- 4% near misses
- 1% unsafe conditions
- 37% resulted in patient harm
- 3 deaths occurred in the operating room (One patient suffered a massive MI in spite of having unremarkable cardiac findings from the pre-op work up. Other patients were cited as high risk.)

Harm Resulting

DEATH ................................................................. 3
SEVERE HARM ......................................................... 3
MODERATE HARM .................................................. 32
MILD HARM ......................................................... 182
NO HARM ............................................................ 347
UNKNOWN ........................................................... 20
Lessons Learned

- Nearly 15% of reported events were related to the consent process including not obtaining consents, listing wrong or errant information (e.g., wrong site listed, wrong procedure), and omitting relevant information (e.g., physician name, patient name).
- Nearly 6% of events related to excessive bleeding resulting in extended time in the OR, return to the OR, and even readmissions to the hospital.
- More than 5% of reported events related to unplanned returns to OR for complications such as uncontrolled bleeding, fixation of an unstable fracture, wound closure, and infected wounds. These unplanned returns to the OR many times meet the penalty criteria for readmission within 30 days.
- Nearly 4% of events involved injuries including skin tears and lacerations and multiple reports of damaged teeth during intubation. The majority of patients with damaged teeth had known dental problems putting them at risk for loss or damaged teeth.
- Approximately 25% of reported events were due to case cancellations. Most often case cancellations occur because it is unsafe for the patient to proceed (e.g., patient is febrile, symptomatic of other condition). However, at times, case cancellations occur because standards of care are not followed. In these cases, cancellations are costly and pose a risk to patient safety, particularly when the patient is prepped or already under sedation as in the case depicted below.

**Example event:** Prior to surgery, lab work was not yet available. The surgeon was informed and stated it was fine to proceed. Once the patient was in the OR already sedated and prepped, the blood bank called and stated that patient had antibodies and blood would not be available for quite some time. The surgeon cancelled the surgery since blood products would not be readily available. Patient was awakened and taken to PACU.

Wrong hardware requires return to the OR

- Patient underwent emergent surgical repair of an aortic dissection, mediastinal tubes were placed. The patient returned to the clinic for routine follow-up and a chest x-ray identified a retained drainage catheter. The patient underwent surgical removal of the item without incident.
- Patient had an aortic valve replacement. A routine post-op chest x-ray identified a retained lap sponge in the patient’s chest. The patient was taken back to the operating room the same day and the lap sponge was removed.
- Patient underwent thyroidectomy and was discharged home. Patient returned to the ED with chest pain and shortness of breath. X-rays identified a dilator placed during surgery.

Wrong-Site, Wrong-Procedure, and Wrong-Patient Surgery Patient Safety Primer

- Patient had a documented latex allergy in computer, OR room set up with latex gloves. Allergies read in final time-out conducted in the OR and caught by scrub tech that patient had latex allergy, which was missed at all other check points and timeouts.

Fire in the OR

- Fire believed to be the result of prep fumes being ignited by cautery. Fire was extinguished with sterile normal saline. No apparent patient or staff injury noted.

Resources

- Checklists Patient Safety Primer
  https://psnet.ahrq.gov/primers/primer/14/checklists
- Wrong-Site, Wrong-Procedure, and Wrong-Patient Surgery Patient Safety Primer
- Patient Safety in General Surgery, Anesthesia and Other Specialties
A perinatal event is a patient safety event associated with the birthing process or intrauterine procedures that occur during the perinatal period to the mother, fetus(es) or neonate(s). The perinatal period extends from the 20th week of gestation through 4 weeks postpartum.

CPS Findings
193 events reported to the Center for Patient Safety
- 2% of total events reported in 2015
- 99% reached the patient
- 1% near misses or unsafe conditions
- 20% harm to the fetus, neonate or mother
- 6% shoulder dystocia
- 7% vacuum extraction
- 9% fetal demise
- 65% prior to age of viability
  ~ 12% associated with transporting mother to a tertiary care center for preterm labor
  ~ 33% of transfers were delayed due to inability to find EMS transport
- 8% associated with transport of the neonate immediately after delivery

Harm Resulting
DEATH ................................................................. 2
SEVERE HARM ....................................................... 4
MODERATE HARM .................................................... 7
MILD HARM .......................................................... 27
NO HARM ............................................................. 152
UNKNOWN ...................................................................... 1

Lessons Learned
Communication remains vital in the Perinatal Area as there are usually at least two patients being cared for simultaneously: the mother and the infant. Standardized communication tools assist with ensuring the safety of the mother and child. Events noted in the database include confusion regarding the on-call obstetrician which delays care for the laboring mother and can result in an unattended delivery.

Policies must reflect community resources and maximize information about them. Having a reliable transport team to transfer the laboring mother to a higher level care when in preterm labor is extremely important for a positive outcome.

Attempting to transfer a high risk mother prior to delivery is suggested if the organization does not have resources to care for a high risk infant. Not only does the transfer of the infant separate the mother from her baby, it can increase stress for both.

Resources
Embedding TeamSTEPPS in perinatal care
A device or medical/surgical supply, including health information technology (HIT) event is a patient safety event or unsafe condition involving a defect, failure, or incorrect use of a device, including an HIT device.

**CPS Findings**

119 events were reported to the Center for Patient Safety
- 1% of total events reported in 2015
- 84% reached the patient
- 11% near misses
- 5% unsafe conditions
- 29% resulted in patient harm

**Harm Resulting**

<table>
<thead>
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<tr>
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</tr>
<tr>
<td>MODERATE HARM</td>
<td>4</td>
</tr>
<tr>
<td>MILD HARM</td>
<td>28</td>
</tr>
<tr>
<td>NO HARM</td>
<td>72</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>12</td>
</tr>
</tbody>
</table>

Although there is little harm reported for events involving medical devices and supplies, there are several reports relative to:
- Equipment not functioning properly, such as call lights, bed alarms, pagers and phones
- Dead batteries
- Loose electrical wires or broken plugs
- Equipment/supplies not readily available, including PCA pumps, surgical supplies/equipment and crash cart supplies

**Lessons Learned**

- A stat C-section was called via the emergency wall key pad. At that time, someone was working on the call system and had "turned off" the STAT function without notification to staff. This resulted in multiple staff members, needed for the STAT C-section, not getting notified. Causal factor: lack of communication to clinical staff by electrical systems workers during construction.
- Staff and physicians need supplies and medical equipment readily available to properly care for patients. The best approach is to implement standardized processes to ensure consistent availability of necessary supplies and equipment.
- Ensure all electrical equipment has routine preventive maintenance performed to prevent equipment failures.
- While crash cart checks may seem routine, there are still issues with missing equipment or medications. Ensure crash cart checks are completed without fail.

**Automation brings on new dangers**

With increased use of the electronic health record, IT-related errors have emerged. Reported events include:
- Wrong name or date on test results
- Incorrect patient histories, medication orders, tests or documentation entered into the wrong medical records because staff or physicians selected the incorrect patient name
- Patients with same or similar names challenge staff accuracy
- Registration errors include selection of wrong patient or wrong physician, incorrect birthdate on labels and armband and wrong patient bracelets
- Different departments within a healthcare system utilizing different software systems resulting in duplicate patient charts
- Software system utilized set up with inappropriate access resulting in orders not being sent to appropriate ancillary staff

**Resources**

- **SAFER Guides** [https://www.healthit.gov/safer/safer-guides](https://www.healthit.gov/safer/safer-guides)
- **Leaders’ Role in Medical Device Safety (IHI)** [http://www.ihi.org/resources/Pages/Publications/LeadersRoleinMedicalDeviceSafety.aspx](http://www.ihi.org/resources/Pages/Publications/LeadersRoleinMedicalDeviceSafety.aspx)
- **Health IT Safety Center Roadmap** [http://www.healthitsafety.org/](http://www.healthitsafety.org/)
A pressure ulcer event is a pressure ulcer or suspected deep tissue injury that was 1) not present on admission (i.e. newly – developed) or 2) worsened during the patient’s stay. The definition excludes mucosal, arterial, or venous ulcers, diabetic foot ulcers, and ulcers in patients receiving palliative care.

CPS Findings

118 events were reported to the Center for Patient Safety
• 1% of total events reported in 2015
• 97% reached the patient
• 1% near misses
• 2% unsafe conditions
• 64% resulted in patient harm

Harm Resulting

DEATH ................................................................. 0
SEVERE HARM ...................................................... 0
MODERATE HARM .................................................. 15
MILD HARM .......................................................... 60
NO HARM ............................................................. 42
UNKNOWN ............................................................. 1

The most prevalent causes for hospital-acquired pressure ulcers include prolonged pressure on skin during long surgeries; irritation from medical treatments such as TED hose, lymphedema wraps, external pacemaker, or dialysis port; or blisters/reddened areas which turn into deep pressure ulcers in patients with limited mobility or circulation.

