Maryland
DEPARTMENT OF HEALTH

Public Health Services Administration

Maryland Hospital Patient Safety Program Annual Report State Fiscal Year 2024

▸ Issue Date: 12/29/2025

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Executive Summary

The Maryland Hospital Patient Safety Program (MHPSP) exists to promote a safer patient care environment in Maryland hospitals by minimizing preventable harm. This is achieved by holding hospitals accountable for reporting adverse events, investigating their root causes, and developing action plans to reduce the risk of re-occurrence.

In accordance with the regulations governing MHPSP, all hospitals in Maryland must submit a root cause analysis (RCA) to the Office of Health Care Quality (OHCQ) at the Maryland Department of Health (MDH) whenever an adverse event occurs which leads to death or serious disability. Each RCA must investigate human factors and systemic issues which contributed to the adverse event. Every RCA must also be accompanied by a detailed action plan which outlines steps to rectify the event's root causes and prevent similar events from occurring again. OHCQ reviews these materials and provides feedback to strengthen them when appropriate. In addition, OHCQ maintains a database of all adverse events which occur in hospitals across Maryland. These data can be used in aggregate to facilitate transparency, learning, process improvement, and dissemination of effective strategies to advance patient safety.

These medical review committee materials are protected from public disclosure, civil litigation discovery, or Maryland Public Information Act requests by COMAR 10.07.06.09(C) and Health Occupations Article §1–401.

Fiscal Year 2024 was the MHPSP's 20th year of operation. In FY24, the Program completed its transition to the Smartsheet platform, which facilitates more reliable and efficient data collection.

In FY24, the trend of increasing reported annual adverse events continued. Key findings from the report include:

- 979 Level 1 adverse events were reported in FY24, a 21% increase from FY23.
- Reported adverse events fell into the following categories:
    - 64 surgical events
    - 7 product- or device-related events
    - 35 patient protection events
    - 588 care management events (including hospital-acquired pressure ulcers)
    - 44 alleged assaults
    - 218 environmental events (including falls)
    - 23 other events
- 23 deaths were attributed to Level 1 adverse events in FY24, a 53% decrease from FY23.

The rise in reported adverse events in FY24 may be driven in part by increased awareness of reporting requirements. The MHPSP requires hospitals to report all adverse events which qualify as National Quality Forum Serious Reportable Events and Joint Commission Sentinel Events. As OHCQ has engaged in outreach to increase awareness of this expectation (e.g., through email correspondence and

presentations at Maryland Healthcare Education Institute), the number of reported events has increased. Alongside improved understanding of reporting requirements, persistent challenges in the healthcare landscape (including staffing shortages, increased patient acuity, and financial pressures) following the COVID-19 pandemic may also be contributing to an increase in adverse events. Despite these challenges, the decrease in deaths associated with adverse events may reflect improvements in hospitals' responses to adverse events and more effective prevention of severe harm.

In response to the adverse events described in this report, hospitals across Maryland have initiated systemic action to improve processes, foster a culture of safety, and prevent future patient harm. These actions are reviewed and approved by OHCQ. In many cases, they are also strengthened by OHCQ feedback. Several de-identified examples of hospital responses to adverse events are described in this report.

OHCQ remains committed to driving improvement in patient safety across the state. The agency has recently increased its collaborative activities with Mid-Atlantic Patient Safety Center (Maryland's designated Patient Safety Organization) to solicit feedback on MHPSP processes and improve stakeholder communication. Among other initiatives, MHPSP is currently collaborating with patient safety leaders across the state to develop standardized RCA templates with the goal of improving the quality of RCAs and action plans. OHCQ continues to actively explore opportunities to develop partnerships with outside organizations to leverage data for action and share information about best practices to prevent adverse events. In addition, the Maryland Department of Health is exploring the possibility of expanding OHCQ's authority to verify that hospital action plans are being successfully implemented.

Through these actions and others, the Maryland Hospital Patient Safety Program continues to work toward improving the safety of patients in hospitals across the state.

