Massachusetts Board of Registration in Medicine
Quality & Patient Safety Division

Spring 2025

Spotlight on Quality & Patient Safety

Spotlight on Quality & Patient Safety is issued by the Massachusetts Board of Registration in Medicine Quality & Patient Safety Division (QPSD) to share aggregate Safety and Quality Review (SQR) report data and to share performance improvement initiatives being achieved by some of the hospitals, ambulatory surgery centers, and clinics in the Commonwealth. The QPSD would like to thank **Boston Medical Center** for contributing to this issue of *Spotlight*.

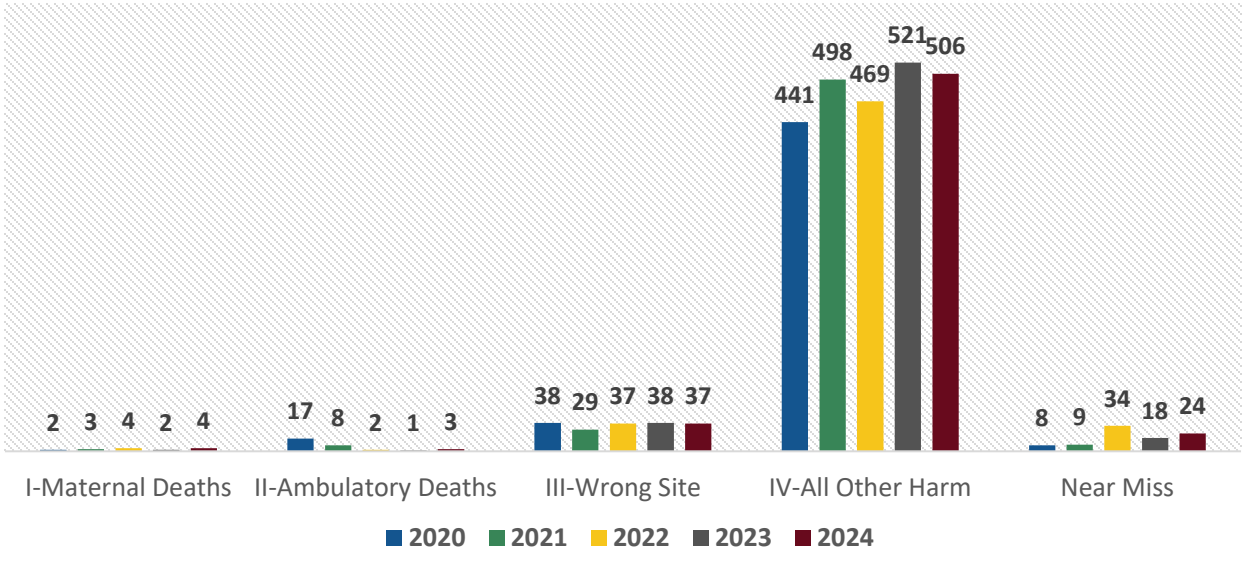
As part of regulatory reporting, healthcare organizations submit events of unexpected patient outcomes (SQR reports) to the QPSD. The first graph represents a breakdown of the major categories reported via SQR submissions. There were 574 SQR reports submitted in the calendar year (CY) 2024. Within those 574 SQR reports, 692 events were reported. This is because some reports included more than one event. Additional aggregate data is also provided. Trends noted in SQR reporting are listed on page nine.

Save the Date: The 2025 BORIM QUALITY & PATIENT SAFETY COMMITTEE CONFERENCE.
See page 9 for details!

