

Patient Safety Trends in 2023:

An Analysis of 287,997 Serious Events and Incidents From the Nation's Largest Event Reporting Database

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Abstract

Background: The Pennsylvania Patient Safety Reporting System (PA-PSRS) is the largest repository of patient safety data in the United States and one of the largest in the world, with over 4.7 million acute care event reports dating back to 2004. In this article, we analyze the patient safety event reports submitted to PA-PSRS in 2023.

Methods: We extracted data from PA-PSRS and obtained data from the Pennsylvania Health Care Cost Containment Council (PHC4). Report counts are based on report submission date, and rates are based on event occurrence date and calculated per 1,000 patient days for hospitals or 1,000 surgical encounters for ambulatory surgical facilities (ASFs).

Results: In 2023, 287,997 reports were submitted to PA-PSRS, which is a considerable increase from 2022 but very close to the 2021 total. Reports of serious and high harm events increased by 20.6% and 25.0%, respectively, representing the largest annual increases historically. Of the 287,997 reports, 96.0% were from hospitals, 3.8% were from ambulatory surgical facilities, and 0.2% were from birthing centers and abortion facilities. The vast majority (95.9%) of the 2023 reports were incidents, with the

remaining 4.1% classified as serious events. The reporting rate based on event occurrence date for hospitals in the first half of 2023 was 30.0 reports per 1,000 patient days; for ASFs, the rate was 9.9 reports per 1,000 surgical encounters. For each of the past five years, the most frequently reported event type was Error Related to Procedure/Treatment/Test, which accounted for 33.1% of acute care event reports submitted in 2023. From a distribution perspective, the greatest increase in percent of total reports in 2023 occurred with event type Medication Error, and the greatest increase for serious events was with event type Complication of Procedure/Treatment/Test (P/T/T). Almost half of the increase in Complication of P/T/T was with subtype Complication following surgery or invasive procedure (48.2%; 968 of 2,009), and 54.6% (529 of 968) of reports in this subtype were due to unplanned returns to the operating room.

Conclusion: The number of total reports, serious events, and high harm events, as well as preliminary reporting rates for hospitals and ASFs, all increased in 2023. Patient Safety Authority will continue working with Pennsylvania healthcare facilities to support high-quality reporting and patient safety practices.

Introduction

Pennsylvania is the only state that requires healthcare facilities to report all events that cause harm or have the potential to cause harm to a patient. These patient safety events are reported to the Pennsylvania Patient Safety Reporting System (PA-PSRS)^a, which is the largest repository of patient safety data in the United States and one of the largest in the world, with over 4.7 million acute care event reports dating back to 2004.

This article summarizes data from acute care event reports submitted to PA-PSRS in 2023, along with comparisons and insights that can be used to identify potential areas of focus for patient safety efforts.

Definitions

Terms describing patient safety occurrences, including “serious event,” “medical error,” “adverse event,” “harm,” and “incident,” are often used interchangeably. However, within the context of this manuscript they have distinct meanings and indications for whether they must be reported to PA-PSRS in accordance with the Medical Care Availability and Reduction of Error (MCARE) Act (Act 13 of 2002).¹ An “incident” is defined as “an event, occurrence,

or situation involving the clinical care of a patient in a medical facility which could have injured the patient but did not either cause an unanticipated injury or require the delivery of additional healthcare services to the patient.”¹ A “serious event” is defined as “an event, occurrence, or situation involving the clinical care of a patient in a medical facility that results in death or compromises patient safety and results in an unanticipated injury requiring the delivery of additional healthcare services to the patient.”¹

Each event report includes a harm score—assigned by the reporting facility—that describes the potential or actual harm to the patient resulting from the event. **Table 1** lists the definition for each harm score, along with harm score groupings for incidents, serious events, and high harm events.

Methods

This analysis was performed using data extracted from PA-PSRS on February 1, 2024, and data from the Pennsylvania Health Care Cost Containment Council (PHC4)^b. Report counts are based on the date the report was submitted; reporting rates are based on the event occurrence date and calculated per 1,000 patient days for hospitals and per 1,000 surgical encounters for ASFs. Event occurrence date is used for rate calculations to ensure consistency with the time frame

Table 1. PA-PSRS Harm Scores

	Harm Score	Definition
Incidents	A	Circumstances that could cause adverse events (e.g., look-alike medications, confusing equipment)
	B1	An event occurred but it did not reach the individual because of chance alone
	B2	An event occurred but it did not reach the individual because of active recovery efforts by caregivers
	C	An event occurred that reached the individual but did not cause harm and did not require increased monitoring
	D	An event occurred that required monitoring to confirm that it resulted in no harm and/or required intervention to prevent harm
Serious Events	E	An event occurred that contributed to or resulted in temporary harm and required treatment or intervention
	F	An event occurred that contributed to or resulted in temporary harm and required initial or prolonged hospitalization
High Harm	G	An event occurred that contributed to or resulted in permanent harm
	H	An event occurred that resulted in a near-death event (e.g., required ICU care or other intervention necessary to sustain life)
	I	An event occurred that contributed to or resulted in death

^aPA-PSRS is a secure, web-based system through which Pennsylvania hospitals, ambulatory surgical facilities, abortion facilities, and birthing centers submit reports of patient safety-related incidents and serious events in accordance with mandatory reporting laws outlined in the Medical Care Availability and Reduction of Error (MCARE) Act (Act 13 of 2002).¹ All reports submitted through PA-PSRS are confidential and no information about individual facilities or providers is made public.

^bThe Pennsylvania Health Care Cost Containment Council (PHC4) is an independent state agency responsible for addressing the problem of escalating health costs, ensuring the quality of healthcare, and increasing access to healthcare for all citizens regardless of ability to pay. PHC4 has provided data to this entity in an effort to further PHC4’s mission of educating the public and containing healthcare costs in Pennsylvania. PHC4, its agents, and its staff have made no representation, guarantee, or warranty, express or implied, that the data—financial-, patient-, payor-, and physician-specific information—provided to this entity are error-free, or that the use of the data will avoid differences of opinion or interpretation. This analysis was not prepared by PHC4. This analysis was done by the Patient Safety Authority. PHC4, its agents, and its staff bear no responsibility or liability for the results of the analysis, which are solely the opinion of this entity.

in which the patient days or surgical encounters occurred. At the time this analysis was performed, data from PHC4 was available through Q2 2023, which allowed us to calculate 2023 rates using the first two quarters of PA-PSRS data.

Results

As seen in **Figure 1**, a total of 287,997 reports were submitted by Pennsylvania acute care facilities in 2023, which represents a 12.2% increase (31,324 reports) over the prior year, the largest percentage increase since 2006. Of the 287,997 reports submitted in 2023, 11,750 were serious events, and of those serious events, 610 were classified as high harm. The numbers of serious and high harm events increased from 2022 by 20.6% and 25.0%, respectively, which are the largest annual percentage increases for both categories historically. **Figure 2** shows incidents and serious events as a percentage of total reports. In 2023, 4.1% of reports were serious events, which represents the highest percentage since the first full year of PA-PSRS reporting in 2005.