Not only do pressure ulcers cause patients debilitating pain, prolonged hospitalizations, and increased risk for infections, they are a source of lost revenue for hospitals as the Center for Medicare Services (CMS) no longer reimburses hospitals for care provided to patients relative to hospital-acquired pressure ulcers.

Lessons Learned

Prevention is the key to avoid multiple consequences. The resources listed provide multiple toolkits to assist organizations in implementing/improving a pressure ulcer prevention program. Major steps include:
• Assess skin of every patient upon admission
• Inspect skin and reassess any areas of concern daily
• Manage each patient’s skin moisture
• Optimize nutrition and hydration
• Minimize pressure by turning/repositioning at-risk patients every two hours and utilizing pressure redistribution surfaces
• Team-based planning to address skin risks

Resources

Guide to Prevent Pressure Ulcers – IHI
http://www.ihi.org/resources/Pages/Tools/HowtoGuidePreventPressureUlcers.aspx

Pressure Ulcer Toolkit – Primaris
http://primaris.org/tool/complete-pressure-ulcer-prevention-pup-toolkit
A healthcare–associated infection event is a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) acquired during the course of treatment within a healthcare setting.

CPS Findings
81 events were reported to the Center for Patient Safety
• 1% of total events reported in 2015
• 88% reached the patient
• 12% near misses
• 62% resulted in patient harm

Harm Resulting
DEATH ................................................................. 2
SEVERE HARM .................................................. 2
MODERATE HARM .............................................. 8
MILD HARM ....................................................... 38
NO HARM ........................................................... 30
UNKNOWN ......................................................... 1

Two patient deaths were reported. In the first case the patient was critically ill with multi-system issues and had ventilator-associated pneumonia. In the other case, the patient had a catheter associated UTI at the time of death.

Lessons Learned
Approximately 10% of events involved a hospital readmission for treatment of an HAI. Readmissions were for surgical site infections, sepsis, CAUTIs, and in one case, c-diff infection transmitted from a previous roommate. Many other events result in an extended length of stay, particularly for frail, high risk patients.

10% of events referenced sepsis or positive blood cultures including central line associated blood stream infections. Other blood stream infections were secondary to UTI, pneumonia, and other primary infections.

MRSA and VRE account for nearly 10% of reported organisms. 20% of events involve surgical patients and 10% involve patients initially treated in the ED.

Wet packs rejected—requires investigation to assure proper sterilization procedures
Three reported events included OR staff finding wet contents when opening surgical trays, indicating unsterile conditions. Investigation of sterilization processes was necessary to identify other potentially contaminated trays as well as underlying cause of why proper sterilization did not occur.

Resources
Patient Safety Primer Health Care-Associated Infections
https://psnet.ahrq.gov/primers/primer/7/health-care-associated-infections

CDC and HAI
http://www.cdc.gov/hai/
HOSPITAL
BLOOD OR
BLOOD PRODUCT

A blood or blood – product event is any patient safety event or unsafe condition involving the processing and/or administration of blood or a blood product. The definition does not include information on blood or blood product collection and other processes prior to receipt of the product by the blood bank.

CPS Findings

77 events were reported to the Center for Patient Safety
• 1% of total events reported in 2015
• 82% reached the patient
• 18% near misses
• 32% resulted in patient harm
• 27% involved a transfusion reaction
  ~ 62% occurred during the transfusion
  ~ 38% occurred post-transfusion

Harm Resulting

DEATH ............................................................................................................................... 0
SEVERE HARM ................................................................................................................ 1
MODERATE HARM ...................................................................................................... 1
MILD HARM ..................................................................................................................... 23
NO HARM ......................................................................................................................... 46
UNKNOWN ....................................................................................................................... 6

Lessons Learned

Medically fragile patients require closer watching
6% of events involved Transfusion Associated Circulatory Overload (TACO). These events were all associated with medically fragile patients who had multiple health issues. These medically fragile patients bear closer monitoring to avoid overloading their circulatory system.

Communication both with blood bank and within own unit vital for prevention of errors
26% of events involved communication both between blood bank and receiving unit and also within the same department. Errors included events such as sending blood to the wrong floor, not communicating patient information, not communicating procedures and when blood product would be needed. Transitions and handoffs also contributed to error: not only handoffs when the patient was transferring to a different floor or unit, but when personnel left for lunch. Lack of communicating what needed to be finished lead to delays in patients receiving blood and delays in procedures.

Diagnostic errors can occur in any setting
An example is a patient who was receiving a blood transfusion and was also receiving IV vancomycin. When the patient began developing hives, the diagnosis was an allergy to the vancomycin therefore no transfusion reaction was documented and vancomycin discontinued. When the patient received a second transfusion, a transfusion reaction was noted during the transfusion.

Technology can help but also be involved with events
A discrepancy was encountered regarding the patient’s name, medical record number, social security number, blood type and birthdate. Medical Records was contacted and one set of records had been merged with the other set of medical records. Records had to be corrected in four different electronic healthcare software systems and patient had to have labs redrawn.

In another event a patient was in need of Rhogam, but the selection in the software system available to the physician sent the order to nursing only and the information was not shared with blood bank or pharmacy.

Following protocols can help alleviate errors
29% of near misses were caught by staff double-checking patient name, birthdate, ID number and blood type with blood issued by blood bank. Checklists and following protocols helped to prevent events from reaching the patient.

Resources

IHI
http://www.ihi.org/communities/blogs/_layouts/ihi/community/blog/itemview.aspx?List=0f316db6-7f8a-430f-a63a-ed7602d1366a&ID=33

WHO
http://apps.who.int/medicinedocs/documents/s17267e/s17267e.pdf
A venous thromboembolism (VTE) event is a deep vein thrombosis (DVT) or a pulmonary embolism (PE) that (1) had onset during a patient’s stay; (2) was present on admission but that occurred or developed within 30 days of a prior discharge from a facility; or (3) had onset within 30 days of discharge from a facility. DVT is a partial or total thrombotic occlusion of a deep vein. PE is a partial or total thromboembolic occlusion of one or more pulmonary arteries.

CPS Findings

There were three (3) VTEs reported in 2015, all occurring post total knee replacements resulting in mild harm.

Harm Resulting

DEATH ................................................................. 0
SEVERE HARM .................................................. 0
MODERATE HARM ............................................. 0
MILD HARM ....................................................... 3
NO HARM .......................................................... 0
UNKNOWN .......................................................... 0

Lessons Learned

In October 2015, AHRQ published a new Guide to Preventing Hospital-Acquired Thromboembolism. VTE remains a common source of morbidity and mortality. While there are instances where a VTE may occur despite precautions taken, many opportunities are missed for the prevention of VTE. AHRQ’s Guide provides implementation details of a multi-disciplinary approach to the prevention of VTE.

Resources

Preventing Hospital-Acquired Thromboembolism

CDC Grand Rounds: Preventing Hospital-Associated Venous Thromboembolism
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6309a3.htm

100% reached the patient
100% resulted in harm to the patient
0 died or incurred severe harm

ALL STATS ARE BASED ON EVENT INFORMATION REPORTED TO THE CPS PSO
CPS Findings

6287 events were reported to the Center for Patient Safety
- 59% of total events reported in 2015
- 93% reached the patient
- 5% near misses
- 2% unsafe conditions
- 16% resulted in patient harm
- 22% associated with AMA/Elopement/Refusal for treatment
- 4% associated with behavioral health issues
  ~ Abusive/violent behavior
  ~ Suicide attempt/suicidal ideation
  ~ Sexual boundary issue
  ~ Patient inability or unwillingness to follow hospital policy

Harm Resulting

DEATH ............................................................................................................................ 29
SEVERE HARM .......................................................................................................... 29
MODERATE HARM .................................................................................................. 130
MILD HARM ........................................................................................................... 789
NO HARM ............................................................................................................... 4951
UNKNOWN ............................................................................................................. 359

Twenty-nine deaths were reported in the “Other” category. Many events were mis-coded as a death in that they could have (in italics) resulted in death but in fact were near misses.

Examples include:
- patient with suicidal ideation was delivered a meal tray with metal utensils rather than plastic.
- the belongings of a patient with suicidal ideation were not appropriately assessed and pants with strings were left in the patient’s possession.
Suicide
This includes overdoses at home after having received narcotic pain medicine in the ED or suicide when discharged from the hospital with a terminal diagnosis.