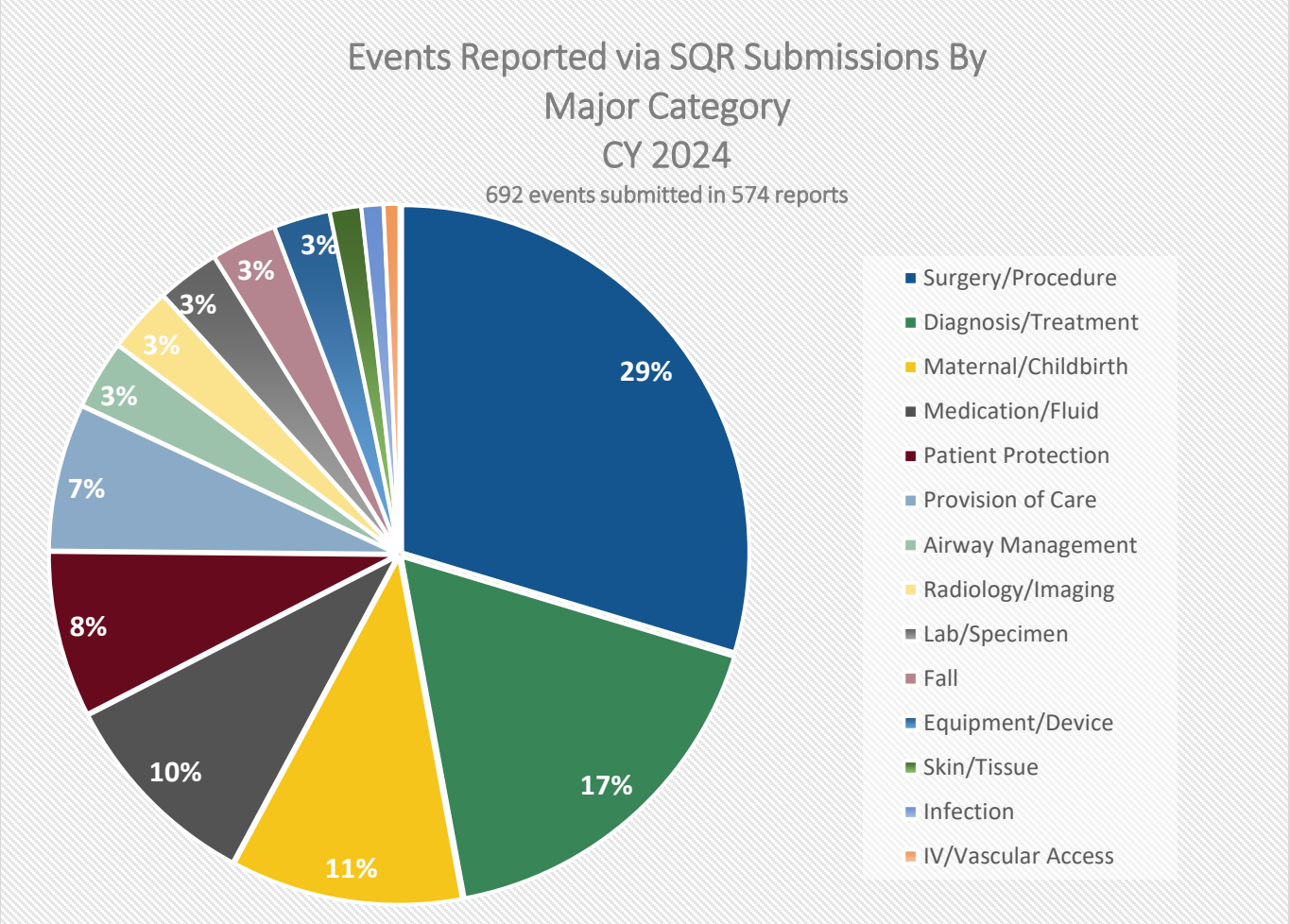
BE FEATURED IN THE FALL 2025 SPOTLIGHT

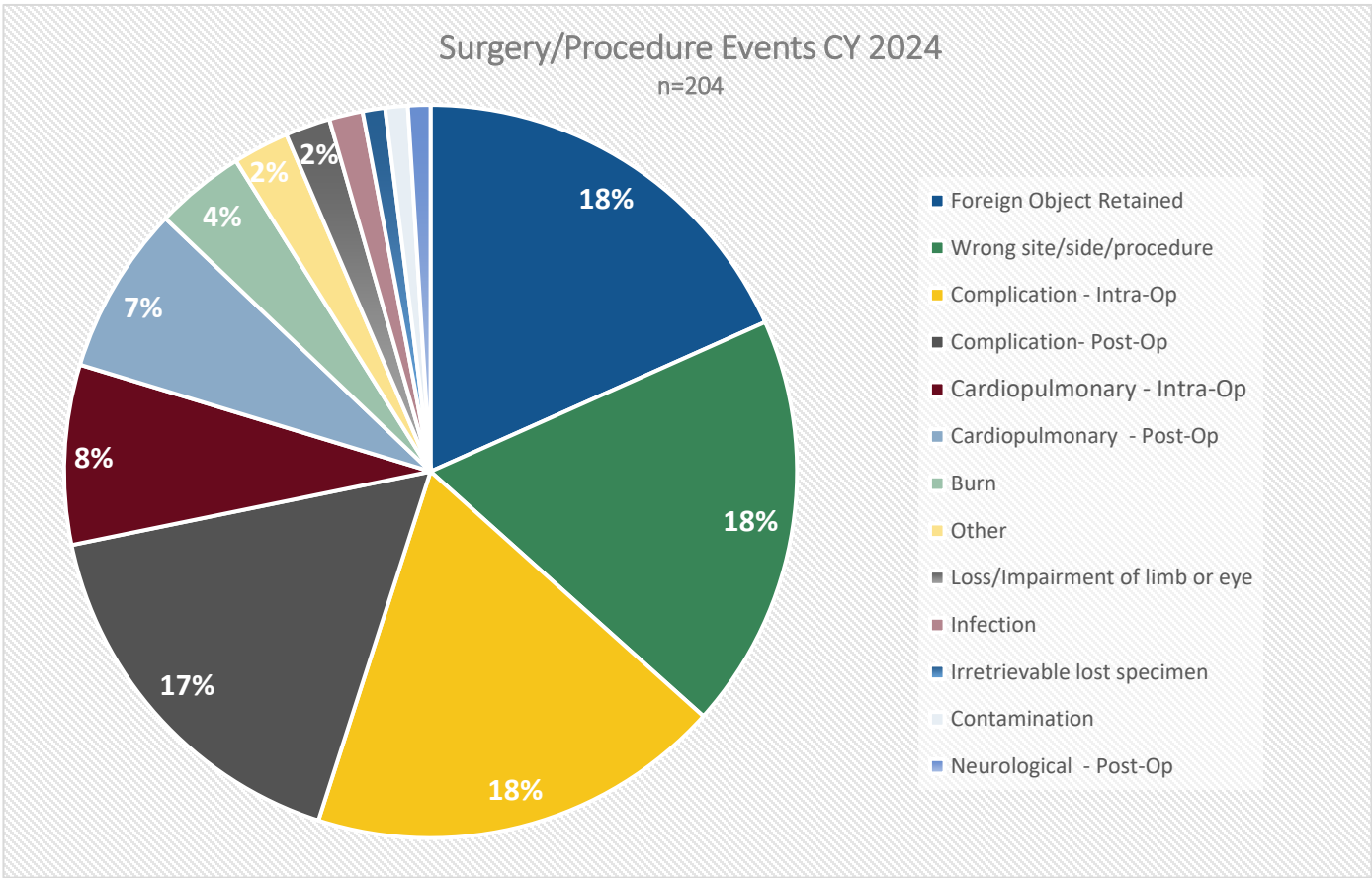
If you/your healthcare facility are interested in submitting an article for publication, please reach out to Trinh Ly-Lucas, MSN, AGNP-BC
Trinh.ly-lucas@mass.gov