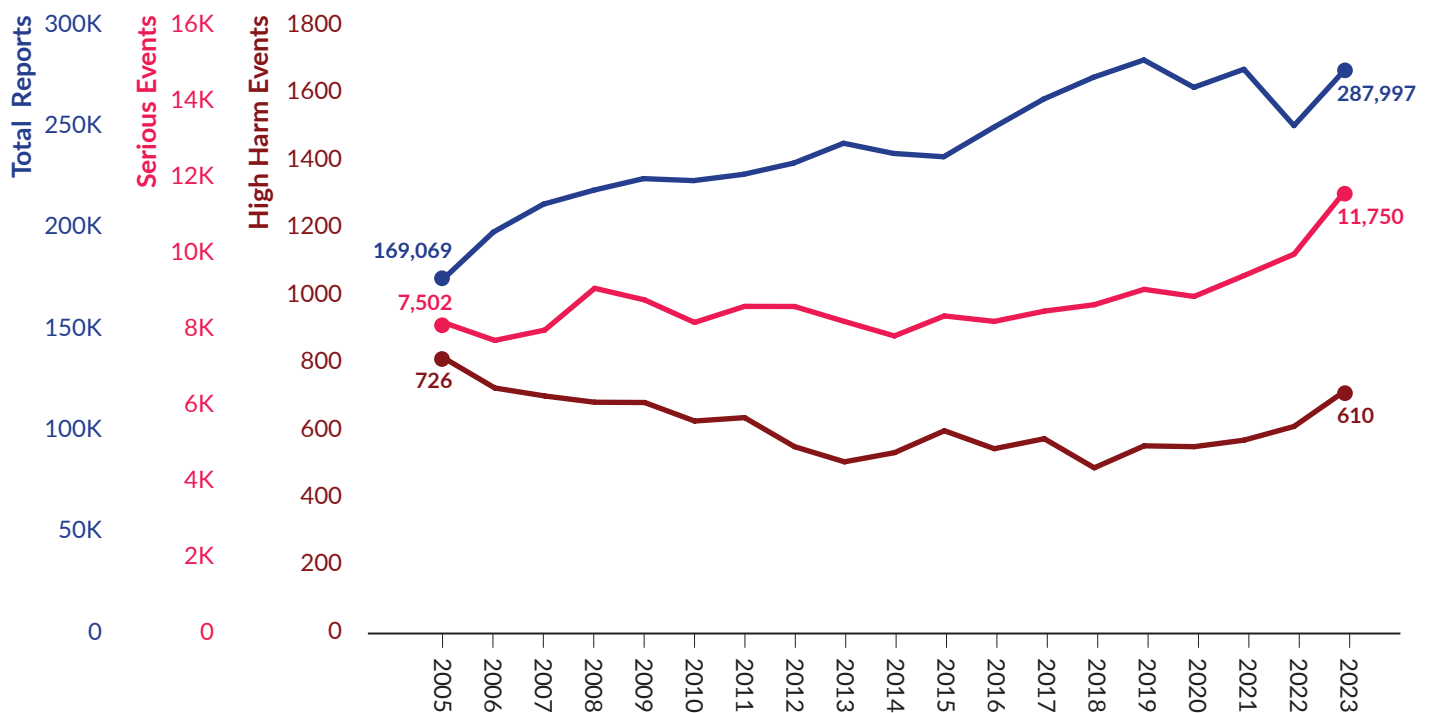
More than half (52.9%; 301 of 569) of the acute care facilities increased their number of report submissions in 2023, with an average increase of 144 reports and median increase of 18 reports. The five facilities with the largest increase in number of reports accounted for 37.0% (11,595 of 31,324) of the total increase in 2023. Nearly two-thirds (64.8%; 7,509 of 11,595) of reports from those five facilities were in the Error Related to Procedure/Treatment/Test (P/T/T) and Medication Error event types.

About half (48.9%; 278 of 569) of the acute care facilities increased their reporting of serious events, with an average increase of 11 reports and median increase of 4 reports. The five facilities with the largest increase in number of serious events collectively submitted 684 more serious event reports in 2023 than in 2022. More than half (56.1%; 384 of 684) of the increase in serious event reports was in the Complication of P/T/T event type, and the majority (53.6%; 206 of 384) of those reports were in the Complication following surgery or invasive procedure event subtype.

Table 2 shows a breakdown of incidents and serious events by facility type from the past three years. From 2022 to 2023, the number of reports submitted by hospitals increased by 30,304 (12.3%), and reports from other acute care facilities (ASFs, birthing centers [BRCs], and abortion facilities [ABFs]) increased by 1,020 (9.7%).

The harm score distributions for reports submitted during years 2021–2023 are shown in **Table 3**. Consistently, the most frequent harm score is C (41.2% of total reports in 2023), and harm score C had the largest growth, increasing by 13,647 reports in 2023. Serious events comprised 4.1% of total reports submitted in 2023, with harm scores E and F being reported most frequently. The largest percentage increase was with harm score G, which increased by 83.0%, going from 53 reports in 2022 to 97 in 2023.

Figure 1. Total Reports, Serious Events, and High Harm Events Submitted to PA-PSRS



Note: High harm events are a subset of serious events, and serious events are a subset of total reports.

Figure 2. Incidents and Serious Events as a Percentage of Total Reports Submitted to PA-PSRS

