2020 Pennsylvania Patient Safety Reporting:

An Analysis of Serious Events and Incidents from the Nation's Largest Event Reporting Database

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Pennsylvania is the only state that requires acute healthcare facilities to report all events of harm or potential for harm. With over 3.9 million acute care event reports, 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. Of the 278,548 patient safety event reports submitted by Pennsylvania's acute care facilities in 2020, 97.2% were from hospitals and 2.7% were from ambulatory surgical facilities (ASFs). The remaining 0.1% were from birthing centers and abortion facilities.

The vast majority of the 2020 reports were Incidents (97.0%) rather than Serious Events (3.0%). For each of the last five years, the most frequently reported event type was Error Related to Procedure/Treatment/Test, accounting for 32.1% of all submitted acute care event reports in 2020. The second, third, and fourth most frequently reported event types were Medication Error, Complication of Procedure/Treatment/Test, and Fall, accounting for 16.7%, 16.2%, and 11.8% of submitted reports in 2020, respectively.

The reporting rates for hospitals in Q1 and Q2 2020 were 32.8 and 31.5 reports per 1,000 patient days, respectively. For ASFs, the reporting rates for Q1 and Q2 2020 were 9.8 and 8.4 reports per 1,000 surgical encounters, respectively.

Keywords: *acute care, patient safety, annual report, incidents, serious events, reporting rates, fall rates, COVID-19*

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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)*, which is the largest repository of patient safety data in the United States and one of the largest in the world, with over 3.9 million acute care records.

This article will show details of the PA-PSRS acute care data along with longitudinal and categorical insights that can be used to improve patient safety.

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 in Pennsylvania under Act 13 of 2002. 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]

Event reports include harm scores to describe the potential or actual harm to the patient as a result of the event. **Table 1** describes the categories of harm scores across an increasing level of patient harm. Harm scores A through D are classified as Incidents; harm scores E through I are classified as Serious Events; and harm scores G, H, and I are considered High Harm events.

Methods

The data from PA-PSRS event reports were extracted on February 1, 2021, to include all reports submitted during calendar year 2020.

We also obtained data from the Pennsylvania Health Care Cost Containment Council (PHC4)† to calculate rates based on patient days for hospitals and surgical encounters for ambulatory surgical facilities (ASFs). As of the writing of this article, we have data from PHC4 through Q2 2020. In last year's acute care data summary article,[2] Q3 and Q4 2019 were forecasted for rate calculation purposes. In general, this is a viable option due to the historically consistent seasonal behavior of hospital patient days and ASF surgical encounters. However, Q2 2020 showed an anomalous drop in patient days and surgeries, presumably due to the COVID-19 pandemic. Therefore, it is not a viable option to forecast reporting rates for Q3 and Q4 2020, so rates for 2020 will be based on data from Q1–Q2 only.

