

Adverse Health Events in Minnesota

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Adverse Health Events in Minnesota Annual Report | August 2022

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In Minnesota, all hospitals and ambulatory surgical centers are required to report whenever an adverse health event (AHE) occurs and to conduct a root cause analysis to identify the factors that led to the event. While these events represent only a subset of the patient safety risks that exist across the health care system, tracking them over the course of nearly 20 years offers important insight into how performance on these core safety measures has changed over time.

Facility-level data from 2021 is available here: [Adverse Health Events Reporting website: https://www.health.state.mn.us/facilities/patientsafety/adverseevents/adverseselect.html](https://www.health.state.mn.us/facilities/patientsafety/adverseevents/adverseselect.html)

OVERVIEW OF FINDINGS

In 2021, the total number of reported events increased to 508 (up from 382 in 2020). As in years past, pressure ulcers and falls were the most reported events, accounting for 60 percent of the reportable events (Figure 1).

Figure 1: Events by category 2021

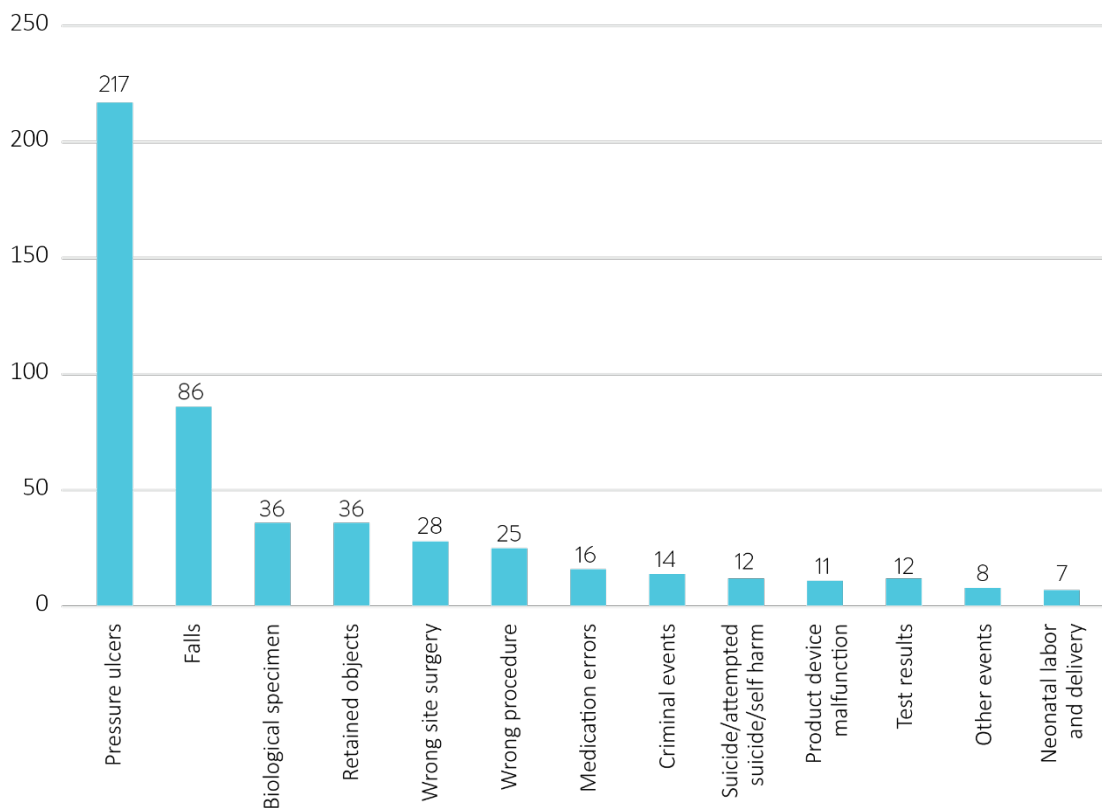


Figure 1: Pressure Ulcers: 217; Falls: 86; Biological Specimen: 36; Retained Objects: 36; Wrong site surgery: 28; Wrong Procedure: 25; Medication errors: 16; Criminal events: 14; Suicide/attempted suicide/self-harm: 12; Product device malfunction: 11; Test results: 12 Other events: 8; Neonatal Labor and delivery: 7.