% of Total Reports

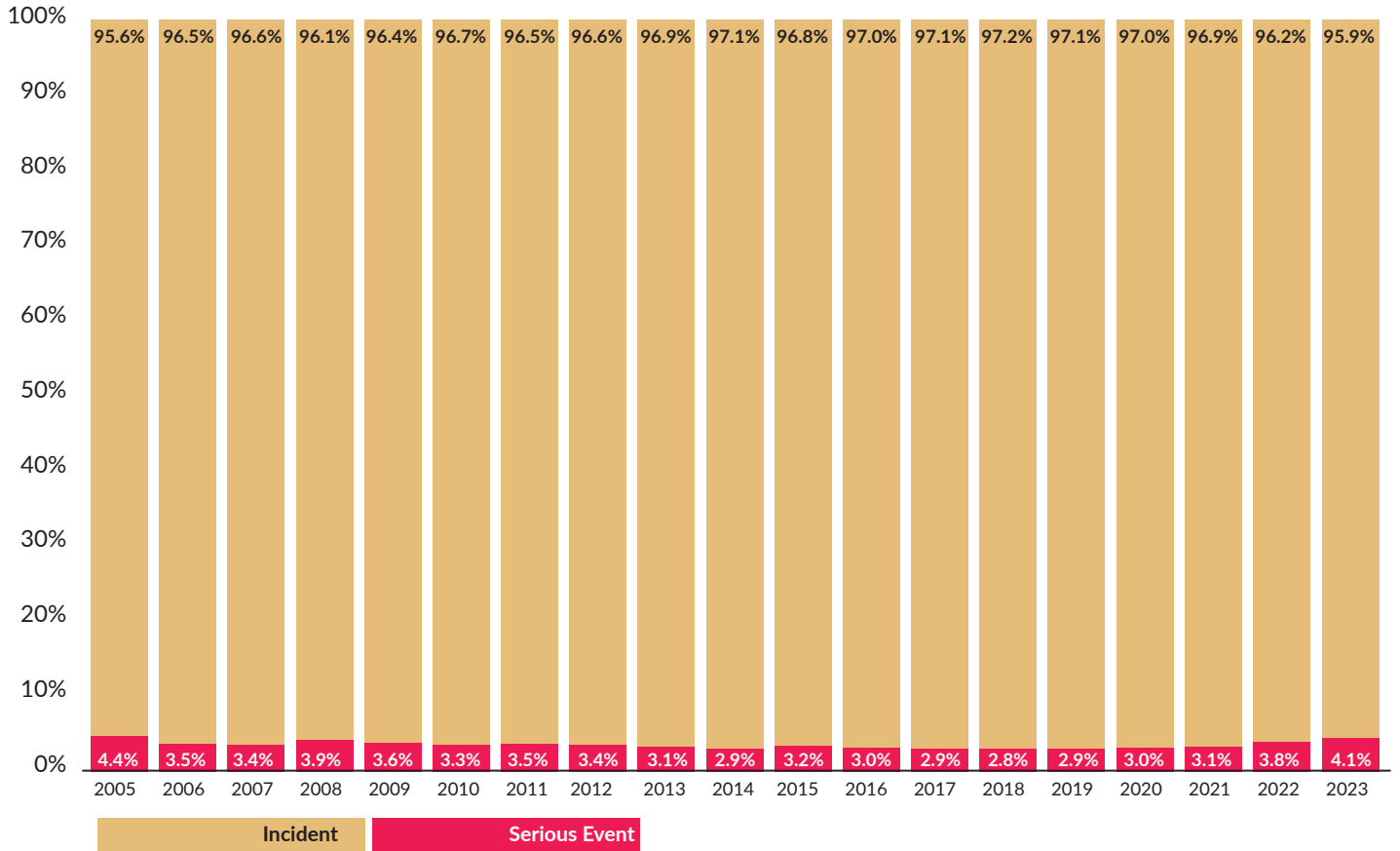


Table 2. Number and Percentage of Reports Submitted to PA-PSRS by Facility Type and Event Classification

Facility Types	Event Classification	Number of Reports			% of Total Reports		
		2021	2022	2023	2021	2022	2023
Hospitals	Incident	272,445	238,363	266,726	94.3%	92.9%	92.6%
	Serious Event	7,109	7,755	9,696	2.5%	3.0%	3.4%
	Subtotal	279,554	246,118	276,422	96.8%	95.9%	96.0%
Other Acute Care Facilities	Incident	7,370	8,569	9,521	2.6%	3.3%	3.3%
	Serious Event	1,934	1,986	2,054	0.7%	0.8%	0.7%
	Subtotal	9,304	10,555	11,575	3.2%	4.1%	4.0%
Totals	Incident	279,815	246,932	276,247	96.9%	96.2%	95.9%
	Serious Event	9,043	9,741	11,750	3.1%	3.8%	4.1%
Grand Total		288,858	256,673	287,997	100.0%	100.0%	100.0%

Note: Other Acute Care Facilities include ambulatory surgical facilities, birthing centers, and abortion facilities. Numbers shown for prior years may differ from previously published numbers due to subsequent report deletions or classification changes made by reporting facilities.

Table 3. Number and Percentage of Reports Submitted to PA-PSRS by Harm Score With Change in Reports From 2022 to 2023

Harm Score	Number of Reports			% of Total Reports			Change in Reports 2022 to 2023		
	2021	2022	2023	2021	2022	2023	Number	Percent	
A	28,003	29,658	32,725	9.7%	11.6%	11.4%	3,067	10.3%	
B1	2,772	2,042	2,617	1.0%	0.8%	0.9%	575	28.2%	
B2	35,874	22,236	26,668	12.4%	8.7%	9.3%	4,432	19.9%	
C	113,680	105,106	118,753	39.4%	40.9%	41.2%	13,647	13.0%	
D	99,486	87,890	95,484	34.4%	34.2%	33.2%	7,594	8.6%	
Incidents - Subtotal	279,815	246,932	276,247	96.9%	96.2%	95.9%	29,315	11.9%	
E	6,330	6,811	8,080	2.2%	2.7%	2.8%	1,269	18.6%	
F	2,273	2,442	3,060	0.8%	1.0%	1.1%	618	25.3%	
G	64	53	97	<0.05%	<0.05%	<0.05%	44	83.0%	
H	143	165	211	<0.05%	0.1%	0.1%	46	27.9%	
I	233	270	302	0.1%	0.1%	0.1%	32	11.9%	
Serious Events - Subtotal	9,043	9,741	11,750	3.1%	3.8%	4.1%	2,009	20.6%	
Total	288,858	256,673	287,997	100.0%	100.0%	100.0%	31,324	12.2%	

Note: Numbers shown for prior years may differ from previously published numbers due to subsequent report deletions or event type changes made by reporting facilities. All percentages that are greater than 0 but would otherwise round to 0.0% are displayed as <0.05%.

Reporting Rates Based on Event Occurrence Date

Reporting rates provide normalized comparisons over time. In this analysis, rates are based on event occurrence dates and calculated per 1,000 patient days for hospitals and per 1,000 surgical encounters for ASFs. **Figure 3** shows that the preliminary rate for hospitals based on data from Q1 to Q2 of 2023 is 2.0 points higher than the 2022 full-year rate. For ASFs, **Figure 4** shows the 2023 preliminary rate is 0.3 points higher than the 2022 full-year rate. Of note, there has been a relatively steady increase in the ASF reporting rate over time.

Event Types

Each PA-PSRS report includes an event type and subtype(s) that are assigned by the reporting facility. The reporting taxonomy for incidents and serious events provides for 10 main event types, with 228 possible combinations of event type and subtype(s).

Table 4 shows the number and percentage of total reports submitted for each main event type over the past five years. For each of the past five years, the most frequently reported event type was Error Related to Procedure/Treatment/Test (P/T/T), with 95,189 reports submitted in 2023 (33.1% of total reports). From a distribution perspective, the greatest increase in percent of total reports in 2023 compared to 2022 occurred with event type Medication Error, which increased by 0.9 percentage points, from 13.2% in 2022 to 14.1% in 2023. The largest decrease occurred with event type Fall, which dropped 1.5 percentage points, from 12.8% in 2022 to 11.3% in 2023. The only raw number decrease in submitted reports was with the Fall event type, going from 32,918 reports in 2022 to 32,606 in 2023.

Table 5 shows the number and percentage of serious events submitted for each event type over the past five years. The most frequently reported serious event type for each of the last five years was Complication of P/T/T, with 6,590 serious event reports submitted in 2023 (56.1% of serious event reports). Complication of P/T/T also showed the greatest increase in terms of distribution of serious event reports, increasing by 2.6 percentage points, from 53.5% of serious events in 2022 to 56.1% in 2023. Similar to our findings for total reports, the largest decrease for serious events was seen with the Fall event type, which dropped 2.4 percentage points in 2023. Fall was also the only event type that had a raw number decrease in serious events in 2023.

Event Subtypes

Each of the 10 main event types has between six and 13 subtypes to further classify the event. The total number of reports and serious events, as well as their associated percentage distributions, are shown in **Table 6**. This is a detailed accounting of reports submitted in 2023 by the first level of subtype for each main event type. The main event types in the left column are listed in descending order by their number of reports (i.e., the same ordering as **Table 4**). Within each main event type, the subtypes are listed in descending order as well.