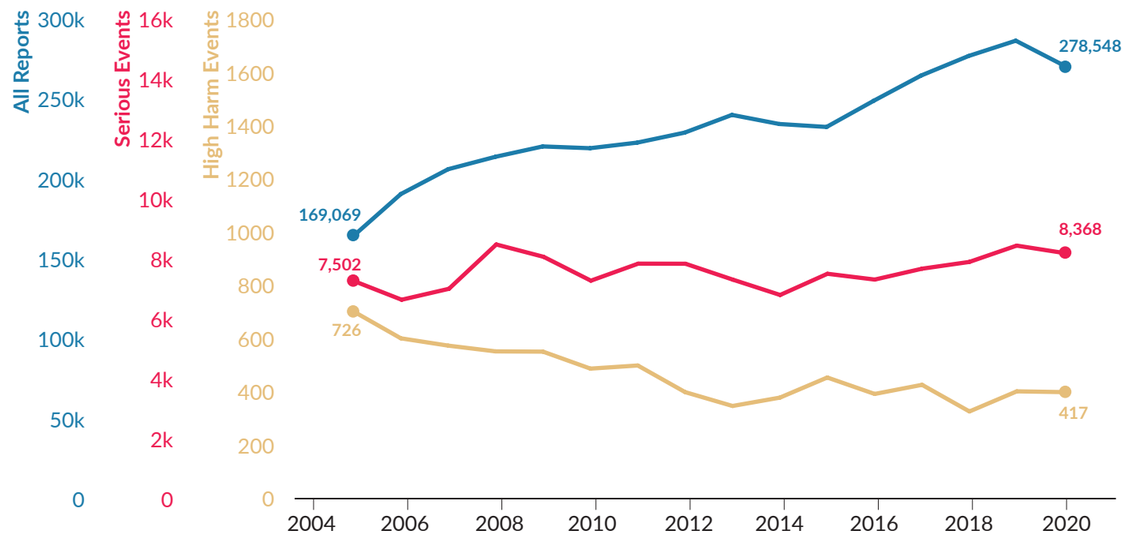
Table 1. PA-PSRS Harm Scores

	Harm Score	Definition
Incidents	A	Circumstances that could cause adverse events
	B1	An event occurred but it did not reach the individual
	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

*PA-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.

†The 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.

Figure 1. All Reports, Serious Events, and High Harm Events Submitted to PA-PSRS (2005—2020)



Results

A total of 278,548 reports were submitted by Pennsylvania acute care facilities in 2020, of which 8,368 were serious events and 417 were high harm events (see **Figure 1**). The numbers of all reports, serious events, and high harm events decreased in 2020 compared to 2019, with reductions of 5.3%, 2.6%, and 0.7%, respectively. The decrease in reports may be related to factors associated with the COVID-19 pandemic.

Incidents and serious events expressed as a percent of all reports are shown in **Figure 2**. Consistently, incidents comprise approximately 97% of all reports, and serious events comprise approximately 3%.

Table 2 shows a breakdown of Incidents and Serious Events by facility type from the last three years. Both hospitals and the group of other acute care facilities (ASFs, birthing centers [BRCs], and abortion facilities [ABFs]) had decreases in the number of reports submitted in 2020; the decreases were 5.0% and 15.7%, respectively.

The distribution of all events by harm score submitted during years 2018–2020 is shown in **Table 3**. Consistently, the largest portion of acute care events were reported with a harm score of C (40.6% in 2020), followed by harm scores D, B2, and A. Serious Events comprised 3.0% of all submitted reports in 2020, with harm score E being reported most frequently.

Reporting Rates

In addition to looking at increases or decreases in the total number of acute care events, normalized data (e.g., rates) can be used to assess changes in reporting per patient days for hospitals and per surgical encounters for ASFs. **Figure 3** shows that the reporting rate for hospitals stayed similar between 2019 and 2020 (32.6 per 1,000 patient days in 2019 versus 32.1 per 1,000 patient days during Q1–Q2 of 2020). For ASFs, the reporting rate has shown a steady increase each year from 2014, in which there were 6.3 reports per 1,000 surgical encounters, through 2020, in which there were 9.3 reports per 1,000 surgical encounters during Q1–Q2.

Event Types

When reported in PA-PSRS, events are classified by 228 possible combinations of event types and subtypes. The reporting taxonomy for Incidents and Serious Events provides for 10 main event types. **Table 4** shows the number of reports submitted for each of these event types over the past five years. For each of the last five years, the most frequently reported event type was Error Related to Procedure/Treatment/Test. During 2020, this event type accounted for 89,327 reports, representing 32.1% of all reports.