Of the reports submitted during this reporting period, 40 percent resulted in serious injury (207 events), while approximately two percent (14 events) led to the death of the patient (Figure 2 & 3). The number of reported events has increased, including those resulting in serious injury. Over the life of the reporting system, falls, medication errors and product/device malfunction have been the most common causes of serious patient injury. The pattern with deaths was similar in 2021 as well; six of the 14 deaths were associated with falls, two were associated with a product/device malfunction, three with the death of a neonate, one with wrong body part surgery/invasive procedure, one with a medication error and one after an elopement. It is important to note that not all the events under Minnesota’s adverse health events reporting law have a threshold for the level of harm required to be reportable. Some events, such as retained foreign objects or the loss or damage of a biological specimen, are required to be reported regardless of the level of patient harm. Other events, like falls and medication errors, are only required to be reported when the level of harm to the patient reaches the definition of serious injury in law.

Figure 2: Events with harm

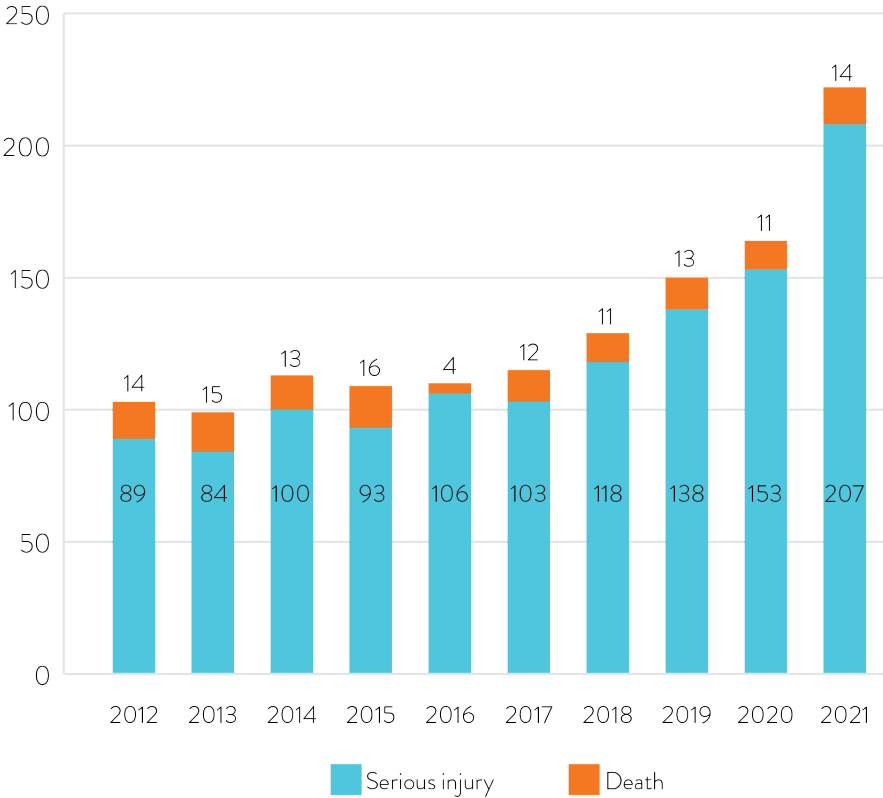


Figure 2: 2012: 89 serious injuries and 14 deaths. 2013: 84 serious injuries and 15 deaths. 2014: 100 serious injuries and 13 deaths. 2015: 93 serious injuries and 16 deaths. 2016: 106 serious injuries and 4 deaths. 2017: 103 serious injuries and 12 deaths. 2018: 118 serious injuries and 11 deaths. 2019: 138 serious injuries and 12 deaths. 2020: 153 serious injuries and 11 deaths. 2021: 207 serious injuries and 14 deaths.