SQR Report Submissions By Event Type



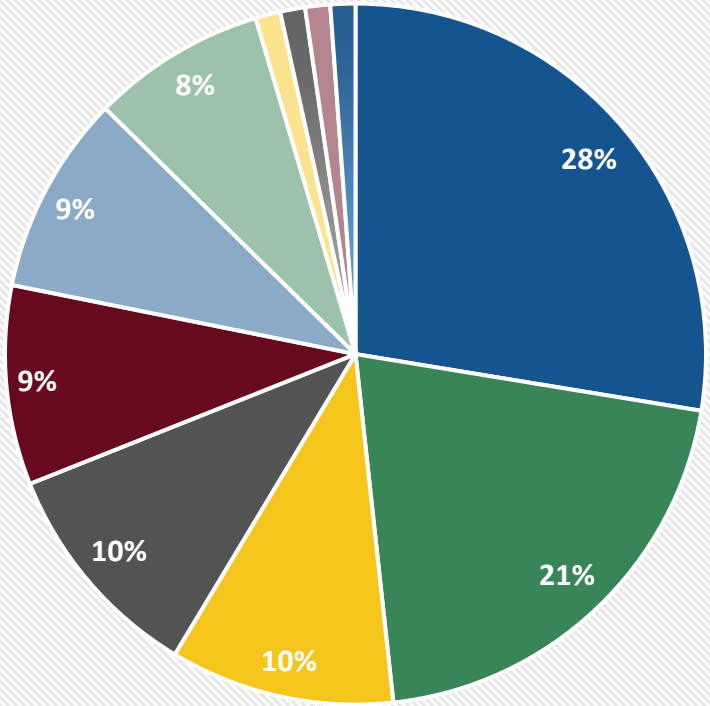
QPSD Mission is to assist Massachusetts healthcare facilities in maintaining and improving systems for patient care that are evidence and team based, sustainable, safe, and inclusive. We achieve this by reviewing data, listening, collaborating, and educating teams in healthcare facilities throughout the state.


Events Reported via SQR Submissions By Major Category
CY 2024
692 events submitted in 574 reports
29%
17%
11%
10%
8%
7%
3%
3%
3%
3%
3%
Surgery/Procedure
Diagnosis/Treatment
Maternal/Childbirth
Medication/Fluid
Patient Protection
Provision of Care
Airway Management
Radiology/Imaging
Lab/Specimen
Fall
Equipment/Device
Skin/Tissue
Infection
IV/Vascular Access


Surgery/Procedure Events CY 2024
n=204
18%
18%
18%
17%
8%
7%
4%
2%
2%
Foreign Object Retained
Wrong site/side/procedure
Complication - Intra-Op
Complication- Post-Op
Cardiopulmonary - Intra-Op
Cardiopulmonary - Post-Op
Burn
Other
Loss/Impairment of limb or eye
Infection
Irretrievable lost specimen
Contamination
Neurological - Post-Op