Maryland Hospital Patient Safety Program Overview

The MHPSP was established in March 2004 as part of a nationwide movement to systematically reduce preventable harm in healthcare. This movement arose from the recognition that adverse events frequently stem from flawed systems rather than individual failings. Thus, improving workflows and designing better processes are critical steps to prevent future harm. A non-punitive approach to error reporting ensures that hospital staff feel empowered to report adverse events. When events are consistently reported, then hospitals can take appropriate action to identify the events' root causes and implement meaningful changes to prevent recurrence.

An adverse event is defined by COMAR 10.07.06.02 as an unexpected occurrence related to an individual's medical treatment and not related to the natural course of the patient's illness. COMAR COMAR 10.07.06.02 further divides adverse events into three severity levels:

- **Level 1 event**
  - An adverse event that results in death or serious disability
- **Level 2 event**
  - An adverse event that requires a medical intervention to prevent death or serious disability
- **Level 3 event**
  - An adverse event that does not result in death or serious disability and does not require any medical intervention to prevent death or serious disability.

Of note, COMAR defines "serious disability" as "a physical or mental impairment that substantially limits one or more of the major life activities of an individual," provided that the impairment lasts "more than 7 days" or "still is present at the time of discharge." Adverse events which qualify as National Quality Forum Serious Reportable Events and Joint Commission Sentinel Events are also considered Level 1 Events for reporting purposes.

Any Level 1 event must be reported to OHCQ within five days of the event's discovery. Reporting of Level 2 events, Level 3 events, and near misses is encouraged, but not required by COMAR.

A root cause analysis (RCA) is a structured investigation process used to identify underlying system failures contributing to an adverse event. An RCA must be completed for every Level 1 event and submitted to OHCQ within 60 days. RCAs must also be completed for Level 2 events, but submission to OHCQ is not required. COMAR 10.07.06.06 contains a list of required components for all RCAs. Failure to adhere to these reporting requirements may lead to fines or revocation of a hospital's license.

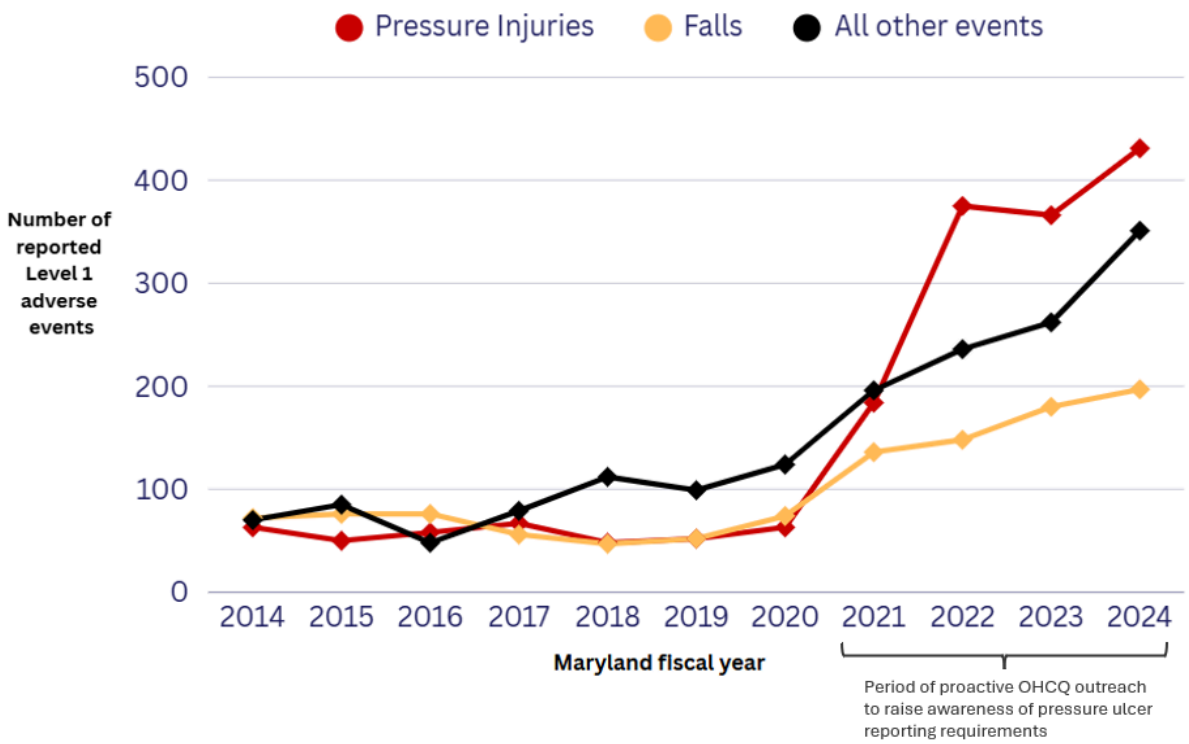
Fiscal Year 2024 Adverse Event Report Data