The second most common event type for each of the last five years was Medication Error. This event type accounted for 46,568 reports in 2020, representing 16.7% of all reports. The third most frequent event type reported over the last five years was Complication of Procedure/Treatment/Test. In 2020, 45,189 reports were submitted under this event type, which accounted for 16.2% of all reports

Figure 2. Incidents and Serious Events as a Percentage of All PA-PSRS Reports (2005—2020)

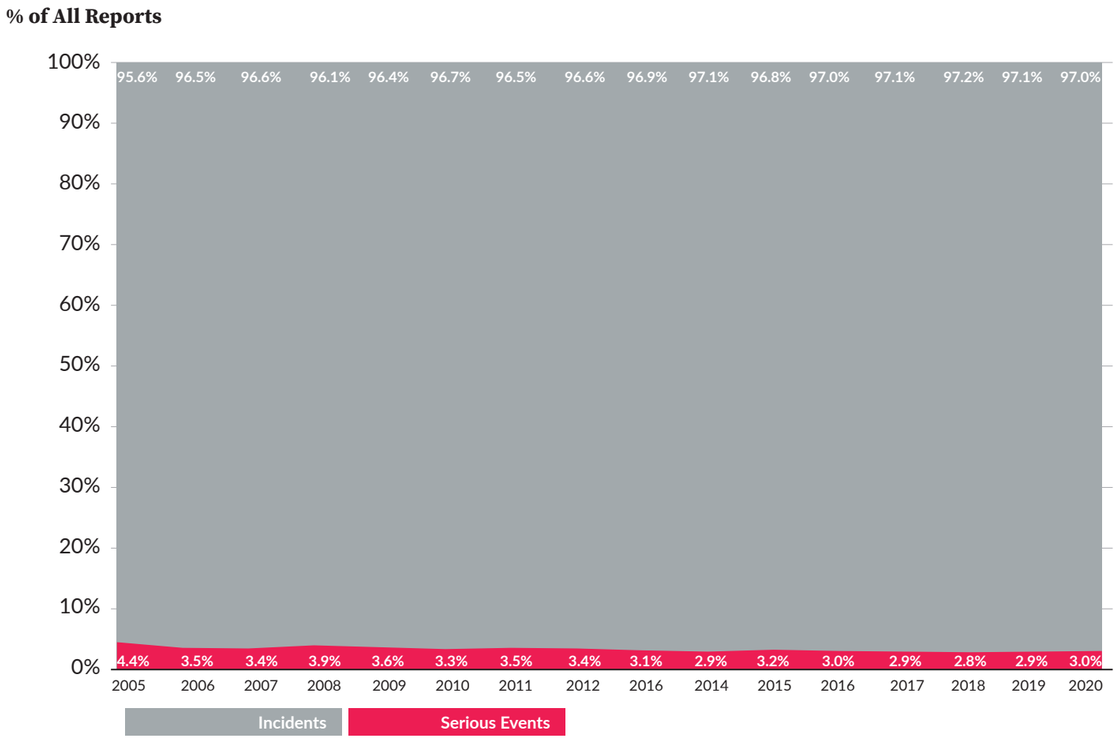


Table 2. All PA-PSRS Reports by Facility Type (2018—2020)

Facility Types	Event Classification	2018	2019	2020
Hospitals	Incident	269,309	278,213	264,013
	Serious	6,338	6,698	6,725
	Total	**275,647**	**284,911**	**270,738**
Other Acute Care Facilities	Incident	6,946	7,367	6,166
	Serious	1,756	1,897	1,644
	Total	**8,702**	**9,264**	**7,810**
Totals	Incident	276,255	285,580	270,179
	Serious	8,094	8,595	8,369
	Total	**284,349**	**294,175**	**278,548**

for the year. Finally, event type Fall accounted for 32,779 reports, 11.8% of all reports in 2020.

Serious Events

Serious events by event types and submission year are shown in **Table 5**. While complications of procedures, treatments, and tests accounted for 16.2% of all reports in 2020, they accounted for the majority (54.8%) of all serious events for the year.