Location of Reported Delays in Diagnosis/Treatment CY 2024

n=87

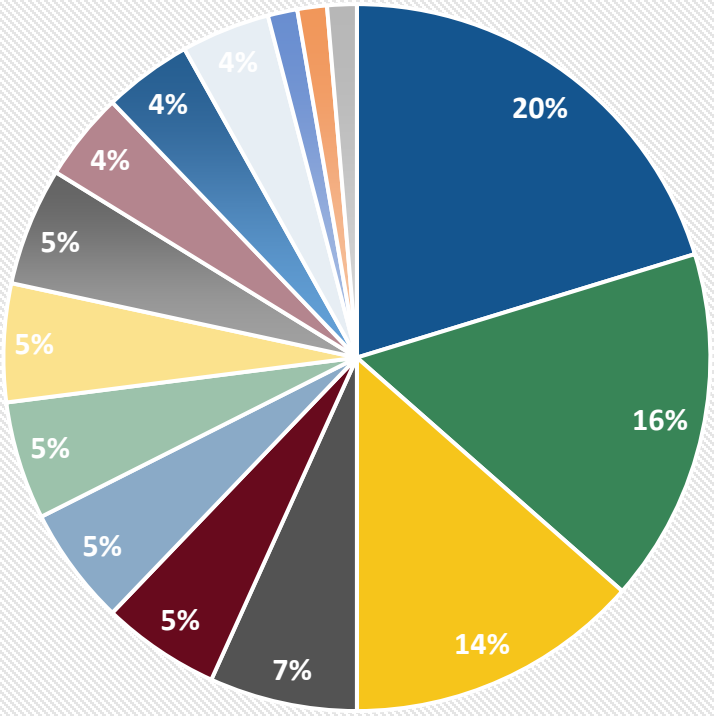


73% of all diagnosis/treatment events were delays in diagnosis/treatment

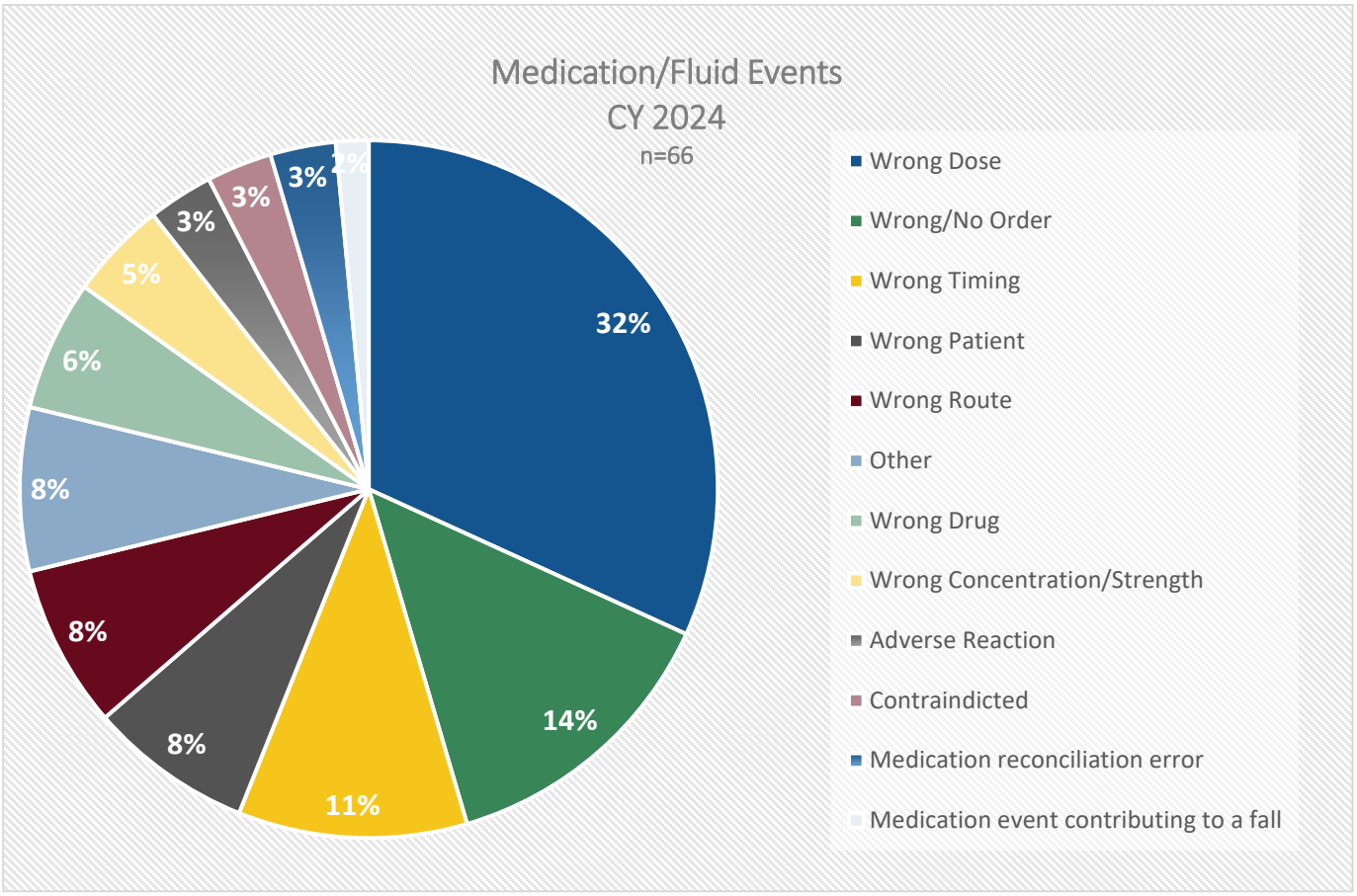
- Emergency Department
- Med/Surg
- Maternal/Child Unit
- Radiology/Imaging
- Intensive Care Unit
- Operating Room
- Outpatient unit/clinic
- Behavioral health
- Laboratory/Pathology
- Interventional
- Pediatrics