The subtype with the largest increase in number of reports submitted from 2022 to 2023 was Laboratory test problem, which increased by 4,267 reports. The second highest increase was in the Other (specify) subtype of the Other/Miscellaneous event type, which increased by 3,604 reports. The third largest increase was seen in the Referral/consult problem subtype, which increased by 2,542 reports.

For serious events, the top three increases were all subtypes of the Complication of P/T/T event type. The subtype accounting for almost half (48.2%; 968 of 2,009) of the increase was Complication following surgery or invasive procedure, and 54.6% (529 of 968) of reports in this subtype were due to unplanned returns to the operating room (OR). The second and third largest increases were seen in the Maternal complication and Other (specify) subtypes, which increased by 159 and 121 reports, respectively.

Event Type and Harm Score

Table 7 displays a cross tabulation of submitted reports distributed by harm score for each of the 10 main event types. Colored cells reflect the intersections of event type and harm score that occurred most frequently in 2023, with darker shades representing higher concentrations of reports. For the most frequently reported event type, Error Related to P/T/T, harm score C was reported most frequently; this intersection of event type and harm score was the most common in 2023, with 46,750 reports and representing 16.2% of total reports. The second most common intersection was seen with event type Complication of P/T/T and harm score D, with 22,314 reports and representing 7.7% of total reports.

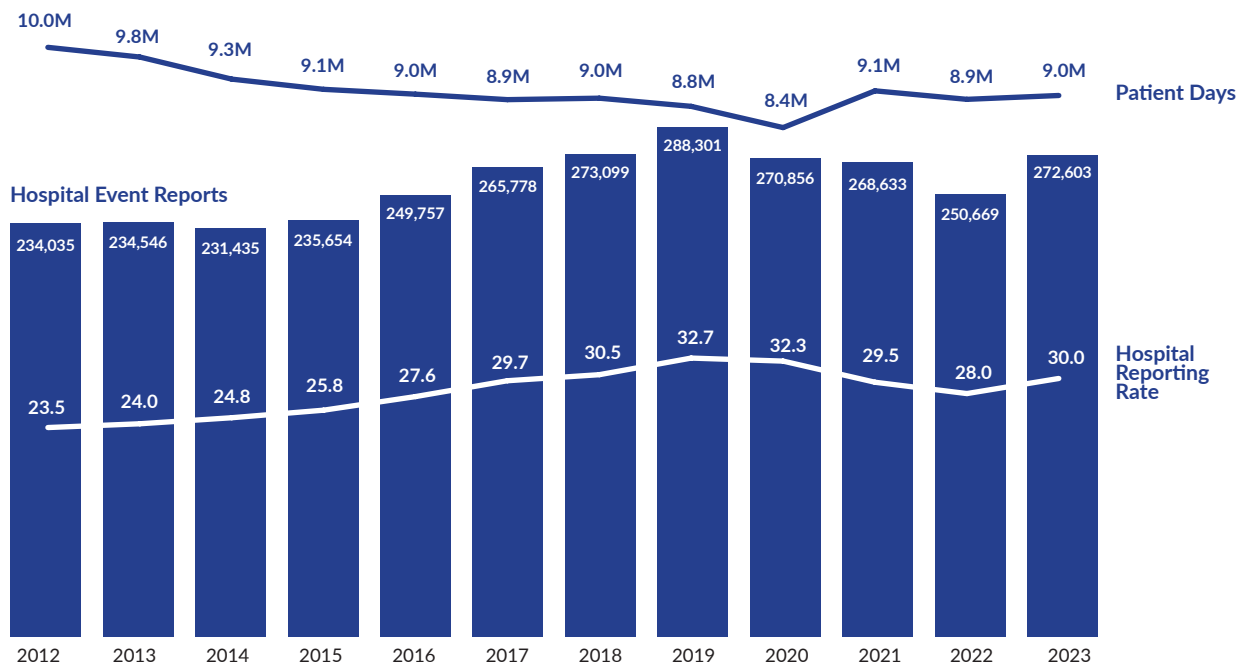
Care Area and Harm Score

The care area can help us identify patterns or trends involving specific patient safety concerns relative to the location where an event occurred. Within the acute care data, there are 168 care area options for facilities to use; we then place these care areas into one of 23 higher-level care area groups. **Table 8** shows a cross tabulation of care area group with harm score. This reflects the same two areas of highest concentration that were seen in the 2022 data, in the cross sections of the Med/Surg care area group and harm scores C and D. Together, these account for 15.3% of total reports submitted in 2023.

Care Area and Event Type

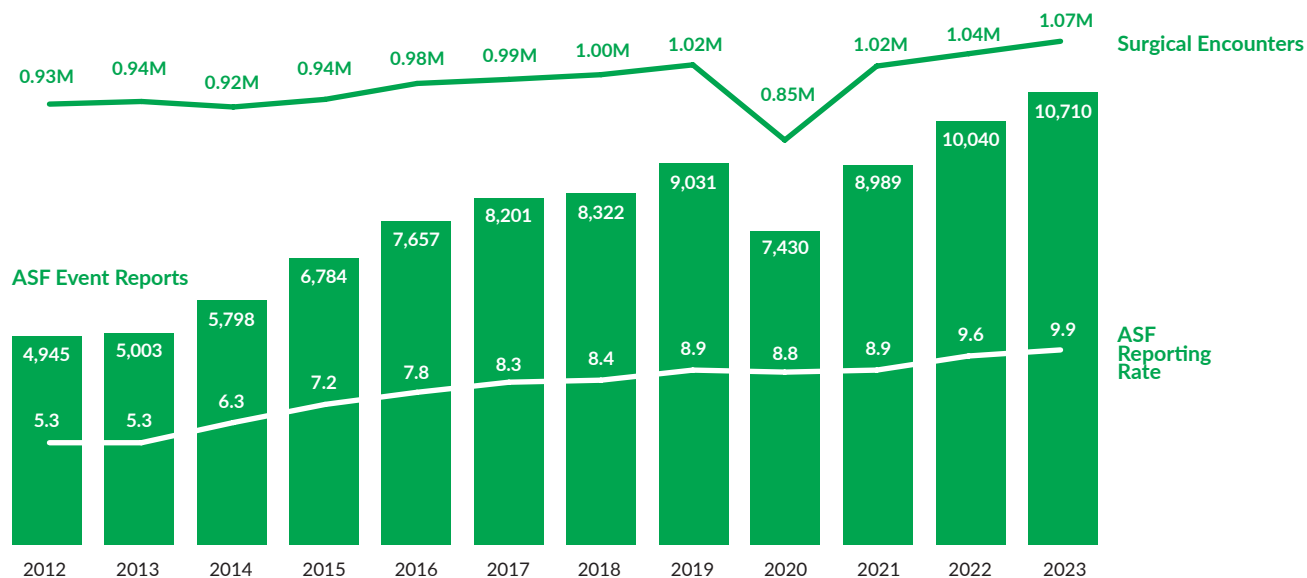
Table 9 shows a cross tabulation of care area group and event type. The three highest concentrations of reports are at the intersections of Error Related to P/T/T with Surgical Services, Emergency, and Laboratory care area groups.

Figure 3. Hospital Event Reports, Patient Days, and Reporting Rates by Year



Note: The number of hospital event reports shown for each year is based on event occurrence date, rather than report submission date, to ensure consistency with the time frame in which the patient days occurred. The 2023 hospital reporting rate is based on event occurrence dates in Q1-Q2 only due to lagged data related to patient days. Rates shown for prior years may differ from previously published rates due to subsequent changes made by reporting facilities.