FACTORS CONTRIBUTING TO ADVERSE EVENTS

Prior to 2021, the overall number of events had been stable, and the increase in events during 2021 is attributed primarily to new challenges and increased care associated with the COVID-19 pandemic. Care practices in the COVID-19 environment were rapidly shifting as we learned more about how the disease progressed and, at times, overwhelmed Minnesota's health care system. Clinicians were forced to adapt in real time as hospitals and health systems took care of sicker, higher acuity patients with multiple health concerns and significantly longer lengths of stay.

A review across reported events identified the following issues as themes:

- Length of stay in Intensive Care Unit/Critical Care Units over doubled from 2017 to 2021 (from 2.31 days in 2017 to 5.47 days in 2021). Increased patient complexity due to COVID-19 and other complications arising from delays in seeking care contributed to longer lengths of stay.
- Increased time for staff to put on personal protective equipment before being able to care for a patient and potentially prevent a fall.
- Temporary traveling nurses and clinicians who were unfamiliar with Minnesota health care quality and safety road maps addressing safe skin culture and falls prevention.
- Longer length of stay can increase the time a patient requires the use of a medical device or the time in a prone positioning, both of which can contribute to skin breakdown. Patients with longer length of stay may also result in loss of strength, leading to a greater risk of falling.

Throughout the years, collection of quality data in the patient safety registry has been aimed at transparency and learning from the reported events. The conditions created by the pandemic posed new threats to safe care and data from reported events has served as an important tool to understand the new issues that COVID-19 presented. This information will inform priorities for patient safety efforts in the next year. Minnesota hospitals and health systems have worked hard in the last year to learn and share best practices related to COVID-19 through statewide data analysis and educational webinars related to:

- Pressure injury prevention
- COVID-19 in pregnancy
- Workplace violence prevention
- Sepsis in the COVID-19 era
- Medication safety
- Surgery best practices

In 2022, MDH and its partners will continue their work to improve patient safety in Minnesota, which includes but is not limited to:

- Working with subject-matter experts to continue to monitor and analyze data for quality improvement opportunities and learnings;
- Convening expert committees to share best practices, successes, and challenges;
- Identifying learning opportunities for educational webinars to improve statewide on topics including:
 - o Pressure ulcer prevention
 - o Falls with injury

- o Surgical events;
- Providing tools and resources to hospitals and health systems to support their work in quality and safety;
- Continuing to spread best practices and evidence-based standards related to adverse health event prevention; and,
- Providing 1:1 consultation to hospitals and surgery centers regarding safety practices, root cause analysis, recognition of common causes and new risk factors, developing stronger action plans and monitoring for impact of changes put into place

PATIENT SAFETY REPORTING IN MN – WHAT’S NEXT?

Before COVID-19, MDH had spent over a year gathering input on how to advance the system to better support safe patient care in a rapidly evolving, complex health care environment. Through extensive outreach, the project’s steering team had identified some high-level themes and recommendations that will help to guide our work to evolve the system. However, with COVID-19 continuing to strain our health care delivery system, individuals, and communities, the new landscape of health care will likely look different than it did prior to the pandemic in significant ways. MDH is committed to re-convening our partners post-pandemic to assess how these recommendations for evolution apply in this new environment, and whether they need to be modified.

ADVERSE EVENTS DATA 2004-2021

Hospitals began reporting adverse health events data to the Minnesota Department of Health in 2003, with ambulatory surgical centers joining the list of required reporting facilities in December 2004.