Reported adverse events have increased in the years following the COVID-19 pandemic.

Approximately 65% of all reported adverse events in FY24 were either hospital-acquired pressure injuries (HAPIs) or falls. OHCQ outreach to raise awareness of HAPI reporting requirements, in particular, has led to significant increases in HAPI reporting.

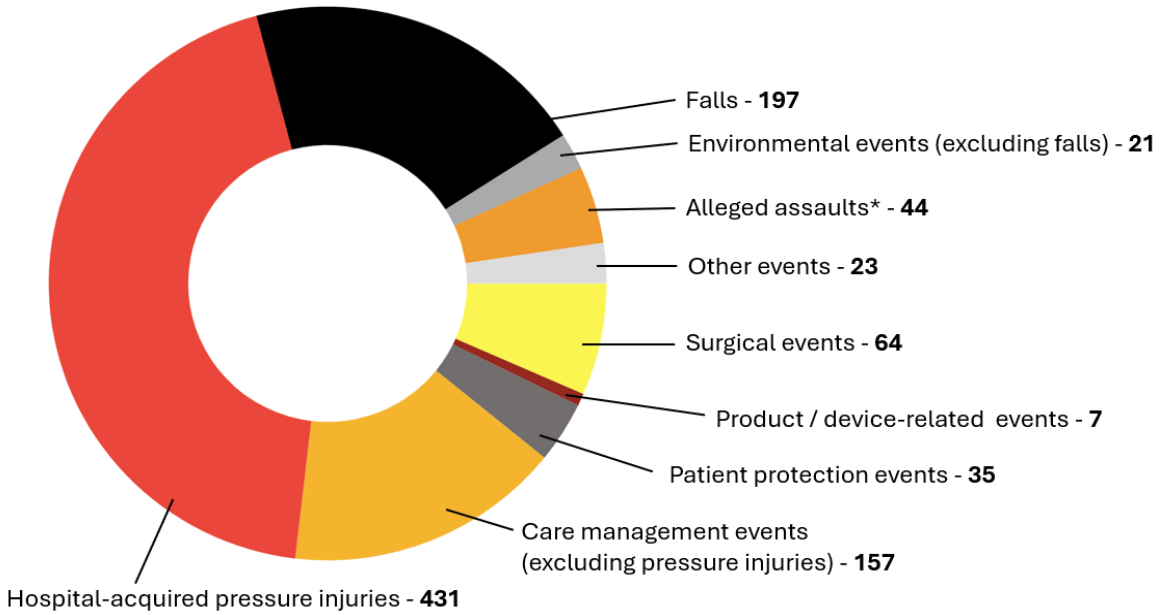
The 10-year trend in reported Level 1 adverse events is displayed in **Figure 1** below.

Figure 1: Reported Level 1 Adverse Events by Event Type
FY 2014– FY2024



Care management events (including medication errors) and environmental events were the largest event categories, driven largely by HAPIs and falls. Surgical events, patient protection events (including elopements), and alleged assaults were other notable categories. A visual representation of events by category is displayed in **Figure 2** below. A complete list of reporting categories (including a list of all specific event types within each category) can be found in **Appendix A**.