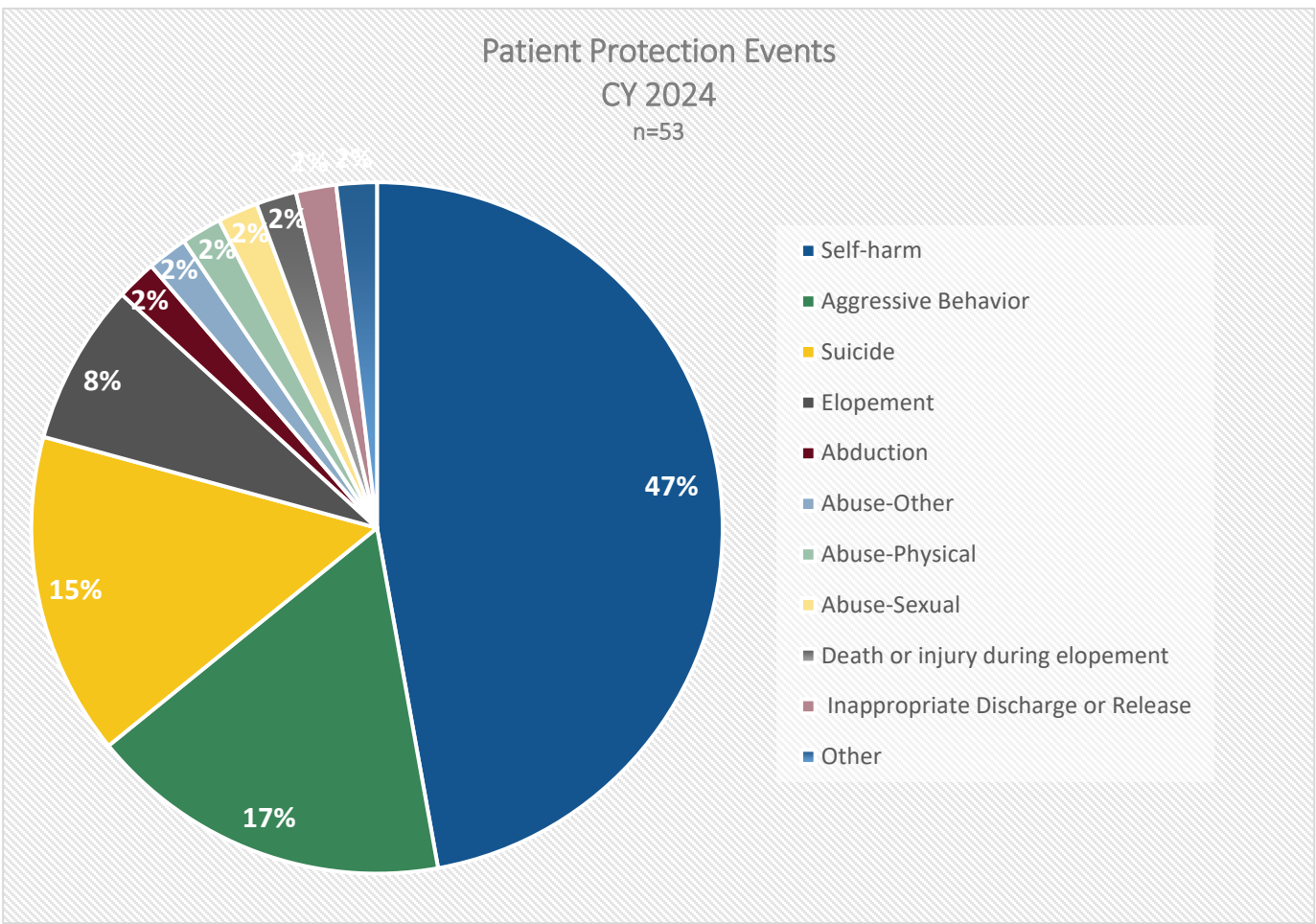
Maternal/Childbirth Submitted Events CY 2024