Figure 3: Deaths per year 2004-2021

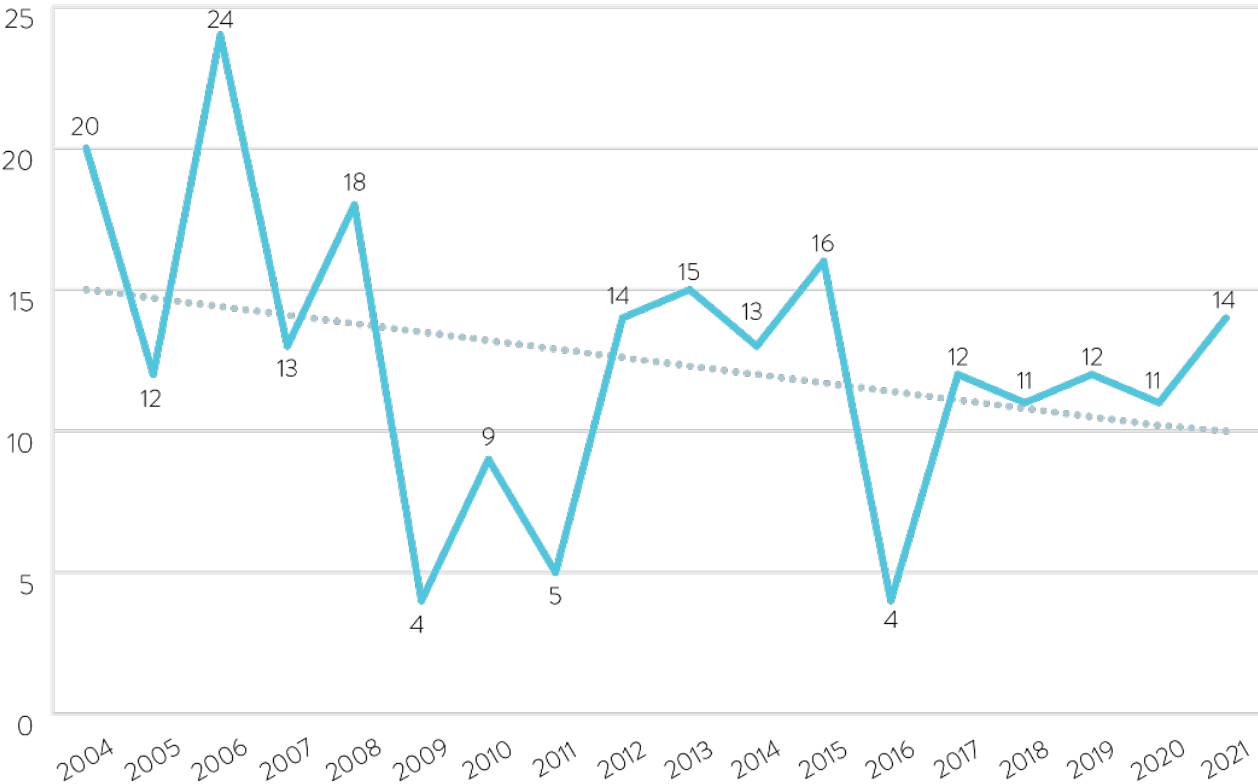


Figure 3: 2004: 20 deaths. 2005: 12 deaths. 2006: 24 deaths. 2007: 13 deaths. 2008: 18 deaths. 2009: 4 deaths. 2010: 9 deaths. 2011: 5 deaths. 2012: 14 deaths. 2013: 15 deaths. 2014: 13 deaths. 2015: 16 deaths. 2016: 4 deaths. 2017: 12 deaths. 2018: 11 deaths. 2019: 12 deaths. 2020: 11 deaths. 2021: 14 deaths.

Figure 4: Falls per year 2004-2021



Figure 4: 2004: 8 deaths. 2005: 3 deaths. 2006: 12 deaths. 2007: 4 deaths. 2008: 85 serious injuries and 10 deaths. 2009: 76 serious injuries and 0 deaths. 2010: 75 serious injuries and 5 deaths. 2011: 68 serious injuries and 3 deaths. 2012: 73 serious injuries and 6 deaths. 2013: 71 serious injuries and 10 deaths. 2014: 73 serious injuries and 6 deaths. 2015: 63 serious injuries and 4 deaths. 2016: 69 serious injuries and 3 deaths. 2017: 78 serious injuries and 5 deaths. 2018: 76 serious injuries and 5 deaths. 2019: 71 serious injuries and 6 deaths. 2020: 57 serious injuries and 4 deaths. 2021: 80 serious injuries and 6 deaths.

*Note, prior to 2008, facilities were only reporting falls that resulted in patient death. In 2008, the law was expanded to include falls resulting in serious injury as well.