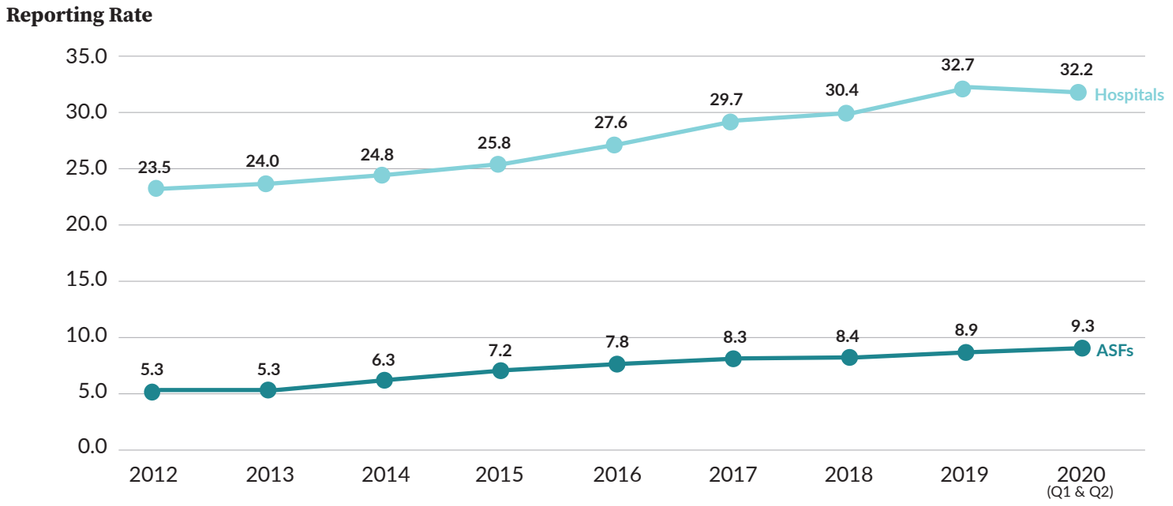
Event Subtypes

Each of the 10 main event types have between 6 and 13 subtypes to further classify the event. The number of reports, serious events, and their associated percentage distributions are contained in **Table 6**. This is a detailed accounting of the reports submitted in 2020 by the first level of subtype for each main event type. The main event types

Table 3. PA-PSRS Event Reports and Percentages by Harm Score and Year of Submission (2018—2020)

	Number of Reports			% of Reports		
Harm Score	**2018**	**2019**	**2020**	**2018**	**2019**	**2020**
A	26,906	26,930	27,567	9.5%	9.2%	9.9%
B1	3,629	3,835	2,803	1.3%	1.3%	1.0%
B2	35,606	39,208	34,100	12.5%	13.3%	12.2%
C	123,372	119,728	112,976	43.4%	40.7%	40.6%
D	86,742	95,879	92,734	30.5%	32.6%	33.3%
Incidents - Subtotal	276,255	285,580	270,180	97.2%	97.1%	97.0%
E	5,628	5,846	5,868	2.0%	2.0%	2.1%
F	2,123	2,329	2,083	0.7%	0.8%	0.7%
G	39	57	56	0.0%	0.0%	0.0%
H	86	116	115	0.0%	0.0%	0.0%
I	218	247	246	0.1%	0.1%	0.1%
Serious Events - Subtotal	8,094	8,595	8,368	2.8%	2.9%	3.0%
Total	284,349	294,175	278,548	100.0%	100.0%	100.0%

Figure 3. PA-PSRS Event Reporting Rates for Hospitals and ASFs (2012—2020)



Note: The 2020 reporting rates are based on Q1 and Q2 only, due to lagged data related to patient days and surgical encounters. Generally, Q3 and Q4 would be forecasted, but the COVID-19 pandemic created unpredictable changes to patient days (used for hospital rates) and surgical encounters (used for ASFs), and therefore, we lack confidence in any forecasts.

in the left column are listed in descending order by the number of reports (i.e., the same ordering as **Table 4**). Within each main event type, the subtypes are listed in descending order by number of reports. **Figures 4** and **5** show second-level subtypes, which provide more detailed classification of event reports.