Figure 2: Reported Level 1 Adverse Events by Event Category
FY24



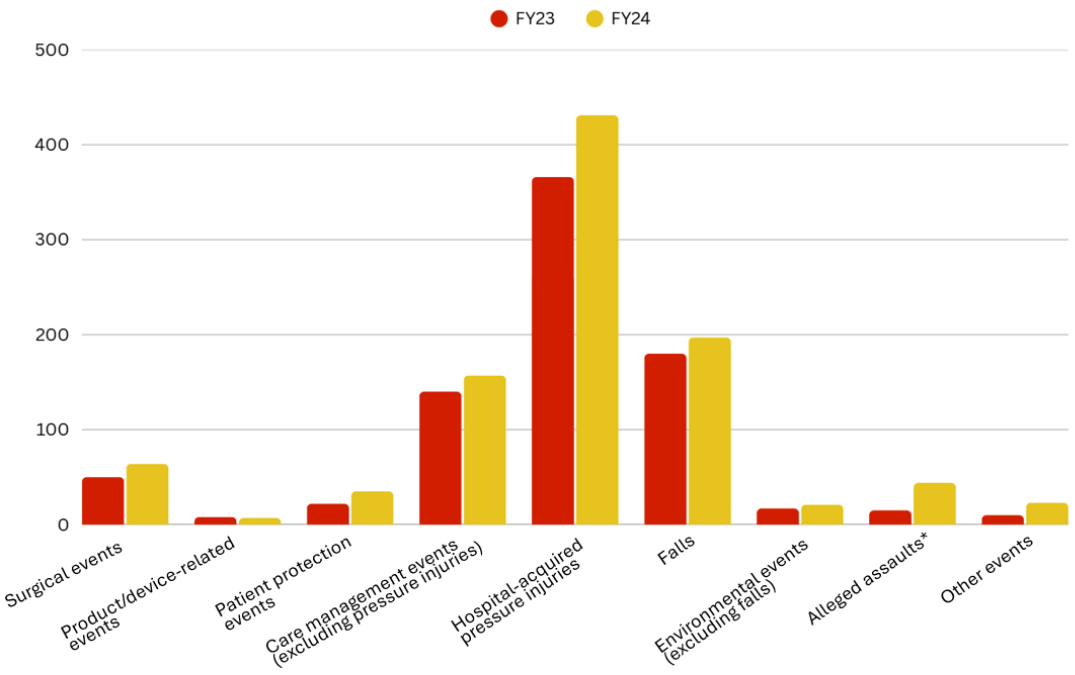
*Includes alleged physical and sexual assaults of patients, hospital staff, and visitors

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The distribution of reported adverse events across categories was similar to patterns seen in FY23, as displayed in **Figure 3** below. The number of reported events increased modestly across all categories except for product/device-related events. The category with the largest absolute increase in adverse events was hospital-acquired pressure injuries (which increased from 366 in FY23 to 431 in FY24).

The category with the largest percentage increase was alleged assaults, which increased 193%. The increase in reported alleged assaults may be due in part to OHCQ outreach which sought to raise awareness of the requirement to report assaults on staff and visitors, in addition to patients.

Figure 3: Reported Level 1 Adverse events by event category FY23 and FY24

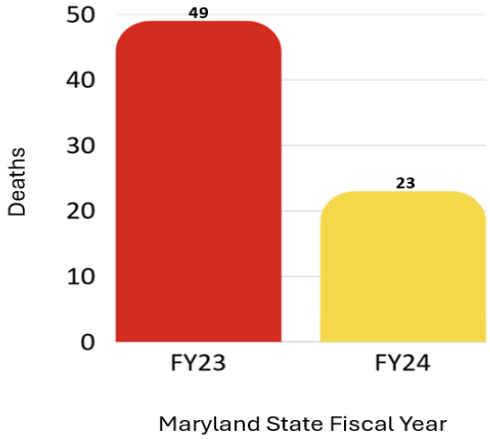


*Includes alleged physical and sexual assaults of patients, hospital staff, and visitors

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Deaths attributed to Level 1 adverse events decreased 53% in FY24, as shown in **Figure 4**.