Figure 5: Surgical events 2004-2021

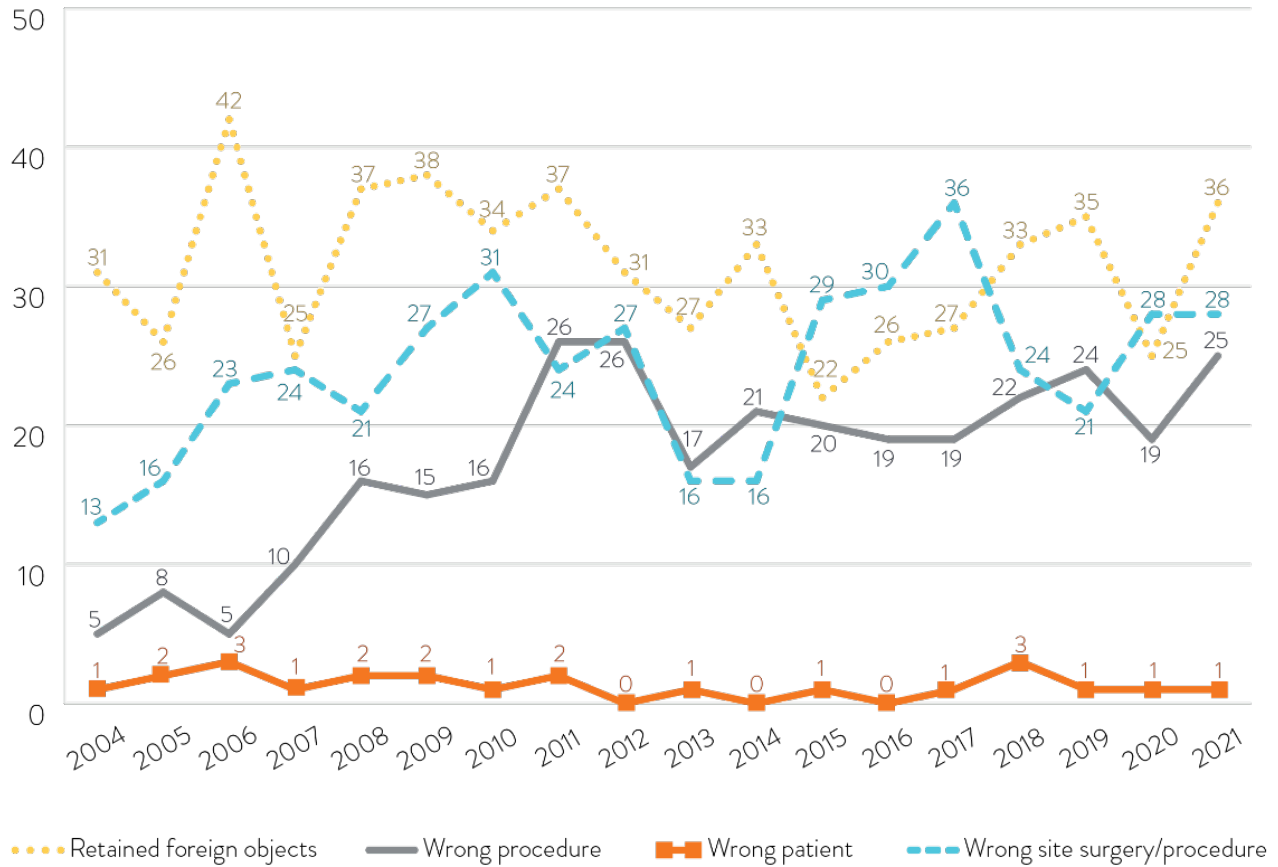


Figure 5 Graph results:

2004: Retained foreign objects (31), wrong procedure (5), wrong patient (1), wrong site surgery/procedure (13).
 2005: Retained foreign objects (26), wrong procedure (8), wrong patient (2), wrong site surgery/procedure (16).
 2006: Retained foreign objects (42), wrong procedure (5), wrong patient (3), wrong site surgery/procedure (23).
 2007: Retained foreign objects (25), wrong procedure (10), wrong patient (1), wrong site surgery/procedure (24).
 2008: Retained foreign objects (37), wrong procedure (16), wrong patient (2), wrong site surgery/procedure (21).
 2009: Retained foreign objects (38), wrong procedure (15), wrong patient (2), wrong site surgery/procedure (27).
 2010: Retained foreign objects (34), wrong procedure (16), wrong patient (1), wrong site surgery/procedure (31).
 2011: Retained foreign objects (37), wrong procedure (26), wrong patient (2), wrong site surgery/procedure (24).
 2012: Retained foreign objects (31), wrong procedure (26), wrong patient (0), wrong site surgery/procedure (27).
 2013: Retained foreign objects (27), wrong procedure (17), wrong patient (1), wrong site surgery/procedure (16).
 2014: Retained foreign objects (33), wrong procedure (21), wrong patient (0), wrong site surgery/procedure (16).
 2015: Retained foreign objects (22), wrong procedure (20), wrong patient (1), wrong site surgery/procedure (29).
 2016: Retained foreign objects (26), wrong procedure (19), wrong patient (0), wrong site surgery/procedure (30).
 2017: Retained foreign objects (27), wrong procedure (19), wrong patient (1), wrong site surgery/procedure (36).
 2018: Retained foreign objects (33), wrong procedure (22), wrong patient (3), wrong site surgery/procedure (24).
 2019: Retained foreign objects (35), wrong procedure (24), wrong patient (1), wrong site surgery/procedure (21).
 2020: Retained foreign objects (25), wrong procedure (19), wrong patient (1), wrong site surgery/procedure (28).
 2021: Retained foreign objects (36), wrong procedure (25), wrong patient (1), wrong site surgery/procedure (28).

Figure 6: Retained Foreign Objects 2004-2021

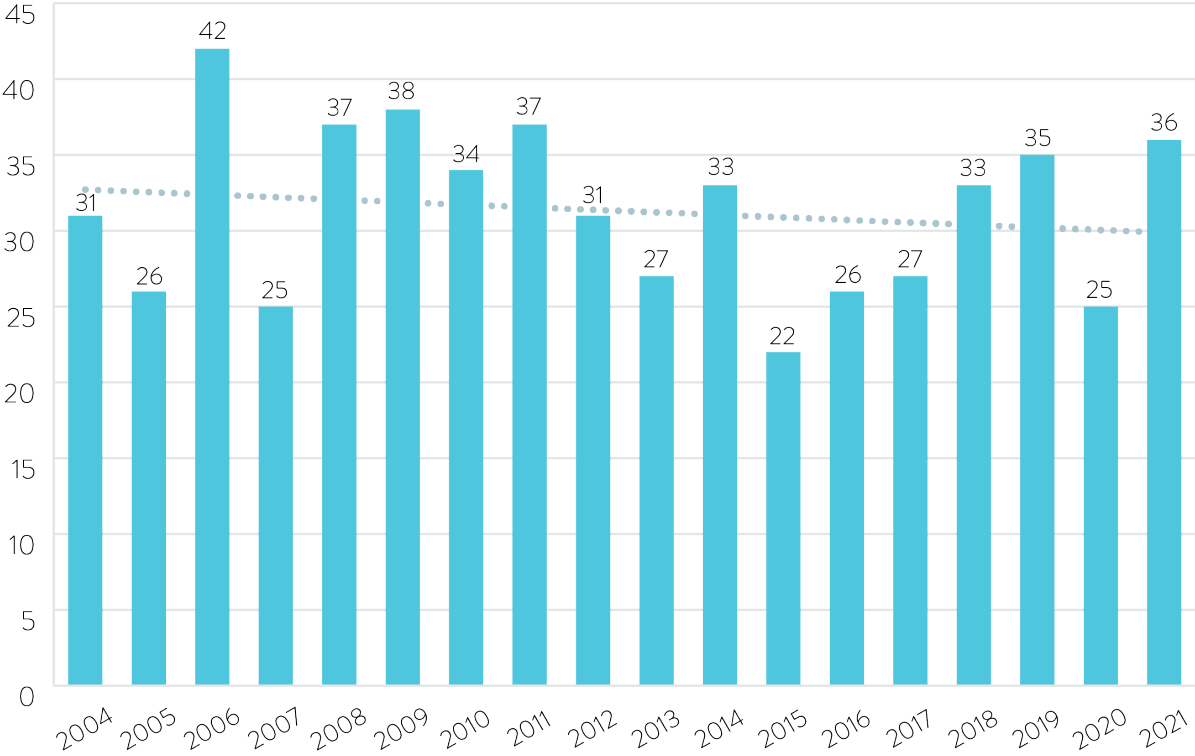


Figure 6 Graph Results: 2004: 31. 2005: 26. 2006: 42. 2007: 25. 2008: 37. 2009: 38. 2010: 34. 2011: 37. 2012: 31. 2013: 27. 2014: 33. 2015: 22. 2016: 26. 2017: 27. 2018: 33. 2019: 35. 2020: 25. 2021: 36.