Allergies
Patient had a known allergy to IVP dye and expired after receiving contrast dye in the cath lab.

Continuous narcotic infusion post-operatively for pain control
A patient was receiving a continuous epidural narcotic infusion for pain control, suffered a sudden cardiac/respiratory arrest which resulted in a prolonged hypoxic state. Patient was ultimately removed from life support.

Lessons Learned
End of Life Care
Several events pertained to End of Life Care. Although a patient has chosen palliative care, they can still experience harm. These patients usually have a very complex medical history, may receive high risk medications and be managed by multiple physicians. This puts the palliative care patient at high risk for patient safety events.

Sepsis
Multiple events referred to “Code Sepsis”. The CDC definition for Sepsis is the body’s overwhelming and life-threatening response to infection which can lead to tissue damage, organ failure and death. It is difficult to predict, diagnose and treat. Patients who develop sepsis have an increased risk of complication and death and face higher healthcare costs and longer treatment.

Diagnostic Error
The Institute of Medicine continued its Quality Chasm Series this year and released “Improving Diagnosis in Health Care”, a follow-up to the landmark reports of “To Err Is Human: Building A Safer Health System” and “Crossing the Quality Chasm: A New Health System for the 21st Century”. Arriving at the right diagnosis can be difficult, but it sets the foundation for a patient’s care. Diagnostic errors are present across the healthcare continuum and can be the source of indefinite harm to patients.

Diagnostic error examples in the CPS database:
- Patient went to the Emergency Department with a headache, was diagnosed with a migraine and sent home. The patient returned within 6 hours and had a missed diagnosis of stroke. The patient was transported to a higher level of care but was already suffering neurological deficits from the stroke.
- Patient went to the Emergency Department complaining of chest pain, was diagnosed with musculoskeletal pain and sent home with analgesics. The patient returned to the ED shortly after discharge with increasing shortness of breath and was diagnosed with a pulmonary embolism that had been missed.
- Patient presented to Emergency Department with abdominal pain. The patient was diagnosed with a small kidney stone and sent home. The patient presented later to a higher level facility with increasing pain and was diagnosed with a severely infected gallbladder which needed removal and no kidney stone.

Resources
Error in palliative care: kinds, causes, and consequences: a pilot survey of experiences and attitudes of palliative care professionals

Surviving Sepsis Campaign
http://www.survivingsepsis.org/Pages/default.aspx
Sepsis http://www.cdc.gov/sepsis/
Improving Diagnosis in Health Care
LONG-TERM CARE

Long-term care (LTC) is a relative newcomer to the Center for Patient Safety’s PSO. Yet, as the healthcare industry works to address safety across the continuum, LTC has to be part of that effort, both for the benefit of patients and the business health of all providers.

Since the IOM released its landmark report “To Err is Human” in 1999, most of the patient safety research has been centered within hospital walls. Residents and patients, however, experience healthcare in multiple settings and must be able to move among them without incident. This year, one of eight major recommendations from the National Patient Safety Foundation (NPSF) addresses patient safety across the entire care continuum.

CPS is committed to improving the safety and quality of all care, helping providers of all types to enhance their systems and reduce adverse outcomes. It acts as a resource and facilitator, using a collaborative approach to education and improvement.

Long-term care has special challenges, including shifting reimbursement structures, tight regulation, increased public scrutiny, and evolving theories of care. These all require a culture that allows for learning, growth and improvement. CPS PSO participation offers tools that support those things.

What does a relationship between CPS and long-term care look like? CPS wants long-term care communities to strengthen their culture of safety, which can support both improved outcomes that drive reimbursement and survey readiness. The Center will continue to reach out and serve as a resource to LTC organizations and to focus on three objectives:

- **Learning** – new opportunities for PSO participants to improve their resident safety culture and improve their care
- **Preventing** – using the data in the PSO database to identify opportunities for LTC providers to reduce adverse events and harm
- **Protecting** – individualized guidance for LTC communities to maximize federal protection for their safety and quality analysis and deliberations

Kathy Wire, JD, MBA, CPHRM
Project Manager
Center for Patient Safety
LONG-TERM CARE
A fall is a sudden, unintended, uncontrolled, downward displacement of a patient’s body to the ground or other object (e.g., onto a bed, chair or bedside mat). This definition includes unassisted falls and assisted falls (i.e., when a patient begins to fall and is assisted to the ground by another person).

CPS Findings

78 events were reported to the Center for Patient Safety
- 59% of total LTC events reports
- 100% reached the resident
- 40% resulted in resident harm
- 22% were associated with toileting or bathing
- 10% were associated with ambulating without assistance
- 71% completed a fall risk assessment
- 44% were assessed to be at increased risk of fall
- 73% undocumented if resident on medication increasing fall risk

Harm Resulting

<table>
<thead>
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<th>Category</th>
<th>Count</th>
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</thead>
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<td>No harm</td>
<td>43</td>
</tr>
<tr>
<td>Unknown</td>
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</tbody>
</table>

Lessons Learned

- Per the CDC approximately 1800 nursing home residents die from fall-related injuries annually and many falls go unreported
- Residents in long-term care facilities tend to be more fragile, with increased muscle weakness which puts them at risk for falls.
- The most common reason for resident falls was attempting toileting activities or bathing without assistance.
- While the data is scarce, medication could be a major contributor to falls. Residents on four or more medications are considered to be at higher risk for falls and categories of medications such as anti-depressants, benzodiazepines, hypnotics and sedatives also put a resident at higher risk for a fall.

Resources

- Improving Patient Safety in Long-Term Care Facilities; Module 3: Falls Prevention
- Improving Patient Safety in Long Term Care Facilities
- Strategies for Reducing Falls in Long Term Care Facilities
- Preventing Fall in Long-Term Care
- Falls in Nursing Homes
  http://www.cdc.gov/homeandrecreationalsafety/falls/nursing.html
A medication or substance event is a patient safety event or unsafe condition involving a substance such as medications, biological products, nutritional products, expressed human breast milk, medical gases or contrast media.

CPS Findings
26 events were reported to the Center for Patient Safety
- 19% of total LTC events
- 99% reached the resident
- 1% cited an unsafe condition
- 8% resulted in resident harm

Harm Resulting

<table>
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<th>Harm Level</th>
<th>Number</th>
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<tr>
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<tr>
<td>NO HARM</td>
<td>13</td>
</tr>
<tr>
<td>UNKNOWN</td>
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</tr>
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</table>

Lessons Learned
- High risk medications for the elderly and medically fragile include anti-coagulants, opioids, benzodiazepines and diabetic medications. These medications made up 38% of the events reported to the Center for Patient Safety.
- 62% of the events reported the medication was either not listed in a high risk category or it was unknown if the medication was in a high risk category.
- Technology also plays a factor in medication errors in long-term care. 19% of events reported cited issues with the Electronic Medical Record (EMR).
- Standardizing processes, implementing double-check procedures and developing checklists for medication administration and for transitions of care can help to reduce medication errors.

Resources

- Preventing medication errors in long-term care: results and evaluation of a large scale web-based error reporting system

- From the Hospital to Long Term Care: Protecting Vulnerable Patients During Handoffs
  https://www.ismp.org/newsletters/acutecare/showarticle.aspx?id=54

- Reducing Medication Errors in Long Term Care Facilities: Safe Medication Practices

- Various Tools and Resources for Providers in All Healthcare Venues from the Institute for Safe Medical Practices
  http://www.ismp.org/tools/
LONG-TERM CARE
HEALTHCARE
ASSOCIATED
INFECTION (HAI)

A healthcare–associated infection event is a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) acquired during the course of treatment within a healthcare setting.