Figure 4. ASF Event Reports, Surgical Encounters, and Reporting Rates by Year



Note: The number of ASF event reports shown for each year is based on event occurrence date, rather than report submission date, to ensure consistency with the time frame in which the surgical encounters occurred. The 2023 ASF reporting rate is based on event occurrence dates in Q1-Q2 only due to lagged data related to surgical encounters. Rates shown for prior years may differ from previously published rates due to subsequent changes made by reporting facilities.

Table 4. Number and Percentage of **Reports** Submitted to PA-PSRS by Event Type in Descending Order by 2023 Frequency

Event Type	Number of Reports					% of Total Reports				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Error Related to P/T/T	96,440	89,335	90,452	84,287	95,189	32.8%	32.1%	31.3%	32.8%	33.1%
Complication of P/T/T	46,691	45,180	44,129	40,144	45,013	15.9%	16.2%	15.3%	15.6%	15.6%
Medication Error	52,884	46,559	48,714	33,980	40,680	18.0%	16.7%	16.9%	13.2%	14.1%
Fall	31,978	32,775	35,600	32,918	32,606	10.9%	11.8%	12.3%	12.8%	11.3%
Other/Miscellaneous	22,761	23,190	27,707	26,652	31,563	7.7%	8.3%	9.6%	10.4%	11.0%
Skin Integrity	20,546	19,697	20,583	17,146	17,931	7.0%	7.1%	7.1%	6.7%	6.2%
Equip./Supplies/Devices	8,792	8,062	7,806	7,552	9,403	3.0%	2.9%	2.7%	2.9%	3.3%
Adverse Drug Reaction	5,700	5,624	5,868	6,527	7,063	1.9%	2.0%	2.0%	2.5%	2.5%
Transfusion	6,195	5,779	5,648	5,235	6,033	2.1%	2.1%	2.0%	2.0%	2.1%
Patient Self-Harm	2,188	2,329	2,351	2,232	2,516	0.7%	0.8%	0.8%	0.9%	0.9%
Total	294,175	278,530	288,858	256,673	287,997	100%	100%	100%	100%	100%

Note: Numbers shown for prior years may differ from previously published numbers due to subsequent report deletions or event type changes made by reporting facilities.

Table 5. Number and Percentage of **Serious Events** Submitted to PA-PSRS by Event Type in Descending Order by 2023 Frequency

Event Type	Number of Serious Events					% of Total Serious Events				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Complication of P/T/T	4,529	4,577	4,907	5,216	6,590	52.7%	54.7%	54.3%	53.5%	56.1%
Fall	932	940	1,046	1,140	1,098	10.8%	11.2%	11.6%	11.7%	9.3%
Other/Miscellaneous	983	708	849	850	919	11.4%	8.5%	9.4%	8.7%	7.8%
Error Related to P/T/T	768	753	729	831	904	8.9%	9.0%	8.1%	8.5%	7.7%
Adverse Drug Reaction	241	344	430	577	783	2.8%	4.1%	4.8%	5.9%	6.7%
Skin Integrity	654	575	610	633	765	7.6%	6.9%	6.7%	6.5%	6.5%
Medication Error	182	166	172	227	294	2.1%	2.0%	1.9%	2.3%	2.5%
Patient Self-Harm	176	166	171	141	234	2.0%	2.0%	1.9%	1.4%	2.0%
Equip./Supplies/Devices	78	77	96	86	105	0.9%	0.9%	1.1%	0.9%	0.9%
Transfusion	52	58	33	40	58	0.6%	0.7%	0.4%	0.4%	0.5%
Total	8,595	8,364	9,043	9,741	11,750	100%	100%	100%	100%	100%

Note: Numbers shown for prior years may differ from previously published numbers due to subsequent report deletions or event type changes made by reporting facilities.

Table 6. Number and Percentage of Total Reports and Serious Events Submitted to PA-PSRS by Event Type and Subtype in Descending Order by 2023 Frequency

Event Type	Event Subtype	2022				2023				Change in Reports 2022–2023	
		Number of Reports	% of Total Reports	Number of Serious Events	% of Total Serious Events	Number of Reports	% of Total Reports	Number of Serious Events	% of Total Serious Events	Number	Percent
Error Related to P/T/T	Laboratory test problem	35,767	13.9%	50	0.5%	40,034	13.9%	62	0.5%	4,267	11.9%
	Surgery/invasive procedure problem	19,773	7.7%	592	6.1%	22,118	7.7%	661	5.6%	2,345	11.9%
	Referral/consult problem	7,230	2.8%	16	0.2%	9,772	3.4%	15	0.1%	2,542	35.2%
	Other (specify)	8,124	3.2%	62	0.6%	9,160	3.2%	66	0.6%	1,036	12.8%
	Radiology/imaging test problem	8,318	3.2%	46	0.5%	8,199	2.8%	52	0.4%	-119	-1.4%
	Respiratory care	2,897	1.1%	51	0.5%	3,128	1.1%	40	0.3%	231	8.0%
	Dietary	2,178	0.8%	14	0.1%	2,778	1.0%	8	0.1%	600	27.5%
Complication of P/T/T	IV site complication (phlebitis, bruising, infiltration)	10,756	4.2%	300	3.1%	12,311	4.3%	350	3.0%	1,555	14.5%
	Other (specify)	6,808	2.7%	409	4.2%	7,593	2.6%	530	4.5%	785	11.5%
	Complication following surgery or invasive procedure	5,831	2.3%	2,730	28.0%	6,251	2.2%	3,698	31.5%	420	7.2%
	Maternal complication	2,830	1.1%	352	3.6%	3,414	1.2%	511	4.3%	584	20.6%
	Catheter or tube problem	2,653	1.0%	188	1.9%	3,056	1.1%	221	1.9%	403	15.2%
	Cardiopulmonary arrest outside of ICU setting	2,879	1.1%	84	0.9%	3,025	1.1%	72	0.6%	146	5.1%
	Extravasation of drug or radiologic contrast	2,169	0.8%	65	0.7%	2,662	0.9%	71	0.6%	493	22.7%
	Neonatal complication	2,451	1.0%	149	1.5%	2,461	0.9%	150	1.3%	10	0.4%
	Anesthesia Event	1,116	0.4%	258	2.6%	1,227	0.4%	283	2.4%	111	9.9%
	Healthcare-associated infection	1,149	0.4%	592	6.1%	1,212	0.4%	567	4.8%	63	5.5%
	Onset of hypoglycemia during care	936	0.4%	19	0.2%	1,061	0.4%	34	0.3%	125	13.4%
	Emergency department	562	0.2%	69	0.7%	736	0.3%	102	0.9%	174	31.0%
	Complication following spinal manipulative therapy	4	<0.05%	1	<0.05%	4	<0.05%	1	<0.05%	0	0.0%
Medication Error	Wrong	13,027	5.1%	115	1.2%	15,129	5.3%	128	1.1%	2,102	16.1%
	Other (specify)	8,996	3.5%	25	0.3%	10,935	3.8%	46	0.4%	1,939	21.6%
	Dose omission	4,072	1.6%	26	0.3%	4,755	1.7%	37	0.3%	683	16.8%
	Prescription/refill delayed	2,730	1.1%	2	<0.05%	3,446	1.2%	5	<0.05%	716	26.2%
	Monitoring error (includes contraindicated drugs)	2,147	0.8%	22	0.2%	2,610	0.9%	35	0.3%	463	21.6%
	Extra dose	1,638	0.6%	25	0.3%	2,024	0.7%	27	0.2%	386	23.6%
	Medication list incorrect	666	0.3%	12	0.1%	904	0.3%	15	0.1%	238	35.7%
	Unauthorized drug	643	0.3%	-	-	792	0.3%	1	<0.05%	149	23.2%
	Inadequate pain management	61	<0.05%	-	-	85	<0.05%	-	-	24	39.3%
Fall	Found on floor	8,247	3.2%	399	4.1%	7,687	2.7%	352	3.0%	-560	-6.8%
	Ambulating	5,076	2.0%	263	2.7%	5,319	1.8%	256	2.2%	243	4.8%
	Other/Unknown (specify)	4,239	1.7%	83	0.9%	4,242	1.5%	69	0.6%	3	0.1%
	Toileting	3,228	1.3%	139	1.4%	3,227	1.1%	152	1.3%	-1	0.0%
	Lying in bed	3,056	1.2%	46	0.5%	2,968	1.0%	51	0.4%	-88	-2.9%
	Assisted fall	2,624	1.0%	30	0.3%	2,762	1.0%	18	0.2%	138	5.3%
	Sitting in chair/wheelchair	2,731	1.1%	57	0.6%	2,730	0.9%	60	0.5%	-1	0.0%