Figure 7: Reported pressure ulcers 2004-2021

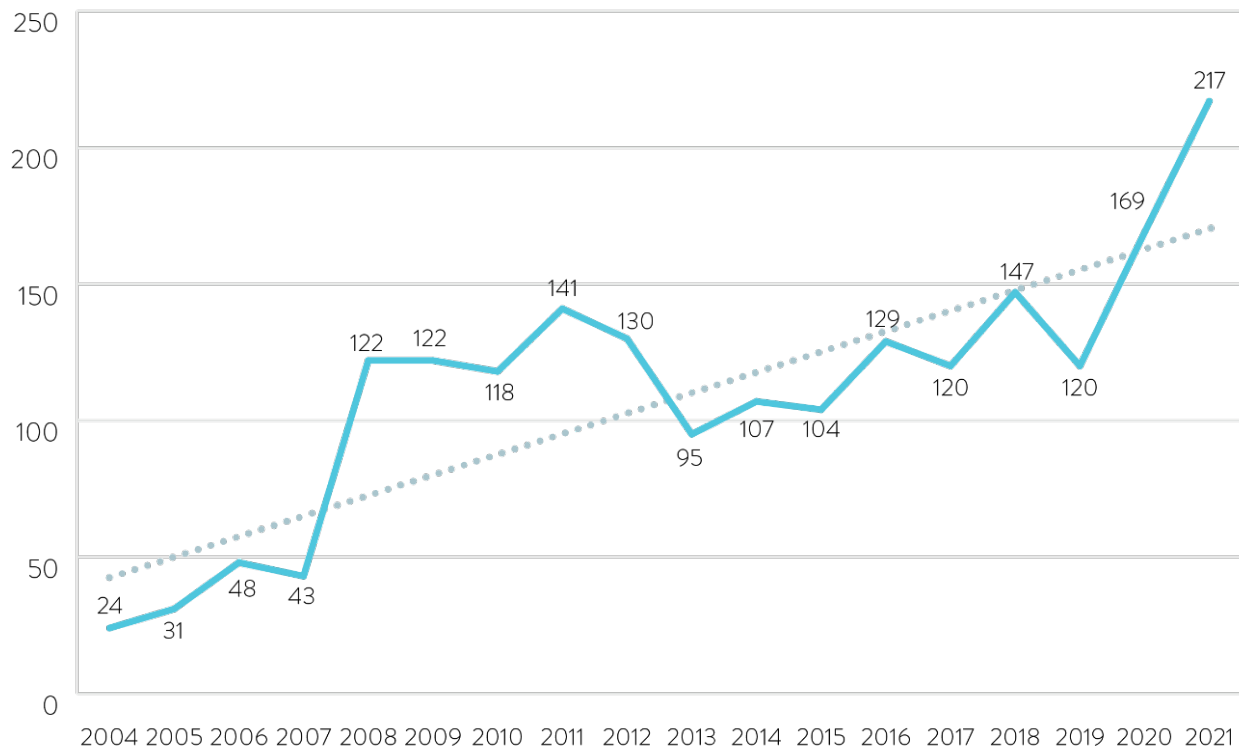


Figure 7 Graph results: 2004: 24. 2005: 31. 2006: 48. 2007: 43. 2008: 122. 2009: 122. 2010: 118. 2011: 141. 2012: 130. 2013: 95. 2014: 107. 2015: 104. 2016: 129. 2017: 120. 2018: 147. 2019: 120. 2020: 169. 2021: 217.

**Note, prior to 2008, facilities were only reporting “stage III and IV” pressure ulcers. In 2008, the law was expanded to include “unstageable” pressure ulcers.*