CPS Findings
19 events were reported to the Center for Patient Safety
• 14% of events reported in 2015
• 100% reached the resident
• 95% resulted in resident harm, all at the mild level

Harm Resulting
DEATH ............................................................................................................................. 0
SEVERE HARM .............................................................................................................. 0
MODERATE HARM ..................................................................................................... 0
MILD HARM .................................................................................................................. 18
NO HARM ..................................................................................................................... 0
UNKNOWN ..................................................................................................................... 1

Lessons Learned
• Catheter associated infections are a common and potentially life-threatening HAI for long-term care residents. 5-10% of LTC residents have urinary catheters and nearly 12% of new admissions to long-term care have urinary catheters in place.
• 53% of HAIs reported were classified as CAUTIs
• 32% were Urinary Tract Infections not otherwise classified
• 5% of HAIs were pneumonia

Resources
AHRQ Safety Program for Long Term Care: Preventing CAUTI and other HAIs
AHRQ Safety Program for Long Term Care: HAIs/CAUTI
Facility Implementation Guide, AHRQ Safety Program for Long Term Care; Preventing CAUTI and other HAIs
Nursing Homes and Assisted Living Prevention Tools
http://www.cdc.gov/longtermcare/prevention/index.html
National Action Plan to Prevent Health Care-Associated Infections
Road Map to Elimination April 2013

ALL STATS ARE BASED ON EVENT INFORMATION REPORTED TO THE CPS PSO
A pressure ulcer event is a pressure ulcer or suspected deep tissue injury that was 1) not present on admission (i.e. newly – developed) or 2) worsened during the patient’s stay. The definition excludes mucosal, arterial, or venous ulcers, diabetic foot ulcers, and ulcers in patients receiving palliative care.

CPS Findings

1 stage 3 ulcer reported

Pressure ulcers are a serious resident safety concern in long-term care facilities. Risk factors of the resident population include immobility, poor nutritional status, incontinence, complex disease process and dehydration. Fortunately, events reported to CPS have demonstrated success in managing most pressure ulcers—for now.

Pressure ulcers can cause debilitating pain, readmission to the hospital, diminished quality of life and death. The cost is also substantial as it has been estimated that the treatment of pressure ulcers is over $11 billion annually.

Lessons Learned

Prevention is the key to avoid multiple consequences! Major steps include:

- Assess skin of every patient upon admission
- Inspect skin and reassess any areas of concern daily
- Manage each patient’s skin moisture
- Optimize nutrition and hydration
- Minimize pressure by turning/repositioning at-risk patients every two hours and utilizing pressure redistribution surfaces

Resources

Guide to Prevent Pressure Ulcers – IHI
http://www.ihi.org/resources/Pages/Tools/HowtoGuidePreventPressureUlcers.aspx

Pressure Ulcer Toolkit – Primaris
http://primaris.org/tool/complete-pressure-ulcer-prevention-pup-toolkit
A device or medical/surgical supply, including health information technology (HIT) event is a patient safety event or unsafe condition involving a defect, failure, or incorrect use of a device, including an HIT device. A device includes an implant, medical equipment, or medical/surgical supply (including disposable product). An HIT device includes hardware or software that is used to electronically create, maintain, analyze, store, or receive information to aid in the diagnosis, cure, mitigation, treatment or prevention of disease and that is not an integral part of (1) an implantable device or (2) an item of medical equipment. The definition does not include information for defects or events discovered prior to market approval or clinical deployment.

CPS Findings

There has only been one device-related issue reported to the CPS for LTC residents: an injury from a dressing stick used to pull up socks for a resident on hip precautions. However, several reports included stories about medication errors, indicating the use of the electronic medical record contributed to the error.

Lessons Learned

Although there is little data involving medical devices and supplies, there are recommended guidelines to keep resident safety as a priority:

- Ensure all equipment is functioning properly, such as call lights, bed alarms and assistive devices/equipment
- Routinely replace batteries
- Routinely check equipment for loose electrical wires or broken plugs
- Make certain that all equipment/supplies are readily available
- Ensure that residents are educated/trained on utilization of assistive devices

Automation brings on new dangers

This pertains not only to the hospital but across the healthcare continuum. With increased use of the electronic health record, IT-related errors have emerged. Reported events include:

- Wrong name or date on test results
- Incorrect resident histories, medication orders, tests or documentation entered into the wrong medical records because staff or physicians selected the incorrect resident name
- Residents with same or similar names challenge staff accuracy
- Software system within a long-term care agency not interoperable with a hospital or pharmacy software system, which leads to lack of information

Resources

SAFER Guides
https://www.healthit.gov/safer/safer-guides

Medical Equipment Maintenance Manual

Leaders' Role in Medical Device Safety (IHI)
http://www.ihi.org/resources/Pages/Publications/LeadersRoleinMedicalDeviceSafety.aspx

A Roadmap to Improving Health IT Safety
CPS Findings

12 events were reported to the Center for Patient Safety
  - 9% of events reported in 2015
  - 100% reached the resident
  - 25% resulted in resident harm

Harm Resulting

<table>
<thead>
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<th>Count</th>
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</table>

Lessons Learned

The death reported involved aspiration by an elderly resident with dysphagia. The resident had refused to have liquids thickened, an effective barrier to prevent residents with dysphagia from aspirating. The situation demonstrates the ongoing tension between safety and resident rights.

Though the number of long-term care reports is still small, the lessons learned from other providers offer wisdom that can also prevent harm for residents of nursing homes and assisted living communities.

Resources

Preventing Aspiration in Older Adults with Dysphagia
http://www.annalsoflongtermcare.com/article/7342

Errors in palliative care: kinds, causes, and consequences: a pilot survey of experiences and attitudes of palliative care professionals
EMERGENCY MEDICAL SERVICES

Every day, the men and women in Emergency Medical Services (EMS) answer the call to help those in their hour of need. These professionals bring compassion, enthusiasm and dependability in, often, very challenging environments. CPS is honored to be an EMS partner in safety. CPS envisions a healthcare environment safe for all patients and healthcare providers, in all processes, all the time.

Patient safety is an area that hasn’t been studied in depth or researched intensively in EMS. Likewise, there are still many educational challenges as well as misconceptions that exist when it comes to patient safety. Some of these include the thought that patient safety is only about the provider not making a mistake; and if one occurs, it was because they were careless. Contrary to that belief, we should start by learning what medical errors are occurring, why they occur and then apply methods to prevent them. This includes understanding the systems, processes and how we work in our environments. In addition, it’s important to understand how a culture promotes safe systems and safe individualized care, utilizing strong teamwork and clear communication.

Many EMS organizations have adopted patient and provider safety as a core value, investing resources to improve the cultural climate for safety. Others have been watching closely, learning where to start, while some are waiting to take those first steps. Regardless, safety is a journey and not a race. Taking the first step is the most important part of that journey.

CPS’ goal is to offer timely solutions and resources to improve patient safety culture, including tools and assistance with implementation and measurement. Leveraging ten years’ experience with other providers, CPS is positioned to translate safety knowledge and lessons learned to EMS. While EMS is a profession and dimension of healthcare different from other settings, there are universal theories and principles that hold true for all providers.

Over the past year the Center has improved many processes and updated services, including innovative approaches to patient and provider safety. Likewise, CPS continually strives to effectively share patient safety information and the important role that culture plays in safety. An example is the Center’s safety campaign called EMSFORWARD, which focuses on ten areas of patient and provider safety. A campaign-based report offers an opportunity to find engagement, discussion and action around safety. CPS looks forward to similar opportunities to provide useful, actionable information that will move EMS safety forward in the years to come.

The Center will continue to reach out and serve as a resource to EMS organizations and focus on three objectives:

- Protecting – individualized guidance for EMS to maximize federal protection for their safety and quality analysis and deliberations
- Learning – new opportunities for PSO participants to improve their safety culture and improve their care
- Preventing – using the data in the PSO database to identify opportunities for EMS providers to reduce adverse events and harm
CPS Findings

229 events were reported to the Center for Patient Safety

- 27% of EMS events reported in 2015
- 84% were on the scene >10 minutes.
- 4% secondary transport to the appropriate facility
- 2% pediatrics

Lessons Learned

Stroke and STEMI are both considered Time Critical Conditions, which require rapid assessment, diagnosis and treatment by both EMS and healthcare facilities that can provide the appropriate interventions to improve outcomes as well as minimize complications and death.

Many states have been seeking ways to improve outcomes for stroke, STEMI and trauma patients with a Time Critical Diagnosis approach. Research has shown that prompt treatment by a center that specializes in these areas helps to save lives. Therefore, the goal is to transport the patients as quickly as possible to the appropriate facility, minimizing the time on the scene and eliminating the need for secondary transport. Standardized processes, identification of designated centers and quality improvement efforts help to ensure that the goal of providing the appropriate care for the best outcome possible is met by all providers across the healthcare continuum.

Pediatrics represents a specialized patient group. Time plays a major factor in pediatric trauma; and transport to the appropriate facility is critical, considering whether the patient is a newborn or a teenager. Children require different skill sets that often come from years of experience. In addition, specialized equipment and resources are often needed for the pediatric population.