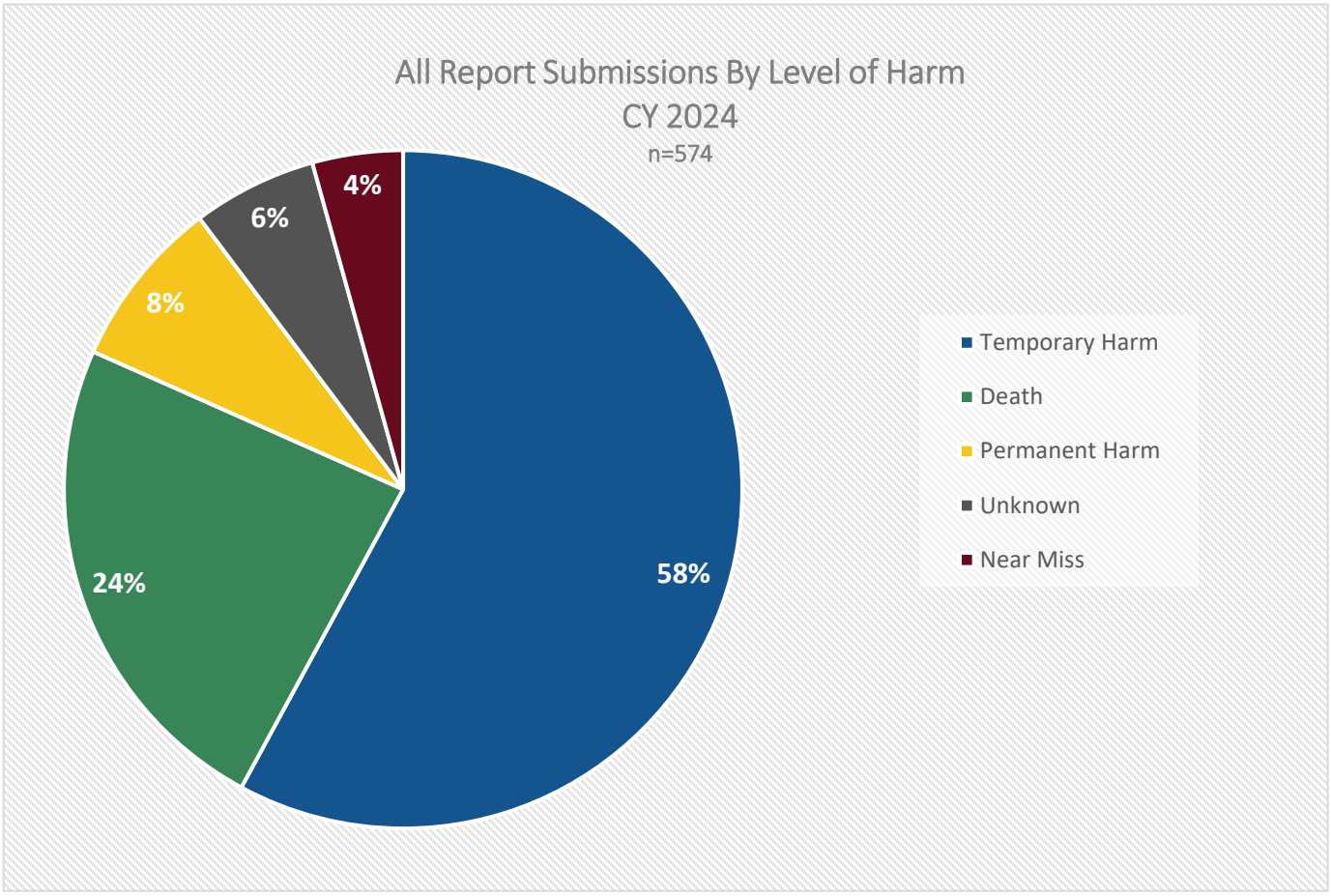
n=74

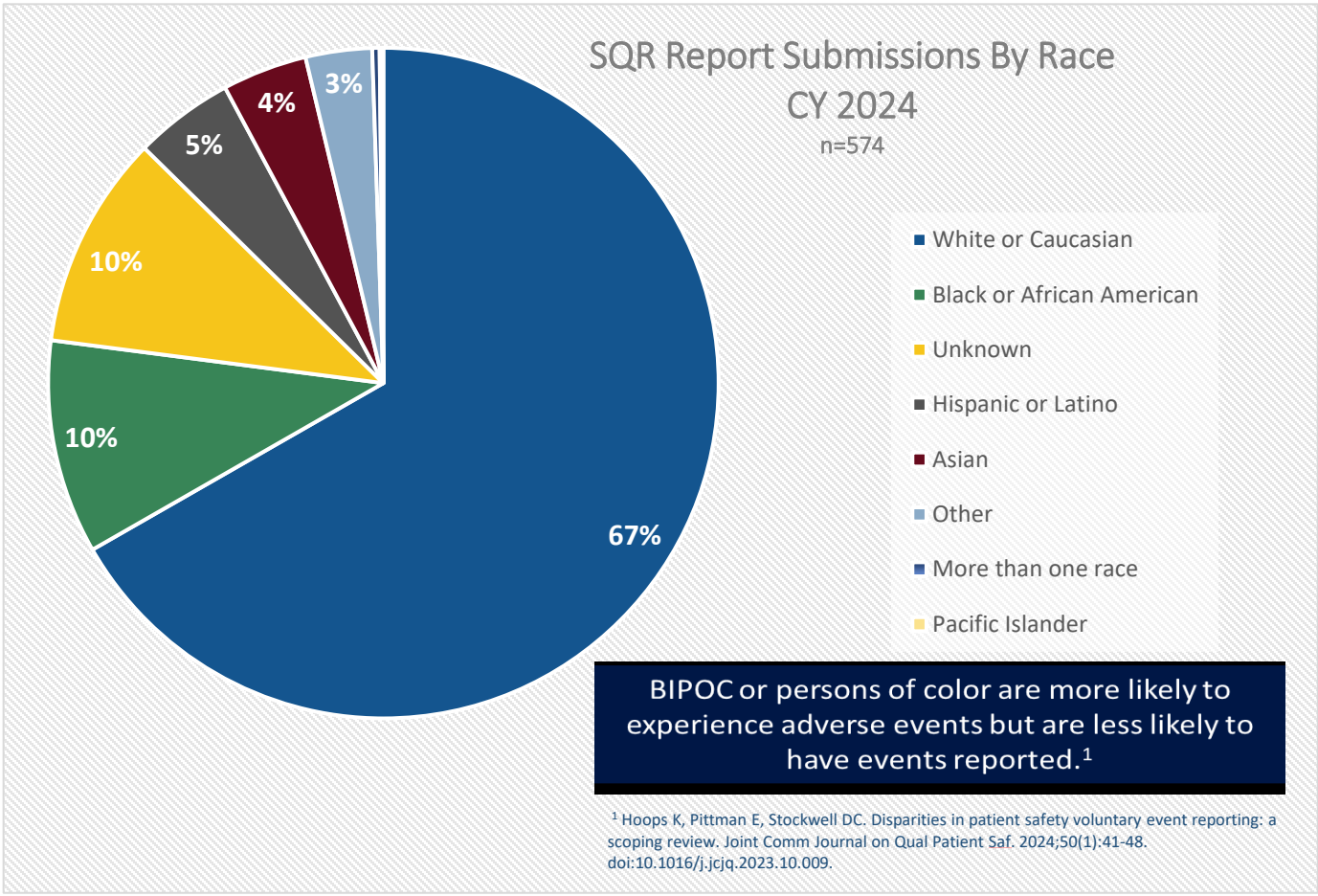


- Neonate - Injury
- Post-Partum Hemorrhage
- Neonatal/Fetal - Death
- Other
- Maternal Death
- Shoulder dystocia
- Uterine Rupture
- Event Related to FHT
- Foreign Object Retained
- Unexpected Transfer ICU/NICU
- Anesthesia-related event in OB
- Cardiovascular event
- Maternal – Infection
- Failed instrument delivery
- Complication cesarean section


Medication/Fluid Events
CY 2024
n=66
32%
14%
11%
8%
8%
8%
6%
5%
3%
3%
3%
2%
Wrong Dose
Wrong/No Order
Wrong Timing
Wrong Patient
Wrong Route
Other
Wrong Drug
Wrong Concentration/Strength
Adverse Reaction
Contraindicted
Medication reconciliation error
Medication event contributing to a fall


Patient Protection Events
CY 2024
n=53
47%
17%
15%
8%
2%
2%
2%
2%
2%
Self-harm
Aggressive Behavior
Suicide
Elopement
Abduction
Abuse-Other
Abuse-Physical
Abuse-Sexual
Death or injury during elopement
Inappropriate Discharge or Release
Other





BIPOC or persons of color are more likely to experience adverse events but are less likely to have events reported.[1]

[1] Hoops K, Pittman E, Stockwell DC. Disparities in patient safety voluntary event reporting: a scoping review. Joint Comm Journal on Qual Patient Saf. 2024;50(1):41-48. doi:10.1016/j.jcjq.2023.10.009.