Laboratory test problems associated with errors in procedures, treatments, and tests accounted for 42,583 reports, representing 15.3% of all 278,548 submitted reports in 2020. However, only 0.6% of the laboratory test problems (49 reports of 42,583) were classified as serious events. When looking at the second-level subtypes in **Figure 4** for the 42,583 laboratory test problem reports, 35.8% (15,224 of 42,583) were due to specimen quality problems, and another 22.6% (9,643 of 42,583) were classified as having other issues than ones listed in the taxonomy. When an event report is classified as an event subtype of "other," the reporter is required to enter a free-text response to specify the issue surrounding the event. The prevalent responses were indicative of incorrect orders; delays in collection, processing, and reporting; labeling issues; and specimen quality problems.

When looking at serious events, complications following surgery or invasive procedure accounted for 2,418 serious events, representing 28.9% of the 8,368 serious events submitted in 2020. As shown in **Figure 5**, Other (specify) was the most predominant subtype, comprising 1,081 of the 2,418 serious events related to complications following surgery or invasive procedure. The "other" category in this case was more variable and did not have as much in the way of consistency compared to the Laboratory Test Problems discussed above, so the event narrative field was investigated using natural language processing (NLP) techniques to detect common themes. Some of the most prevalent two-word phrases indicative of adverse effects are abdominal pain, rectal bleeding, and chest pain.

Other/Miscellaneous - Other

The most undefined portion of the event type taxonomy is the Other (Specify) subtype within the Other/Miscellaneous main event type. The Other/Miscellaneous main event type accounted for 23,191 of 278,548 (8.3%) submitted reports in 2020 as shown in **Table 4**. Of those 23,191 reports, 14,368 (62.0%) were classified as Other (Specify) as shown in **Table 6**. The prevalent responses in the specific Other (Specify) free-text response field for these 14,368 reports mentioned delays in care, failure to follow protocols/orders, failure to obtain assistance, admission/discharge issues, communication problems, and patients leaving against medical advice.

Cross Tabulations

Event Type and Harm Score

Table 7 contains submitted reports distributed by harm score for each of the 10 main event types. For the most frequently reported event type, Error related to Procedure/Treatment/Test, harm score C is reported most frequently; the intersection of this event type and harm score was the most common in 2020, with a total of 47,178 events and representing 16.9% of all reported events. The next most common intersection is with event type Complication of Procedure/Treatment/Test and harm score D, with a total of 25,041 events and representing 9.0% of all reported events.

Care Area and Harm Score

Care area is an informative dimension to analyze to determine whether there are indications of patient safety concerns specific to areas. Within the acute care data, there are 168 care areas to capture where events occur. We then place these care areas into one of 23 possible care area groups to cross tabulate a more manageable number of category elements with other variables of interest.

In **Table 8** we show a cross tabulation of care area group with harm score. Highlighting and shading is used to show the cells in which report counts were most concentrated in 2020. In this table, the largest concentrations of event reports appear in the cross sections of the Med/Surg care area group and harm scores C and D. Also, Surgical Services account for a large portion of harm scores E and F.

A cross tabulation of care area group and event type is provided in **Table 9**. The two largest concentrations of event reports are at the intersections of Error Related to Procedure/Treatment/Test with Surgical Services (16,851) and Emergency (12,877) care area groups. The third largest concentration is at the intersection of Fall and Med/Surg (11,544).

Other Acute Care Facilities (ASF, BRC, and ABF)

Overall acute care data predominately reflects hospitals in terms of reports. In 2020, 97.2% of the 278,548 acute care event reports were from hospitals. Therefore, different information can be obtained from looking at data from all other acute care facilities, comprised mostly of ASFs, along with BRCs and ABFs. The distribution of reports across the event types for the other acute care facilities is shown in **Table 10**. These facilities show a different distribution compared to the overall data in **Table 4**. Compared to all acute care reports, medication errors and falls are reported less frequently than other event types by other acute care facilities (see **Table 10**). The three event types reported most frequently were Error Related to Procedure/Treatment/Test, Complication of Procedure/Treatment/Test, and Other/Miscellaneous, which together account for 90.6% of all reports submitted in 2020 by other acute care facilities.