Resources

EMS: PS-10 http://www.centerforpatientsafety.org/emsforward/

Safety Watch: Patient Destination Decisions http://www.centerforpatientsafety.org/patient-destination-decisions/


Stroke is an Emergency https://www.acep.org/uploadedFiles/ACEP/Practice_Resources/disaster_and_EMS/EMS_week/ems_week_materials/08factsheets.pdf

Recommendation for Criteria for STEMI Systems of Care http://www.heart.org/HEARTORG/HealthcareResearch/MissionLifelineHomePage/EMS/Recommendations-for-Criteria-for-STEMI-Systems-of-Care_UCM_312070_Article.jsp#VuMWgEorKUk

STELI: 10 things you need to know to save lives https://www.ems1.com/mobile-data/articles/2098450-STEMI-10-things-you-need-to-know-to-save-lives/


EMS for Children National Resource Center http://emscnrc.org/


EMERGENCY MEDICAL SERVICES
CARDIAC ARREST

CPS Findings

129 events were reported to the Center for Patient Safety
• 15% of EMS events reported in 2015
• 3% involve pediatrics
• 73% resulted in harm to the patient
• 65% declared dead after transport to receiving facility
• 26% declared upon arrival of the EMS providers on the scene
• 9% declared dead during the call

Lessons Learned

Cardiac Arrest is a life threatening event. To ensure patient safety and promote the best outcome possible, it is suggested that organizations develop an Emergency Cardiovascular Care Plan. Medical directors and other providers should be engaged to standardize policies and processes that are directed not only toward quality improvement but keeping patient safety as the top goal.

The pediatric population represents a specialized group when it comes to cardiac arrest. While SIDS and trauma are often associated with cardiac arrest, EMS crews must also keep in the back of their mind that the pediatric patient may have other factors such as a history of congenital heart defect as a cause for the cardiac arrest.

Resources

Strategies to Improve Cardiac Arrest Survival

Improve Cardiac Arrest Survival
EMERGENCY MEDICAL SERVICES
BEHAVIORAL HEALTH

CPS Findings
129 events were reported to the Center for Patient Safety
• 15% of EMS events reported in 2015
• 67% involved law enforcement
• 15% involved verbal abuse/aggressive behavior toward the EMS provider
• 6% involved attempted elopement
  ~ 25% attempted while vehicle in motion
  ~ 75% attempted when ambulance arrived to transfer patient
• 10% involved suicide attempt/suicidal ideation

Lessons Learned
CPS began collecting behavioral health events in 2015. The purpose is to gather data and learn how this patient population impacts EMS, how resources are utilized and to identify safety concerns. In addition, this will help EMS leaders understand the frequency and dynamics of high risk events such as elopement and suicide attempts/ideation as well as to gain a deeper understanding of the community’s mental health resources. Many times these events result in safety concerns for the patients as well as putting the EMS provider at risk. The goal is to use the data to identify best practices and establish standardized processes to help ensure the best patient outcomes, but also support the safety of the EMS providers who are involved in behavioral health patient calls.

Resources
EMS: PS-10  http://www.centerforpatientsafety.org/emsforward/
Prevent Violent Behavior
JEMS.COM - Training EMS for Violent Encounters
EMS World - Beyond the Basics: Behavioral Emergencies
Primary Psychiatry - Treatment of Psychiatric Patients in Emergency Settings

15% involved verbal or physical abuse toward EMS
6% involved attempted elopement
10% involved suicide attempt or suicidal ideation

ALL STATS ARE BASED ON EVENT INFORMATION REPORTED TO THE CPS PSO
EMERGENCY MEDICAL SERVICES
AMBULANCE CRASH

An ambulance crash is defined as any and all ambulance and air ambulance crashes and accidents, avoided accidents (i.e. swerving or other maneuvers to avoid a crash), and “fender-benders”. For ambulance/air ambulance crashes, they are classified as follows: avoided accidents with a patient on board; accidents and crashes without a patient on board; all avoided or “almost” accidents without a patient on board.

CPS Findings
11 events were reported to the Center for Patient Safety
• 1.3% of EMS events reported in 2015
• 45% reached the patient
• 18% near misses
• 36% unsafe conditions
• 27% no harm
• 73% unknown harm/level not assigned
• 27% involved icy conditions
• 27% involved deer

Lessons Learned
Ambulance crashes are a leading area of risk either both when responding to a call and when transporting a critically ill patient. Driving requires strict attention to the road, road conditions, other drivers and the surrounding environment, including changing weather conditions. Having standardized processes and safety discussions with crews about weather conditions as well as when to use lights and sirens are simple ways to minimize risk.

Resources
EMS: PS-10  http://www.centerforpatientsafety.org/emsforward/


45% reached the patient  58% involved icy conditions or deer  0 patients died or incurred severe harm

ALL STATS ARE BASED ON EVENT INFORMATION REPORTED TO THE CPS PSO
A medication or substance event is a patient safety event or unsafe condition involving a substance such as medications, biological products, nutritional products, expressed human breast milk, medical gases or contrast media.

CPS Findings

54 events were reported to the Center for Patient Safety
- 6.3% of EMS events reported in 2015
- 83% reached the patient
- 4% moderate harm
- 19% mild harm
- 46% no harm
- 31% unknown harm level/level not assigned
- No deaths reported but two patients required intubation after receiving Versed

Nearly 90% of reported events were associated with high risk drugs such as opioids (morphine and fentanyl), benzodiazepines, versed, epinephrine, and dopamine.

Errors were most often related to the wrong drug or wrong dose being administered as well as omission of medications. Underlying causes of administration errors included obtaining the wrong medications prior to administration and staff not following protocols. Omission of medications related to unavailability of medications when in the field.

35% of reports involved non-adherence to protocols such as not following dosing guidelines, not checking with medical control, and not using pumps for high risk IV medication administration.
Lessons Learned

Assure medications are appropriately labeled and organized for safe emergency access.

Grabbing the wrong drug can lead to patient harm. Decrease the likelihood by implementing a cross-check process before any medication is administered.

Examples of events:
- When treating a patient with congestive heart failure, the medic went to give Morphine, but instead mistakenly selected Versed. After Versed administration, the patient became unresponsive and required intubation.
- The paramedic attendant inadvertently administered 100 mcg of Fentanyl IVP believing the vial was only 50 mcg. The attendant did not double check the consent ratio of the medication prior to administration. The error was discovered at the hospital when the paramedic’s partner reminded the attendant to waste the leftover 50 mcg of Fentanyl.
- Paramedic treated the patient for nausea and administered what was thought to be Zofran 4 mg/2 ml, but the medication was actually Epinephrine. The paramedic chose the vial and administered it because he believed Zofran had a green vial top. Investigation revealed that Zofran and Epinephrine 1:1000 each had green capped vials.

Establish routine for checking medication supplies

Stocking the wrong drugs and missing medications can result in adverse events:
- Controlled medications were removed from the ambulance prior to going to the shop for maintenance. When the ambulance was returned to service, the controlled medications were not placed back on the ambulance vehicle. As a result, the medications were not available when the ambulance responded to a medical emergency.
- While restocking the ambulance, one of the medics discovered a 500 ml bag of D5W instead of the normal Lactated Ringers that is carried in the hospital. D5W could have accidentally been used on patients for providing fluid boluses.
- Acetaminophen was purchased by mistake instead of baby aspirin and placed into the stock station. Potentially 16 patients received acetaminophen instead of the intended aspirin during a 6 week period before the error was caught.

Resources

EMS: PS-10  http://www.centerforpatientsafety.org/emsforward/

Safety Watch – Intranasal Medication Administration
http://www.centerforpatientsafety.org/safety-watch-issued-intranasal-medication-administration/

Medication Errors
https://psnet.ahrq.gov/primers/primer/23/medication-errors

Prevent Fatal Medication Errors
http://www.centerforpatientsafety.org/prevent-fatal-medication-errors/

Medication Reconciliation Interventions in Transitions of Care – AHRQ Webinar Recording Available

PSO Lessons Learned: Medication Errors
http://www.centerforpatientsafety.org/pso-lessons-learned-medication-errors/

Reducing the Risk of Using Medication Abbreviations: A reminder from ECRI

Medication Errors Related to Drugs
http://www.fda.gov/drugs/drugsafety/medicationerrors/

Medication Safety Program  http://www.cdc.gov/medicationsafety/
A device or medical/surgical supply event is any event, near miss, or unsafe condition involving a defect, failure, or incorrect use of medical equipment, devices, and supplies. Examples: dead batteries and other incidents with defibrillators, pacemakers, CO2 monitors, O2 tanks, EKG monitors, laryngoscopes, IV pumps; expired or defective disposable supplies; missing equipment such as a pediatric airway bag not being on the ambulance.