PATIENT SAFETY ALERT: CENTRAL LINE-RELATED EVENTS

In the fall of 2024, the QPSD provided the advisory below regarding events related to central line insertions. In the three months that followed, QPSD received eleven (11) additional reports of adverse events involving central lines.

The QPSD is appreciative of the additional education provided by Boston Medical Center in this issue. Please consider distributing the alert and the article to high-risk areas such as interventional radiology, operating rooms, and intensive care units.

The QPSD has received several reports of events involving central line insertions. These events are occurring in interventional areas and at the bedside. The events include:

- **Retained foreign objects: guidewires**
- **Wrong site procedure: lines inserted into an artery instead of a vein, when the error was not corrected before the line was utilized.**
- **Complications: neurologic injury, arterial injury, pneumothorax, tracheal injury, and perforation of adjacent structures.**

Recommendations:

- Utilize line insertion checklist. Consider audit of checklists.
- Standardize the use of ultrasound for vessel localization and guiding the needle to its intended venous location.
- Maintain hold of the guidewire while it is inside the patient.
- Announce 'Guidewire is out" when it has been completely removed.
- Utilize a standardized equipment set for insertion and an appropriately stocked line cart.
- Select the smallest size catheter appropriate for the clinical situation.
- Ensure the post insertion CXR is completed, and the results are communicated and documented BEFORE use.
- Consider the implementation of central venous access line teams if possible.

Resources:

Agency for Healthcare Research and Quality. Central Line Insertion Care Team Checklist. Central Line Insertion Care Team Checklist | Agency for Healthcare Research and Quality (ahrq.gov)

Kolikof J, Peterson K, Baker AM. Central Venous Catheter. [Updated 2023 Jul 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557798/ Central Venous Catheter - StatPearls - NCBI Bookshelf (nih.gov)

Practice Guidelines for Central Venous Access 2020: **An Updated Report by the American Society of Anesthesiologists Task Force on Central Venous Access**. *Anesthesiology* 2020; 132:8–43 doi: https://doi.org/10.1097/ALN.0000000000002864

Patient Care Assessment (PCA) program and online reporting guidance including video tutorials, examples of fictitious SQR reports, and an overview of Patient Care Assessment may be found at:

Patient Care Assessment Program | Mass.gov

Questions and comments may be directed to
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QPS Committee members (Front l, r) William Goodman, MD; Booker T. Bush, MD; Yvonne Y. Cheung, MD, Diane Hanley, RN; Sarah Rae Easter, MD, (Back l, r) Julian N. Robinson, MD; Melissa Sundberg, MD; Pardon Kenney, MD; Michelle Chan, RPh; Michael Henry, MD.
Missing from photo: Marc S. Rubin, MD, Leslie Selbovitz, MD; Meghna Trivedi, MD; Karen Johnson, RN

SPOTLIGHT: Boston Medical Center

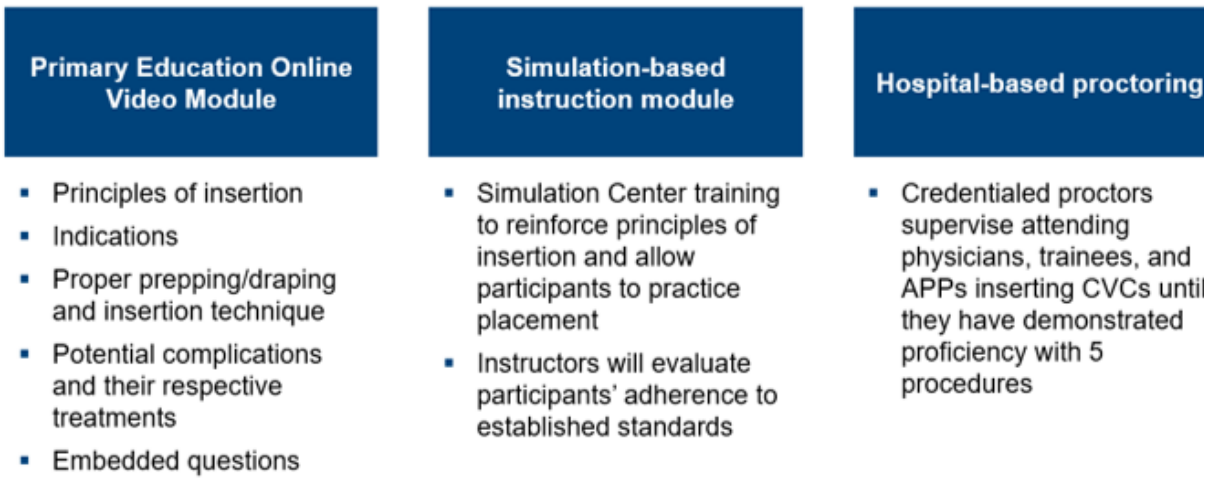
Hospital-wide Standardization of Central Venous Catheter Techniques, Training, and Credentialing

Jeffrey J. Siracuse, MD, MBA, Associate Chair of Surgery for Quality and Patient Safety and Chief of Vascular and Endovascular Surgery
Alik Farber, MD, MBA, Chair of Surgery and Surgeon-in-Chief
David McAneny, MD, Chief Medical Officer
Sabine Clasen, PHD, MSN, RN, Senior Quality and Patient Safety Specialist

Central venous catheter (CVC) placement, for intravenous or hemodialysis access, can be associated with a range of adverse events, including infection, thrombosis, or mechanical complications. The last group includes arterial or venous injury, unintended arterial placement, catheter malposition, hematoma, and pneumothorax or hemothorax. An inadvertent arterial placement can cause adverse consequences such as bleeding, stroke, and harm to adjacent structures, requiring a major operation or intervention to remove the catheter and repair the injury. During a two-year period, we observed a higher-than-expected rate (7.2 versus 1.5-4.6 per 1,000 patients) of vascular mechanical complications following CVC placements. This experience prompted the development of a program for targeted improvement across all specialties that place CVCs.