Figure 4: Deaths attributed to Level 1 adverse events in FY24



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Numbers of reported Level 1 Adverse Events varied by hospital size. Many factors contribute to this dynamic, including patient complexity, administrative support, and robustness of reporting systems across facilities. In FY24, hospitals with 200-299 beds had the highest rate of reported Level 1 events per bed, as seen in **Figure 5**.

Figure 5: Reported Level 1 Adverse Events in Maryland Hospitals by Hospital Size FY24

Hospital Size*	Number of Hospitals	Reported Level 1 Events	Mean Reported Level 1 Events Per Hospital	Reported Level 1 Events Per Bed*
300+ beds	13	434	33.4	0.07
200 - 299 beds	12	299	24.9	0.11
100 - 199 beds	15	200	13.3	0.09
< 100 beds	20	46	2.3	0.04

*Licensed acute care beds in Maryland during fiscal year 2024, per FY24 MHCC Chartbook of Maryland General and Special Hospital Facilities and Services

Hospital Actions in Response to Adverse Events

In response to all Level 1 Adverse Events, hospitals are required to develop action plans and submit them to OHCQ for review. The following actions demonstrate how Maryland hospitals respond to adverse events:

Example 1: Hospital response to patient assault on staff

A patient was brought to a Maryland hospital's emergency department under emergency petition after a physical altercation at home. A healthcare worker went into the patient's room to perform an assessment, and the patient assaulted the employee. The employee called for help but others in the vicinity could not hear. When other employees eventually arrived, their efforts to restrain the patient were delayed due to limited training in techniques to restrain aggressive patients.

In response to this incident, the hospital implemented a "duress alert" on their portable communication devices which allowed emergency department staff to call for immediate safety assistance. They also worked with behavioral health experts to develop new training protocols for healthcare workers to learn restraint techniques and employed electronic health record alerts to provide staff with advance notice of patients displaying potentially aggressive behaviors.

Example 2: Hospital response to esophagram-related aspiration event

A patient was ordered for an esophagram using thin barium liquid despite having recently undergone a speech language pathology (SLP) evaluation indicating that he could not safely ingest thin liquids. As a result, the patient suffered a significant aspiration event.

In response to this incident, the hospital developed a new pop-up alert system which guides ordering providers about how to order a modified esophagram consistent with the patient's diet. This alert system was integrated into the hospital's electronic health record (EHR). In addition, the hospital developed and implemented a new procedure requiring radiology staff to review patients' ordered diets and previous swallow evaluations prior to performing any esophagram.

Example 3: Hospital response to delayed diagnosis of pulmonary lesion

A patient was seen in the ED of a Maryland hospital for abdominal pain and vomiting. Various imaging studies, including a chest X-ray, were obtained. A radiologist's read of the chest x-ray identified a potential lung lesion and recommended a CT scan to further characterize it. The patient was treated for the abdominal pain and subsequently discharged, but the treating provider did not notice the chest x-ray results. Six months later, the patient was seen by a primary care provider for coughing and shortness of breath. Additional imaging and a biopsy were performed, revealing metastatic lung cancer.

In response to this incident, the hospital created a new electronic health record bundle that automatically populates follow-up recommendations from radiology reports into discharge paperwork for patients to ensure they are aware of any recommended studies. The hospital also piloted a process to share study results with treating clinicians via a secure texting system, reducing the likelihood that a clinician could fail to notice a new imaging result. In addition, the radiology department performed staff-wide training on the Critical Value Policy, which requires radiology staff to directly contact the ordering provider to share findings which may impact care.