Table 6. (continued)

Event Type	Event Subtype	2022				2023				Change in Reports 2022-2023	
		Number of Reports	% of Total Reports	Number of Serious Events	% of Total Serious Events	Number of Reports	% of Total Reports	Number of Serious Events	% of Total Serious Events	Number	Percent
Fall (cont.)	Sitting at side of bed	1,145	0.4%	26	0.3%	1,140	0.4%	30	0.3%	-5	-0.4%
	Transferring	956	0.4%	34	0.3%	902	0.3%	36	0.3%	-54	-5.6%
	Hallways of facility	590	0.2%	20	0.2%	659	0.2%	26	0.2%	69	11.7%
	From stretcher	368	0.1%	25	0.3%	398	0.1%	28	0.2%	30	8.2%
	Grounds of facility	341	0.1%	8	0.1%	288	0.1%	9	0.1%	-53	-15.5%
	In exam room/from exam table	317	0.1%	10	0.1%	284	0.1%	11	0.1%	-33	-10.4%
Other/ Miscellaneous	Other (specify)	17,325	6.7%	396	4.1%	20,929	7.3%	398	3.4%	3,604	20.8%
	Unanticipated transfer to higher level of care	7,883	3.1%	376	3.9%	8,778	3.0%	449	3.8%	895	11.4%
	Inappropriate discharge	1,327	0.5%	12	0.1%	1,769	0.6%	7	0.1%	442	33.3%
	Other unexpected death	108	<0.05%	57	0.6%	82	<0.05%	60	0.5%	-26	-24.1%
	Death or injury involving restraints	6	<0.05%	6	0.1%	3	<0.05%	3	<0.05%	3	-50.0%
	Death or injury during inpatient elopement	3	<0.05%	3	<0.05%	1	<0.05%	1	<0.05%	-2	-66.7%
Death or injury involving seclusion	-	-	-	-	1	<0.05%	1	<0.05%	-1	-100.0%	
Skin Integrity	Pressure injury	6,510	2.5%	464	4.8%	6,158	2.1%	573	4.9%	-352	-5.4%
	Other (specify)	5,859	2.3%	57	0.6%	6,126	2.1%	51	0.4%	267	4.6%
	Skin tear	2,998	1.2%	40	0.4%	3,527	1.2%	42	0.4%	529	17.6%
	Abrasion	730	0.3%	5	0.1%	904	0.3%	1	<0.05%	174	23.8%
	Blister	470	0.2%	1	<0.05%	481	0.2%	5	<0.05%	11	2.3%
	Laceration	285	0.1%	33	0.3%	317	0.1%	47	0.4%	32	11.2%
	Burn (electrical, chemical, thermal)	176	0.1%	32	0.3%	271	0.1%	41	0.3%	95	54.0%
	Rash/hives	108	<0.05%	1	<0.05%	139	<0.05%	5	<0.05%	31	28.7%
Venous stasis ulcer	10	<0.05%	-	-	8	<0.05%	-	-	-2	-20.0%	
Equipment/ Supplies/ Devices	Equipment malfunction	2,677	1.0%	36	0.4%	3,222	1.1%	41	0.3%	545	20.4%
	Equipment not available	795	0.3%	-	-	1,018	0.4%	3	<0.05%	223	28.1%
	Medical device problem	684	0.3%	17	0.2%	891	0.3%	13	0.1%	207	30.3%
	Broken item(s)	641	0.2%	16	0.2%	841	0.3%	24	0.2%	200	31.2%
	Sterilization problem	763	0.3%	-	-	814	0.3%	5	<0.05%	51	6.7%
	Other (specify)	756	0.3%	8	0.1%	771	0.3%	9	0.1%	15	2.0%
	Equipment misuse	311	0.1%	1	<0.05%	497	0.2%	1	<0.05%	186	59.8%
	Equipment safety situation	202	0.1%	2	<0.05%	334	0.1%	-	-	132	65.3%
	Disconnected	209	0.1%	4	<0.05%	328	0.1%	5	<0.05%	119	56.9%
	Equipment wrong or inadequate	171	0.1%	1	<0.05%	220	0.1%	2	<0.05%	49	28.7%
	Inadequate supplies	151	0.1%	-	-	210	0.1%	1	<0.05%	59	39.1%
	Electrical problem	130	0.1%	-	-	147	0.1%	1	<0.05%	17	13.1%
Outdated items(s)	62	<0.05%	1	<0.05%	110	<0.05%	-	-	48	77.4%	

Table 6. (continued)