In 2021, a multidisciplinary group, comprised of specialists who place CVCs, standardized CVC insertion techniques, training, and institutional privileging for attending surgeons and physicians, advanced practice providers (APP), and trainees (fellows and residents). The curriculum requires viewing a video with an imbedded exam that was created internally, a *hands-on* simulation module with expert assessment, and hospital-based clinical proctoring (Figure 1).

Figure 1



We also designed a three-tiered credentialing framework, based upon the candidate's specialty and experience (Figure 2).

Figure 2

	Level 1	Level 2	Level 3
Attending MDs and APPs	Privileged in Interventional Radiology, Interventional Cardiology, Cardiac Anesthesiology, or Vascular Surgery OR Placed or directly supervised ≥20 CVC insertions or central venous cannulations annually	Placed or directly supervised at least an average of 4 CVC insertions or central venous cannulations annually during the past 3 years	Not in Level 1 or Level 2
Trainees	Successfully placed >10 CVCs over a 2-year period AND with training program director's approval	N/A	Any trainee not in Level 1
Online Video	Yes	Yes	Yes
Sim Center	No	Yes	Yes
Hospital-Based Proctoring	No	No	Yes

A quality committee oversees outcomes and adjudicates cases as needed. A recredentialing process was also designed with recredentialing predicated on a minimum number of CVCs placed annually and complication rates. Since program enrollment began in October 2023, nearly 200 attending physicians and APPs have completed the program and been credentialed for placing CVCs. Importantly, no mechanical vascular CVC complications have occurred following implementation of this protocol. This experience affirms that standardization of CVC techniques, training, and credentialing is possible and is associated with improved patient safety. Our next steps include finishing credentialing of trainees as well as ongoing monitoring.

Trends Noted in 2024 SQR Reporting Summary

Surgery/Procedure Events	Diagnosis/Treatment Events	Maternal/Childbirth Events	Medication/Fluid Events	Patient Protection Events	Events Reported by ASCs & Clinics
• Opportunity to improve supervision of trainees • Central line insertion- wrong site (artery not vein) and retained foreign objects (guidewires) • Central line complications with guidewires (perforations) • Spinal level and joint injections-wrong site • Dobhoff feed tube wrong site (no Xray confirmation or incorrect reading) • Complications- hemorrhage/perforation (interventional, endoscopic, and bedside procedures) • Complications involving anastomotic leaks with abscess • Device malfunction (balloon rupture, cautery burns) • Contamination/ use of kits not sterilized	• Gaps in COMMUNICATION o Among specialist consulted o Imaging/Lab result not communicated o Coordination of Care • ED boarders with delays in treatment • EKG readings not appreciated (ED) • Identification of compartment syndrome (ED) • Left without being seen, returned with cardiac issues • Delay in transfers (internal and external) • Delays in calling rapid response (RRT) • Incidental findings (especially breast, colon) not communication with delays in treatment • Arrythmias not noted while on telemetry	• Neonatal Injury o Neurological injury o Skull fracture o Hematoma o Laceration o Circumcision injury o Clavicle fracture/arm injury • Post-Partum Hemorrhage o Abruption o Uterine rupture (during trial of labor after cesarean (TOLAC) o Unplanned hysterectomy o Use of EBL vs. QBL o Delays in calling for massive blood transfusion protocol (MTP) • Neonatal/Fetal Death o Prolonged Category II with worsening features o Inadvertently tracing maternal heart rate o Delay in non-stress test/induction (no room) returning with demise o Sepsis o Unexpected congenital diagnosis • Maternal - Death o Sepsis o Cardiovascular o Covid	• Anticoagulation order issues (especially after transitions in care-most often reported in post-op period) • Medications not reconciled appropriately on admission (most commonly change of dose not reflected) • Paralytic administered inadvertently in pre-op/PACU setting • IV pump concentration incorrect programing • Infusion of entire bag at once due to programming error • Fall with medication error/issue as possible contributing factor • Verbal order (order to "give 5" with 5mL given instead of 5mg)	• Self-harm events o Ingestion o Laceration o Intentional water intoxification o Ligature • Aggressive behavior (most often in adolescent unit, ED boarders) • Suicide o Six reports o Ingestion most common o Ligature-cords of medical devices (CPAP, Oxygen tubing) • Lapses in 1:1 monitoring whereby face and hands of patient are not observed at all times	• Intra and post-operative complications o Perforation (endoscopic) o Cardiovascular complications o Injury to eye o Burns • Wrong site/side surgery o Joint injections o Skin lesions • Provision of care events o Primarily transfers to a higher level of care (cardiac issues) o Issues with "add-on" patients as may not be screened or prepared per policy • Patient Protection events included: o 3 reports of suicide and o 4 reports of self-harm events

The 2025 BORIM QUALITY & PATIENT SAFETY COMMITTEE CONFERENCE

Save the date: October 17, 2025

Full-day conference

More information will be provided this summer.
Registration is NOT currently open.

Chief Executive Officers, Chief Medical Officers, Chief Quality Officers, PCA Coordinators, and Quality and Risk Management colleagues that report to the QPSD will have priority registration. If space is available, conference will be open to all others.