CPS Findings

56 events were reported to the Center for Patient Safety
- 6.5% of EMS events reported in 2015
- 80% reached the patient
- 13% near misses
- 7% unsafe conditions
- 9% mild harm
- 61% no harm
- 31% unknown harm level/level not assigned

Lessons Learned

**Stretchers**

Moving and lifting patients has inherent risks to patients as well as providers. Stretcher-related events are the number one issue reported in the Device/Supply category. About 75% of reported stretcher-related events involve the power stretchers not working properly; about one-third of those relate to broken/missing parts, such as screws. Other stretcher events are related to drops because of miscommunication between caregivers, lack of appropriate stretchers for obese patients or environmental challenges such as debris in the route or uneven ground or power failures. Despite these issues, most patients were not harmed and none sustained more than mild harm.
Causal factors for stretcher events include inattention, over-stressing the stretcher and lack of training. Due to the often extreme conditions and unpredictable environment in which EMS operates, stretchers may be placed in situations where they can injure providers and/or patients.

- Schedule routine preventive maintenance for all stretchers to confirm proper performance.
- Include stretcher safety in routine training/retraining requirements.
- Consider developing communication scripts for crew members when using stretchers, much like airline pilots, thus decreasing the likelihood of dropping the stretcher.

**Equipment/Supplies Not Working Properly/Missing**

Almost 50% of all device/supply events involve patient equipment that did not work properly, including the ambulance itself, which resulted in delays while waiting for a second vehicle.

Malfunctioning patient care equipment/supplies included:

- EKG monitors
- printers
- blood pressure cuffs
- capnography
- chest compression
- devices
- laryngoscopes
- dead battery or technology concerns

Some events documented the inability to transmit an EKG due to lack of data reception in the field. Other events identified missing or lost equipment from the ambulance, including 12-lead cables, cot straps and glucometer accessories.

- Schedule and perform routine preventive maintenance for all ambulances and daily patient care equipment/supply inventories to decrease the likelihood of failure or missing equipment while performing patient care.
- Ensure IT capabilities are sufficient between ambulance and receiving facility.
- Besides reporting equipment failures to the PSO, consider reporting events to the manufacturer and FDA even if there is no serious injury so they are aware of potential issues. Making such reports may help improve safety for patients as well as EMS colleagues throughout the country.

**Resources**

- **EMS: PS-10**  http://www.centerforpatientsafety.org/emsforward/
- **Safety Watch – Missing and Lost Equipment in EMS**  http://www.centerforpatientsafety.org/safety-watch-missing-lost-equipment-in-ems/
An airway management event is any event, near miss, or unsafe condition involving a failure or delay of device placement; airway dislodgement; misplaced tubes; injury or trauma resulting from airway management; or other cases where the need for invasive airway management was identified but was not properly managed.

CPS Findings
29 events were reported to the Center for Patient Safety
- 3.4% of EMS events reported in 2015
- 97% reached patient
- 3% unsafe conditions
- 14% death
- 3% mild harm
- 21% no harm
- 62% unknown harm level/harm level not assigned

Lessons Learned
Some of these events reflect the complicated range of patients that EMS encounters, from trauma patients that require surgical airways, to respiratory distress patients requiring endotracheal intubation. Regardless, EMS must often act quickly as patients frequently present in acute distress. To take immediate action the provider must have the skills and experience to manage many types of airways.

Issues with Airway Management include esophageal intubations, ET tube dislodgement and aspiration. Several events involved lack of utilization of ETCO2 to ensure tube placement, failure to secure the airway and lack of adherence to protocol.
- 7% failed airway, resulting in an emergency cricothyrotomy
- 14% lack of ETCO2 utilization
- 21% lack of adherence to policy
- 28% lack of securing airway
- 17% esophageal intubations

Resources
- EMS: PS-10  http://www.centerforpatientsafety.org/emsforward/
- Advances in prehospital airway management  http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3982372/

ALL STATS ARE BASED ON EVENT INFORMATION REPORTED TO THE CPS PSO

97% reached the patient  17% resulted in harm to the resident  4 patients died or incurred severe harm
CPS Findings

160 events were reported to the Center for Patient Safety

- 18% of EMS events reported in 2015
- 87% reached the patient
- 4% near misses
- 9% unsafe conditions
- 3% deaths
- 1% severe harm
- 4% moderate harm
- 16% mild harm
- 51% no harm
- 25% indicated an unknown harm level or a harm level was not assigned

Events in the “other” category include multiple events documenting deviation from protocol or breach of protocol. Communication is a large component of this category. Dispatch errors include providing the EMS crew with a wrong address, or sending the wrong unit. Communication between EMS providers, dispatchers and hospitals as to correct destination is shown to be a contributing factor in delay of care of a patient. This can be a critical issue when dealing with a Time Critical Condition, or pediatric or perinatal patient.

Lessons Learned

Events which resulted in death/severe harm included:

- Communication errors regarding hospital destination
- Breach of protocol
- Miscommunication regarding end of life orders

Ensure policies and standardized protocols are available for providers. Review standardized protocols annually and ensure that tools needed to follow them are provided to the crew.

Work with dispatching agencies to correct scene addresses and destinations to minimize delay in care. Utilize communication tools such as a check-back to verify and validate information. Be cognizant as to challenges in communication. Distractions can sometimes pull the providers’ attention from the tasks at hand. Varying communication styles can contribute to similar issues.

Develop an appropriate protocol for handling refusals and ensure when utilizing it that the patient is able to verbalize understanding and is mentally competent to understand the consequences of their actions.

Resources

EMS: PS-10  http://www.centerforpatientsafety.org/emsforward/

AHRQ - SBAR Technique for Communication: A Situational Briefing Model
  https://innovations.ahrq.gov/qualitytools/sbar-technique-communication-situational-briefing-model

AHRQ - Handoffs and Transitions
  https://psnet.ahrq.gov/perspectives/perspective/170

Transfer of Patient Care Between EMS Providers and Receiving Facilities

Strategy for a National EMS Culture of Safety

Institute for Healthcare Improvement - Develop a Culture of Safety
  http://www.ihi.org/resources/Pages/Changes/DevelopaCultureofSafety.aspx

Center for Patient Safety - Just Culture in EMS
  http://www.centerforpatientsafety.org/just-culture-in-ems/
HOME HEALTH & HOSPICE

Home care (home health, hospice, home and community-based services and private duty) has a unique opportunity to help move patient safety forward. It is the fastest growing sector in healthcare today. Based in the patient’s home, this care setting could be the foundation for improving population health and preventing readmissions.

Since the IOM released its landmark report in 1999, most of the patient safety research has been centered within hospital walls. This year, the National Patient Safety Foundation (NPSF) presented eight recommendations to assist with moving patient safety forward, one of which addresses patient safety across the entire care continuum. Home care is poised to address patient safety, regardless of setting, as its professionals interact on a daily basis with multiple disciplines of healthcare.

Home care has its own unique challenges. Since it is based in the patient’s home and not a controlled environment, the home care professional must find the balance between what is safe and best for the patient within the environment created by the patient and their family. However, many of the patient safety events that occur in hospitals also occur in the patient’s home, including events such as falls, medication events, device events, healthcare-acquired infections and pressure ulcers. However, other potential safety hazards exist in homes that are not present within hospital walls, creating barriers to patient and healthcare worker safety. Examples are unsanitary conditions, cigarette smoke, aggressive pets, clutter to the point of hoarding, or insect infestations. To truly move home care forward in the area of patient safety, research must be completed to assess barriers in the home care arena, which are not present in a traditional healthcare setting.

The other area where home care can help push patient safety forward is in patient safety culture. The NPSF stated in its recommendations that leaders should establish and sustain a safety culture. As the NPSF affirmed, improving patient safety requires an organizational culture that enables and prioritizes patient safety. While safety activities and processes are important, they will not last or be engrained in daily activities until leadership makes patient safety a priority and supports a culture of patient safety.

The Center for Patient Safety is committed to promoting safe and quality healthcare, helping providers design safer processes and systems to reduce medical errors. Driven by the vision of a healthcare environment safe for all patients and healthcare providers, in all processes all the time, the Center serves as a central resource and facilitator to improve the safety and quality of care provided to citizens using a collaborative approach to education, information, resource sharing and learning.

One of the Center’s major tools to identify opportunities for improvement is the PSO database where the participants share events, near misses, unsafe conditions and lessons learned through root cause analyses. This year the Center’s annual PSO report highlights how patient safety isn’t just hospital-based, but rather is carried across the healthcare continuum. Over 400 events within the home care arena were analyzed, which indicates falls and medication errors are highly recurring patient safety events.