Event Type	Event Subtype	2022				2023				Change in Reports 2022–2023	
		Number of Reports	% of Total Reports	Number of Serious Events	% of Total Serious Events	Number of Reports	% of Total Reports	Number of Serious Events	% of Total Serious Events	Number	Percent
Adverse Drug Reaction	Other (specify)	4,621	1.8%	319	3.3%	4,976	1.7%	394	3.4%	355	7.7%
	Skin reaction (rash, blistering, itching, hives)	1,251	0.5%	145	1.5%	1,455	0.5%	223	1.9%	204	16.3%
	Mental status change	201	0.1%	50	0.5%	186	0.1%	63	0.5%	-15	-7.5%
	Hypotension	144	0.1%	26	0.3%	166	0.1%	47	0.4%	22	15.3%
	Dizziness	65	<0.05%	2	<0.05%	107	<0.05%	7	0.1%	42	64.6%
	Hematologic problem	117	<0.05%	17	0.2%	100	<0.05%	23	0.2%	-17	-14.5%
	Arrhythmia	29	<0.05%	4	<0.05%	40	<0.05%	17	0.1%	11	37.9%
	Nephrotoxicity	99	<0.05%	14	0.1%	33	<0.05%	9	0.1%	-66	-66.7%
Transfusion	Event related to blood product sample collection	1,533	0.6%	-	-	1,685	0.6%	1	<0.05%	152	9.9%
	Other (specify)	1,510	0.6%	2	<0.05%	1,659	0.6%	3	<0.05%	149	9.9%
	Event related to blood product administration	795	0.3%	7	0.1%	986	0.3%	11	0.1%	191	24.0%
	Apparent transfusion reaction	615	0.2%	31	0.3%	776	0.3%	42	0.4%	161	26.2%
	Event related to blood product dispensing or distribution	425	0.2%	-	-	533	0.2%	-	-	108	25.4%
	Consent missing/inadequate	237	0.1%	-	-	244	0.1%	-	-	7	3.0%
	Wrong patient requested	45	<0.05%	-	-	46	<0.05%	-	-	1	2.2%
	Special product need not issued	21	<0.05%	-	-	26	<0.05%	-	-	5	23.8%
	Special product need not requested	18	<0.05%	-	-	25	<0.05%	-	-	7	38.9%
	Wrong component issued	18	<0.05%	-	-	24	<0.05%	-	-	6	33.3%
	Mismatched unit	11	<0.05%	-	-	19	<0.05%	1	<0.05%	8	72.7%
	Wrong component requested	7	<0.05%	-	-	9	<0.05%	-	-	2	28.6%
	Wrong patient transfused	-	-	-	-	1	<0.05%	-	-	-5	-100.0%
Patient Self-Harm	Other self-harm (specify)	1,351	0.5%	58	0.6%	1,543	0.5%	64	0.5%	192	14.2%
	Self-mutilation	644	0.3%	20	0.2%	615	0.2%	23	0.2%	-29	-4.5%
	Ingestion of foreign object or substance	215	0.1%	50	0.5%	316	0.1%	114	1.0%	101	47.0%
	Suicide attempt - Injury	11	<0.05%	11	0.1%	27	<0.05%	27	0.2%	16	145.5%
	Anorexia/bulimia	9	<0.05%	-	-	10	<0.05%	1	<0.05%	1	11.1%
	Suicide - Death	2	<0.05%	2	<0.05%	5	<0.05%	5	<0.05%	3	150.0%
Total		256,673	100%	9,741	100%	287,997	100%	11,750	100%	31,324	12.2%

Note: Numbers shown for prior years may differ from previously published numbers due to subsequent report deletions or event type changes made by reporting facilities. All percentages that are greater than 0 but would otherwise round to 0.0% are displayed as <0.05%.

Table 7. Number of Reports Submitted to PA-PSRS in 2023 by Event Type and Harm Score in Descending Order by Event Type Frequency

Event Type	A	B1	B2	C	D	E	F	G	H	I	Total
Error Related to P/T/T	16,735	985	11,854	46,750	17,961	674	177	23	13	17	95,189
Complication of P/T/T	1,903	90	1,307	12,809	22,314	4,056	2,177	49	137	171	45,013
Medication Error	3,890	622	8,263	18,792	8,819	218	58	4	6	8	40,680
Fall	198	60	307	16,506	14,437	813	262	4	6	13	32,606
Other/Miscellaneous	6,237	599	2,690	10,745	10,373	577	240	7	23	72	31,563
Skin Integrity	457	1	49	4,485	12,174	738	22	5	-	-	17,931
Equip./Supplies/ Devices	2,110	152	1,582	4,005	1,449	93	8	1	3	-	9,403
Adverse Drug Reaction	107	-	11	1,290	4,872	663	89	4	16	11	7,063
Transfusion	1,053	98	560	2,605	1,659	50	6	-	-	2	6,033
Patient Self-Harm	35	10	45	766	1,426	198	21	-	7	8	2,516
Total	32,725	2,617	26,668	118,753	95,484	8,080	3,060	97	211	302	287,997

Table 8. Number of Reports Submitted to PA-PSRS in 2023 by Care Area Group and Harm Score in Descending Order by Care Area Group Frequency

Care Area Group	A	B1	B2	C	D	E	F	G	H	I	Total
Med/Surg	5,089	325	3,130	22,731	21,383	1,295	279	8	28	47	54,315
Surgical Services	6,494	602	5,656	14,303	9,534	3,048	1,836	38	83	102	41,696
Emergency	6,115	208	2,258	13,991	7,433	391	107	8	13	23	30,547
ICU	2,077	134	1,364	8,247	9,372	615	89	9	19	42	21,968
Specialty Unit	1,791	135	1,273	6,578	6,961	341	81	7	7	20	17,194
Imaging/Diagnostic	1,061	148	1,241	7,025	6,218	358	144	7	17	9	16,228
Other	1,641	164	1,596	5,016	4,426	283	148	3	12	12	13,301
Laboratory	742	160	1,451	8,240	2,243	38	12	2	-	-	12,888
Psychiatric Unit	750	131	448	4,409	4,636	430	63	1	3	16	10,887
Clinic/Outpatient Office	725	94	1,728	4,079	3,886	209	66	1	4	7	10,799
Pediatric	1,285	107	1,133	4,576	1,957	70	11	1	-	-	9,140
Rehab Unit	307	74	576	3,565	3,865	130	43	-	-	10	8,570
Intermediate Unit	759	66	787	3,214	3,419	150	27	-	5	6	8,433
Labor and Delivery	229	21	211	1,749	4,017	333	67	8	8	4	6,647
PICU	1,171	37	1,153	3,108	804	23	4	1	1	2	6,304
NICU	952	91	575	2,987	1,407	46	4	-	1	1	6,064
OB/GYN Unit	410	29	356	1,838	1,971	264	58	3	10	1	4,940
Pharmacy	389	71	1,100	1,203	404	8	3	-	-	-	3,178
Rehab Services	95	8	88	1,190	777	23	9	-	-	-	2,190
Administration	469	7	446	181	59	5	1	-	-	-	1,168
Nursery	64	4	67	311	618	19	7	-	-	-	1,090
Respiratory	110	1	31	212	94	1	1	-	-	-	450
Total	32,725	2,617	26,668	118,753	95,484	8,080	3,060	97	211	302	287,997

Table 9. Number of Reports Submitted to PA-PSRS in 2023 by Care Area Group and Event Type in Descending Order by Care Area Group Frequency