Next Steps

MHPSP is advancing numerous initiatives to protect patients in Maryland hospitals from adverse events. Key activities include:

- Increased collaboration with Maryland's designated Patient Safety Organization, the Mid-Atlantic Patient Safety Center (MPSC). OHCQ and MPSC are engaged in ongoing conversations regarding opportunities to share data and facilitate educational opportunities about best practices to prevent adverse events.
- Developing a standardized RCA template to support high-quality RCAs and reinforce compliance with COMAR requirements. OHCQ is working with a group of stakeholders to obtain feedback on this template and ensure it can be operationalized within existing hospital workflows.

- Seeking new partnerships and initiatives to address emerging trends in adverse events, leverage data for action, and disseminate guidance about best practices to prevent adverse events.
- Exploring the possibility of expanding the agency's authority to verify that action plans reported in RCAs are successfully implemented.

Conclusions

- FY24 was the MHPSP's 20th year of operation. During this time, the program updated to an improved data collection platform.
- The trend of increasing reported annual events continued in FY24, with a total of 979 Level 1 Adverse Events reported. However, deaths attributed to Level 1 Adverse Events decreased from 49 in FY23 to 23 in FY24. Increases in adverse event reporting may be due in part to increased awareness of reporting requirements and improved safety culture.
- HAPIs and falls collectively accounted for 64% of all Level 1 Adverse Events. This is similar to patterns observed in FY22 and FY23.
- Many Maryland hospitals are making systems-level changes in response to adverse events. Three examples are illustrated in this report.
- Additional efforts to support dissemination of best practices to advance patient safety are warranted. OHCQ is exploring opportunities to facilitate this work.
- OHCQ is designing standardized RCA instruments, increasing its engagement with the state's designated Patient Safety Organization, and exploring the possibility of expanding the agency's authority to verify that hospital action plans are successfully implemented.

Appendix A: Adverse Event Reporting Categories

1. Surgical Services
    a. Body part not consistent with consent
    b. Wrong Patient
    c. Surgical procedure not consistent with consent
    d. Post-surgical retention for foreign body
    e. Intra-op or post-op death in ASA 1 patient
    f. Unanticipated intra-op or immediately post-op death
2. Product or Device Events
    a. Contaminated drug, device, or biologic
    b. Death or serious disability associated with a malfunctioning device
    c. Death or serious disability associated with intravascular air embolus
    d. Infrastructure failure
    e. Death or serious disability associated with the user of a vascular access device
3. Patient Protection Events
    a. Infant discharged to a non-custodial person
    b. Patient elopement
    c. Suicide or attempted suicide resulting in serious disability
4. Care Management Events
    a. Death or serious disability associated with medication error
    b. Hemolytic blood reaction due to administration of ABO-incompatible blood or blood products
    c. Maternal death or serious injury associated with labor or delivery
    d. Death or serious disability associated with hypoglycemia
    e. Death or serious disability associated with failure to diagnose or treat hyperbilirubinemia in neonate
    f. Stage III, IV, or unstageable pressure ulcers acquired after admission
    g. Death or serious disability associated with spinal manipulative treatment
    h. Death or serious disability associated with a staff member's failure to act
    i. Death or serious disability associated with the use of anticoagulants
    j. Death or serious disability associated with misdiagnosis
    k. Death or serious disability associated with a delay in treatment
    l. Death or serious disability associated with airway management
    m. Unanticipated neonatal death or injury
    n. Unanticipated complication of treatment
    o. Death or serious disability associated healthcare associated infection
5. Environmental events
    a. Death or serious disability associated with electric shock
    b. Delivery of wrong or contaminated inhaled gas to patient
    c. Death or serious disability associated with a burn that occurred in a healthcare facility
    d. Death or serious disability associated with a fall

e. Death or serious disability associated with the use of restraints, seclusion, or side rails

6. Criminal events (alleged)
    a. Care ordered by or provided by someone impersonating a physician, nurse or other licensed provider
    b. Patient abduction
    c. Sexual assault of a patient within or on the grounds of a facility
    d. Death or serious injury of patient or staff resulting from physical assault occurring within or on the grounds of a facility
    e. Intentionally unsafe care
7. Other events