What does the future hold for the Center for Patient Safety, home care and patient safety? The goal is for home care providers to take a pledge to establish a culture of patient safety and begin routine implementation of processes that promote patient safety. The Center will continue to reach out and serve as a resource to organizations and focus on three objectives:

- Protecting - personal guidance on how to best protect patient safety and quality analysis and deliberations
- Learning - new opportunities for PSO participants to improve patient safety culture and implement best practices
- Preventing - improved analyses of the PSO database to identify opportunities for providers to reduce adverse events and patient harm

We at the Center are excited to be working with home care providers as we strive to improve patient safety for all individuals across the healthcare continuum.
A fall is a sudden, unintended, uncontrolled, downward displacement of a patient’s body to the ground or other object (e.g., onto a bed, chair or bedside mat). This definition includes unassisted falls and assisted falls (i.e., when a patient begins to fall and is assisted to the ground by another person) and excludes near falls (loss of balance that does not result in a fall) and falls resulting from a purposeful action or violent blow (e.g., a patient pushes another patient).

CPS Findings
334 events reported to the Center for Patient Safety
- 76% of home health/hospice events reported in 2015
- All events reached the patient
- 31% resulted in patient harm
- 75% reported completing a fall risk assessment

Harm Resulting
- DEATH ........................................................................................................... 0
- SEVERE HARM ............................................................................................. 0
- MODERATE HARM .................................................................................... 6
- MILD HARM ................................................................................................. 97
- NO HARM .................................................................................................... 230
- UNKNOWN .................................................................................................. 1
Toileting activities remain a high risk.
• Patient was trying to transfer from their bed to the bedside commode, when their legs gave way and the patient ended up on the floor.
• Patient was sitting on the bedside commode, reached for toilet paper and fell off the bedside commode.

Confusion and dementia play a role.
• Patient fell but due to dementia was unable to recall the details. Spouse states they were in another room but believes the patient stood up and forgot to use walker, tripped, grabbed the rocking chair and fell to the ground with it. Patient went to the emergency department and has a new pain patch on upper back and bruising present to rib regions.

Medication continues to play a role.
• Patient was drowsy and unsteady on his feet during visit. Patient reported falling over their walker. Patient stated “I get unsteady when I first get up.” RN reviewed medications and noted that it looked like the patient had taken several doses of Roxanol 5mg po/sl and Ativan Intensol 0.5mg po/sl over the last few days. In the home there are also many risk factors not associated with being in the hospital, such as the family pet, false sense of independence and not wanting to be a “bother” to family members.

Family Pet
• A patient walked into his residence after a healthcare appointment. The patient ascended a step to enter home when the patient’s two dogs ran under his feet causing him to lose his balance and fall.

False sense of independence
• Patient was in the bathroom and didn’t wait for spouse to return to assist with getting off toilet. Patient stood to pull pants up, lost their balance and fell forward.

Patient not wanting to bother family members
• Spouse stated patient was attempting to get out of bed in the middle of the night to use the bathroom, didn’t want to wake spouse and sat down softly on floor as the patient didn’t have the strength to walk to the bathroom unassisted.

Lessons Learned
• As noted, the majority of events reported in Home Health/Hospice are falls. This follows the national concern, especially among those aged 65 or older.
• When performing a fall risk assessment, include the patient’s pharmacy as a resource, especially if the pharmacy is local. The pharmacist may have a history of all the patient’s medications that may contribute to an increased risk of falls.
• Evaluate the fall risk assessment tool your organization utilizes. Fall risk assessments are not a “one size fits all”. Ensure that the tool fits your patient population and the daily workflow of your organization.
• Make note of the number and any high risk medications the patient is taking.
• Stay up to date on high risk medications, such as:
  ~ Anti-depressants
  ~ Benzodiazepines
  ~ Hypnotics
  ~ Sedatives
• Communicate to family and other members of the healthcare team the patient’s fall risk; include them in the fall prevention plan and interventions.
• Ensure the home environment is adapted to prevent falls: area rugs removed; oxygen concentrators, other equipment, cords and tubing out of the way; bathrooms modified to prevent falls.
• Provide visual reminders for confused patients to use assistive devices.
• Even though it is difficult, because the majority of falls in Home Health/Hospice are unobserved and unassisted, perform a Root Cause Analysis on all falls. Even if the patient is a poor historian in regards to the exact nature/details of the fall, review all medications, the environment and the patient’s disease process. This will help identify patterns and ensure appropriate interventions are utilized.

Resources
Focus on Falls, Home Health Quality
http://www.homehealthquality.org/getattachment/e8b8b534-f70e-43c1-8a79-c597df0bc25/Focus-on-Falls-Section.aspx

CDC: Adult Falls
http://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html

NCOA. Falls Prevention Fact Sheet
https://www.ncoa.org/resources/falls-prevention-fact-sheet/

http://doi.org/10.1177/2042098613486829
A medication or substance event is a patient safety event or unsafe condition involving a substance such as medications, biological products, nutritional products, expressed human breast milk, medical gases or contrast media.

CPS Findings

36 events reported to the Center for Patient Safety
• 8% of total events reported
• 81% reached the patient
• 19% near misses
• 14% resulted in patient harm

Harm Resulting

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Factors associated with medication events
• 69% - communication between team members/other healthcare providers and facilities
• 28% - patient and family education and follow-up
• 25% - transition of care medication reconciliation
• 11% - nurse inexperience

Lessons Learned

Patient and family education is vital.

Implementing effective harm prevention barriers can be a challenge.
• Patient’s spouse left the room while patient was taking medications. Patient took all medications for the day rather than just the morning medications. Spouse notified home health agency and physician. Spouse was instructed to monitor patient, increase fluids and stay with patient for the day as the patient was at increased risk for a fall and change in neurological status.
• Patient had been informed by Coumadin Clinic to alternate Coumadin dosage, 3 tablets one day, 2½ the next. Patient thinks he was taking 4 tablets one day and 5 the next. Patient states they did not write down the instructions and he may even have doubled the Coumadin dose prescribed.

Transition of Care medication reconciliation is a challenge in the home
• RN admitted patient to home health. Multiple discrepancies noted between medication lists provided by primary care physician and the medications present in the home. RN faxed list of medications present in the home to reconcile and provide patient education. Reconciliation not completed for two days.

Staff education and experience are also a vital component in preventing medication errors.

• RNs need to have appropriate experience to accurately assess the patient/patient’s family’s ability to make medication adjustments.
• Patient was prescribed 5 mg of Warfarin but only has 7.5 mg Warfarin tablets in the home. Patient questioned as to how she adjusted the 7.5 mg tablets to 5 mg. Patient stated was told to cut off a sliver of the 7.5 mg tablet.

Resources

Best Practice Intervention Package Medication Management
http://www.homehealthquality.org/getattachment/0dc546b5-9f2b-43f5-93b9-76c7053bbe04/Focused-BPIP-on-Medication-Management.aspx

CHAMP Geriatric Medication Management Toolkit
http://www.champ-program.org/page/101/geriatric-medications-management-toolkit

Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation

Review of the 3 Step Medication Reconciliation Process
http://www.champ-program.org/static/Review_MedicationReconciliation.pdf

A device or medical/surgical supply, including health information technology (HIT) event is a patient safety event or unsafe condition involving a defect, failure, or incorrect use of a device, including an HIT device.

**CPS Findings**

2 events reported to the Center for Patient Safety, one death

With patients being discharged in a more acute condition than before historically, the trend is to use more complex equipment in the home. Use of advanced medical equipment requires training the patient and the patient's family to appropriately and safely use the medical devices and how to troubleshoot when there are problems.

- Reported death was due to an intravascular air embolism.
- Other event cited inadequate patient education relative to proper equipment use.

**Lessons Learned**

While the data reported to the Center for Patient Safety is very limited, there are general guidelines to improve patient safety regarding the use of devices in the home:

- Ensure all equipment, such as IV pumps, tube feeding pumps, electric beds, scooters, wheelchairs, lifts and assistive devices, is functioning properly.
- Educate patients to:
  - Utilize equipment properly and provide them with contacts to call for trouble-shooting issues.
  - Routinely replace batteries
  - Routinely check equipment for loose electrical wires and broken plugs
- Instruct patient to keep supplies, such as dressing supplies, glucometer strips, etc. readily available

**Automation Brings on New Dangers**

It is not only devices and medical equipment in the home that can contribute to patient harm, but also information technology. With increased use of the electronic health record, IT-related errors have emerged. Reported events include:

- Incorrect patient histories, medication orders, tests or documentation entered into the wrong medical records because staff or physicians selected the incorrect patient name
- Patients with same or similar names challenge staff accuracy
- Software system within a home healthcare agency not interoperable with a hospital software system, which leads to a lack of information thus increasing the risk of patient harm.