Care Area Group	Error Related to P/T/T	Complication of P/T/T	Medication Error	Fall	Other/Miscellaneous	Skin Integrity	Equipment/Supplies/Devices	Adverse Drug Reaction	Transfusion	Patient Self-Harm	Total
Med/Surg	10,074	6,805	10,194	11,634	7,373	5,330	888	790	1,081	146	54,315
Surgical Services	20,313	8,440	1,782	598	4,196	1,751	3,597	378	629	12	41,696
Emergency	14,430	2,531	3,883	3,182	3,883	280	501	480	1,199	178	30,547
ICU	5,904	3,379	4,354	1,084	1,572	3,849	774	220	810	22	21,968
Specialty Unit	3,217	2,229	3,585	3,224	2,179	1,511	246	420	532	51	17,194
Imaging/Diagnostic	6,996	5,311	234	746	839	488	574	1,005	30	5	16,228
Other	4,580	1,590	2,219	1,174	1,818	531	525	583	253	28	13,301
Laboratory	11,967	117	38	92	193	10	64	2	405	-	12,888
Psychiatric Unit	676	241	836	4,316	2,327	382	49	56	2	2,002	10,887
Clinic/Outpatient	3,335	904	1,499	709	819	206	310	2,717	273	27	10,799
Pediatric	2,313	2,108	2,163	527	1,251	229	343	35	151	20	9,140
Rehab Unit	811	582	1,204	2,747	1,272	1,747	105	71	28	3	8,570
Intermediate Unit	1,791	1,216	1,536	1,273	1,219	815	187	150	227	19	8,433
Labor and Delivery	1,334	4,224	325	87	334	36	168	32	107	-	6,647
PICU	2,069	1,259	1,658	51	474	250	448	5	89	1	6,304
NICU	2,683	1,071	921	3	760	150	398	2	76	-	6,064
OB/GYN Unit	1,291	2,172	555	147	497	65	91	24	98	-	4,940
Pharmacy	68	6	2,983	2	22	-	17	80	-	-	3,178
Rehab Services	229	246	46	962	377	283	38	3	4	2	2,190
Administration	470	25	542	24	49	3	20	5	30	-	1,168
Nursery	391	541	55	6	56	5	25	2	9	-	1,090
Respiratory	247	16	68	18	53	10	35	3	-	-	450
Total	95,189	45,013	40,680	32,606	31,563	17,931	9,403	7,063	6,033	2,516	287,997

Other Acute Care Facilities

Since the acute care data predominately reflects reports from hospitals, it is important to separately analyze data from the other acute care facilities (comprised mostly of ASFs, along with BRCs and ABFs) to identify reported patient safety issues from those settings. **Table 10** shows the distribution of reports submitted by these other acute care facilities across the 10 main event types over the past five years. These facilities show a different distribution compared to the overall data in **Table 4**. In comparing the percentage of total reports submitted by all facilities to those submitted by other acute facilities in 2023, the largest difference is seen with the Other/Miscellaneous event type, which made up 24.8% of total reports from other acute

care facilities but only 11.0% of reports from all acute care facilities. The second largest difference is with the Medication Error event type, which made up only 1.3% of reports submitted by other acute care facilities but 14.1% of reports from all acute care facilities. The third largest difference is seen with the Fall event type, accounting for only 2.0% of reports from other acute care facilities, but 11.3% of reports from all acute care facilities.

Table 11 shows the distribution of serious events reported by other acute care facilities over the past five years. In 2023, the combination of two event types, Complication of P/T/T and Other/Miscellaneous, accounted for more than 90% of serious event reports submitted by other acute care facilities.

Table 10. Number and Percentage of **Reports** Submitted to PA-PSRS by Other Acute Care Facilities (ASF, BRC, ABF) by Event Type in Descending Order by 2023 Frequency

Event Type	Number of Reports					% of Total Reports				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Error Related to P/T/T	3,538	3,048	3,333	4,126	4,850	38.2%	39.0%	35.8%	39.1%	41.9%
Other/Miscellaneous	2,417	1,766	2,283	2,843	2,868	26.1%	22.6%	24.5%	26.9%	24.8%
Complication of P/T/T	2,478	2,265	2,816	2,659	2,822	26.7%	29.0%	30.3%	25.2%	24.4%
Skin Integrity	246	206	245	272	296	2.7%	2.6%	2.6%	2.6%	2.6%
Equip./Supplies/Devices	180	145	160	213	285	1.9%	1.9%	1.7%	2.0%	2.5%
Fall	150	161	222	225	228	1.6%	2.1%	2.4%	2.1%	2.0%
Medication Error	173	129	137	130	149	1.9%	1.7%	1.5%	1.2%	1.3%
Adverse Drug Reaction	79	77	100	79	71	0.9%	1.0%	1.1%	0.7%	0.6%
Patient Self-Harm	2	10	5	6	6	0.0%	0.1%	0.1%	0.1%	0.1%
Transfusion	1	-	3	2	-	0.0%	-	0.0%	0.0%	-
Total	9,264	7,807	9,304	10,555	11,575	100%	100%	100%	100%	100%

Note: Numbers shown for prior years may differ from previously published numbers due to subsequent report deletions or event type changes made by reporting facilities.

Table 11. Number and Percentage of **Serious Events** Submitted to PA-PSRS by Other Acute Care Facilities (ASF, BRC, ABF) by Event Type in Descending Order by 2023 Frequency

Event Type	Number of Serious Events					% of Total Serious Events				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Complication of P/T/T	1,272	1,179	1,372	1,343	1,447	67.1%	72.0%	70.9%	67.6%	70.4%
Other/Miscellaneous	478	300	417	473	428	25.2%	18.3%	21.6%	23.8%	20.8%
Error Related to P/T/T	57	74	55	74	83	3.0%	4.5%	2.8%	3.7%	4.0%
Skin Integrity	30	23	21	36	30	1.6%	1.4%	1.1%	1.8%	1.5%
Fall	17	18	29	23	26	0.9%	1.1%	1.5%	1.2%	1.3%
Adverse Drug Reaction	17	24	17	23	21	0.9%	1.5%	0.9%	1.2%	1.0%
Equip./Supplies/Devices	10	10	13	11	15	0.5%	0.6%	0.7%	0.6%	0.7%
Medication Error	14	5	8	2	3	0.7%	0.3%	0.4%	0.1%	0.1%
Patient Self-Harm	1	5	1	1	1	0.1%	0.3%	0.1%	0.1%	0.0%
Transfusion	1	-	1	-	-	0.1%	-	0.1%	-	-
Total	1,897	1,638	1,934	1,986	2,054	100%	100%	100%	100%	100%

Note: Numbers shown for prior years may differ from previously published numbers due to subsequent report deletions or event type changes made by reporting facilities.

Discussion

The number of reports submitted to PA-PSRS has fluctuated over the last five years. Nearly 288,000 reports were received in 2023, which is a considerable increase from 2022 but very close to the 2021 total. While report counts provide some useful information, the reporting rate offers a more normalized comparison year over year. Preliminary reporting rates for 2023 show the highest rate for hospitals since 2020 and the highest rate for ASFs based on available data since 2012. The increase in number and proportion of serious events in 2023 may be attributable to the Patient Safety Authority's (PSA) ongoing efforts to improve the accuracy of event classification (i.e., ensuring that events meeting the definition of a serious event are reported as such). For instance, PSA previously focused on accurate classification of unplanned returns to the OR, and this subset of reports accounted for the largest increase in serious events in 2023.

Conclusion

The number of total reports, serious events, and high harm events, as well as preliminary reporting rates for hospitals and ASFs, all increased in 2023. The total number of reports submitted in 2023 is similar to 2021, although reporting rates for both hospitals and ASFs have increased since that time. PSA will continue working with Pennsylvania healthcare facilities to support high-quality reporting and patient safety practices.

Note

This analysis was exempted from review by the Advarra Institutional Review Board.

References

1. Pennsylvania Department of Health. Medical Care Availability and Reduction of Error (MCARE) Act, Pub. L. No. 154 Stat. 13 (2002). DOH website. <https://www.health.pa.gov/topics/Documents/Laws%20and%20Regulations/Act%2013%20of%202002.pdf>. Published 2002. Accessed April 13, 2024.

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