**Resources**

**SAFER Guides:** https://www.healthit.gov/safer/safer-guides

**Medical Equipment Maintenance Manual**

**Leaders’ Role in Medical Device Safety (IHI)**
http://www.ihi.org/resources/Pages/Publications/LeadersRoleinMedicalDeviceSafety.aspx

**A Roadmap to Improving Health IT Safety**
CPS Findings
1 event reported to the Center for Patient Safety – no harm

Lessons Learned
The event reported was associated with an exacerbation of diabetic ketoacidosis. This brings to light, that home healthcare is just entering an era of recommended best practices for infection prevention in the home.

Infection prevention in the home is quite different from that in the acute care environment where a healthcare provider needs to be extremely aware of environmental risk factors. In the home environment, the RN needs to be aware of plumbing and ventilation and the effect it could have on the infectious disease process.

The drafted CMS Conditions of Participation require home health agencies to implement and maintain an infection prevention program to prevent and control healthcare associated infections in their patients’ environments.

While research is sparse for infection prevention best practices in the home healthcare arena, following basic infection control practices and educating patients and their families is a good starting point.

Resources

Healthcare – associated Infections Guidelines and Recommendations
http://www.cdc.gov/HAI/prevent/prevent_pubs.html

Infection Control in Home Care
http://wwwnc.cdc.gov/eid/article/7/2/70-0208_article

Infection in home healthcare: Results from national Outcome and Assessment Information Set data
http://www.ajicjournal.org/article/S0196-6553(14)01424-2/abstract

Top CDC Recommendations to Prevent Healthcare-Associated Infections
http://www.cdc.gov/HAI/pdfs/hai/top-cdc-recs-factsheet.pdf

Tennessee Home Health Agency Finds Success with CAUTI Rate Reduction
http://www.homehealthquality.org/getattachment/45ccb800-0f86-4330-8774-faa7086be13c/CAUTI-Rate-Reduction-Success-Story.aspx

Home Health Conditions of Participation

A healthcare – associated infection event is a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) acquired during the course of treatment within a healthcare setting.
A pressure ulcer event is a pressure ulcer or suspected deep tissue injury that was 1) not present on admission (i.e. newly – developed) or 2) worsened during the patient’s stay. The definition excludes mucosal, arterial, or venous ulcers, diabetic foot ulcers, and ulcers in patients receiving palliative care.

CPS Findings
1 event reported to the Center for Patient Safety – no harm

Lessons Learned
Education of the patient is vital. Patients receiving home health for education on utilization of new prosthetics should be taught to observe and assess the prosthetic and their skin on a daily basis.

- The patient removed a lower extremity prosthetic and discovered a small plastic vial of nebulizer in bottom of prosthesis socket, which caused a stage 1 pressure ulcer.

Pressure ulcers can be a serious patient safety concern in home healthcare. Risk factors include immobility, poor nutritional status, incontinence, complex disease process and dehydration. Many patients who develop pressure ulcers while on home health are recovering from an accident or a traumatic health event, such as a stroke.

Pressure ulcers can cause debilitating pain, readmission to the hospital, diminished quality of life and death. The cost is also substantial as it has been estimated that the treatment of pressure ulcers is over $11 billion annually (Reddy M, Gill SS, Rochon PA. Preventing pressure ulcers: A systematic review. JAMA. 2006;296:974-984.).

Prevention is the key to avoid multiple consequences. The resources listed provide many toolkits to assist organizations in implementing/improving a pressure ulcer prevention program. Major steps include:

- Assess skin of every patient upon admission
- Inspect skin and reassess any areas of concern with each visit
- Education the patient and the patients family so as to optimize nutrition and hydration
- For patients who are immobile at home instruct the family to minimize pressure by turning/repositioning at-risk patients every two hours and utilizing pressure redistribution surfaces

Resources
Guide to Prevent Pressure Ulcers – IHI
http://www.ihi.org/resources/Pages/Tools/HowtoGuidePreventPressureUlcers.aspx

Pressure Ulcer Toolkit – Primaris
http://primaris.org/tool/complete-pressure-ulcer-prevention-pup-toolkit

Protocols for Prevention of Pressure Ulcers in Home Care

Preventing pressure ulcers in the home requires creative solutions by nurses
CPS Findings
64 events reported to the Center for Patient Safety, 2011 - 2015
• 15% of total events reported
• 98% reached the patient
• 2% near misses
• 27% resulted in patient harm

Harm Resulting
DEATH..............................1
SEVERE HARM...........................0
MODERATE HARM.........................1
MILD HARM................................15
NO HARM..................................45
UNKNOWN..................................2

Factors associated with other events
• 38% involved communication between
  ~ team members
  ~ primary care physician and home health nurse
  ~ discharging facility and receiving home health agency
• 9% associated with processes for setting up supplies in the
  home and setting up home care services such as social work,
  PT and lab draws
• 6% involved patient behavioral issues, such as narcotic misuse
  by patient or patient smoking while utilizing oxygen
• 3% involved issues with utilization of information technology
  systems

Lessons Learned
Transitions require standardized communication processes to
prevent miscommunication and provide a clear plan of care
Standardized processes will prevent patient harm and help ensure all
healthcare providers are kept up to date on the patient’s progress and
condition.
• Home health referral received for skilled nurse to check incision and review dressing change technique. Patient called the agency requesting a nurse to change her dressing. Discharge orders were reviewed, no orders for wound care and no documentation of wound in discharge paperwork. RN sent to home and discovered an abdominal incision and stage 2 pressure ulcers. Physician contacted and admission orders changed.
• Medication list in discharge paperwork did not match what the patient had in the home and what the spouse reported the patient had been taking. Spouse reported patient had been on a sliding insulin scale and on Coreg for heart condition; neither medication was listed on the discharge paperwork. Multiple phone calls to the hospital physician and the inpatient pharmacist clarified medication list and further follow up showed that patient had been on these in the hospital and had received both prior to discharge from the hospital.
• Patient discharged from hospital with Albuterol nebulizer treatments ordered. When RN arrived at the patient’s home, there was no nebulizer. DME company had not been contacted to deliver nebulizer.

Handoffs between team members are critical to prevent patient harm and provide quality care
Consider utilizing standardized handoff communication tools when handing off care to another member of the team, and standardized processes for planning visits upon admission.
• Patient admitted to Hospice and social worker visit missed due patient’s admission.
• Patient has order for lab work every Monday for CBC, CMP, CRP and every Thursday for CBC. When patient was admitted, visits were put into the schedule for Tuesday and Friday while labs were ordered for Monday and Thursday. Schedule discrepancy noted when labs were drawn on Tuesday instead of Monday.

Behavioral Health represents a specialized patient population and potential barrier to patient safety in home health
It includes events such as suicide and purposeful harmful behavior by the patient. This is an area which needs further research to develop best practices to prevent patient harm.
• Patient in Hospice Program and is oxygen dependent. Patient lit a cigarette while she had oxygen on at 6 liters/minute which sparked a fire. Patient was transported to the ED and treated for second degree burns.
• Patient was residing with his son. Hospice on-call nurse received a call from the answering service requesting her to call patient’s residence. The RN called and spoke with patient’s ex-wife, who reported the patient was on his way to the ED after catching his face on fire while smoking with oxygen in use.
• Received a phone call from patient’s son stating he had received a call from a police officer that the patient had shot himself. Home Health team unaware that patient owned a gun.

Information technology can help, but can also cause issues with patient safety
• When order was put in for bath aides, the wrong option was chosen in the electronic health record. Consequently, patient missed bath aide visit.
• After reviewing orders on laptop for client, Keppra and Vimpat levels were drawn. Received notice from case manager that lab order had been discontinued. The orders on the laptop are different from the orders on the server. This is not the first occurrence of order discrepancy.

Resources
Hot Topics in Healthcare: Transitions of Care: The need for a more effective approach to continuing patient care
http://www.jointcommission.org/assets/1/18/hot_topics_transitions_of_care.pdf

Home Health and Care Transitions

Understanding Care Transitions as a Patient Safety Issue

Improving Care Transitions Between Hospital and Home Health: A Home Health Model of Care Transitions

TeamSTEPPS: Strategies and Tools to Enhance Performance and Patient Safety