For other acute care facilities, the Complication of Procedure/Treatment/Test event type accounted for 72.1% of all serious events submitted in 2020 (see **Table 11**).

COVID-19

Effect on the Number of Event Occurrences

For purposes of this section, data were analyzed based on the date on which the event occurred ("event occurrence"). Figure 6 shows the effect the pandemic had on the number of event occurrences in 2020. April 2020 and surrounding months had lower than expected event occurrences.

Effect on the Rate of Falls

There have been concerns about the effect of COVID-19 on the rate of patient falls. The pandemic has created challenging conditions that impact healthcare providers' ability to respond to patient needs in a timely manner.[3] Through Q2 2020—the latest calendar quarter for which we have patient day and surgery count data—the rates for falls are indicated in **Figure 7**. The rate of falls in hospitals and ASFs increased in Q2 2020 compared to the rate calculated using the prior four quarters. Also, there has been an increase in the occurrences of falls in December 2020 (see **Figure 8**), but we will not know how this has impacted the rate until Q4 2020 patient days data are made available.

Table 4. Number and Percentage of PA-PSRS Reports Submitted by Event Type in Descending Order by 2020 Frequency (2016—2020)

	Number of Submitted Event Reports					% of Total Number of Reports				
Event Type	**2016**	**2017**	**2018**	**2019**	**2020**	**2016**	**2017**	**2018**	**2019**	**2020**
Error Related to P/T/T	73,961	80,103	89,154	96,440	**89,327**	28.9%	29.5%	31.4%	32.8%	**32.1%**
Medication Error	45,742	48,546	51,979	52,884	**46,568**	17.9%	17.9%	18.3%	18.0%	**16.7%**
Complication of P/T/T	37,904	40,661	43,202	46,691	**45,189**	14.8%	15.0%	15.2%	15.9%	**16.2%**
Fall	34,492	34,041	33,657	31,978	**32,779**	13.5%	12.5%	11.8%	10.9%	**11.8%**
Other/Miscellaneous	20,399	24,467	23,139	22,761	**23,191**	8.0%	9.0%	8.1%	7.7%	**8.3%**
Skin Integrity	24,649	24,131	21,752	20,546	**19,697**	9.6%	8.9%	7.6%	7.0%	**7.1%**
Equip./Supplies/Devices	6,894	7,092	7,805	8,792	**8,062**	2.7%	2.6%	2.7%	3.0%	**2.9%**
Transfusion	4,354	5,017	5,264	6,195	**5,779**	1.7%	1.8%	1.9%	2.1%	**2.1%**
Adverse Drug Reaction	5,672	5,669	5,958	5,700	**5,627**	2.2%	2.1%	2.1%	1.9%	**2.0%**
Patient Self-Harm	1,649	2,136	2,439	2,188	**2,329**	0.6%	0.8%	0.9%	0.7%	**0.8%**
Total	**255,716**	**271,863**	**284,349**	**294,175**	**278,548**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 5. Number of PA-PSRS Serious Event Reports Submitted by Event Type in Descending Order by 2020 Frequency (2016—2020)

	Number of Submitted Serious Events					% of Total Number of Serious Events				
Event Type	**2016**	**2017**	**2018**	**2019**	**2020**	**2016**	**2017**	**2018**	**2019**	**2020**
Complication of P/T/T	4,005	4,138	4,183	4,529	**4,582**	53.0%	52.5%	51.7%	52.7%	**54.8%**
Fall	941	945	961	932	**940**	12.5%	12.0%	11.9%	10.8%	**11.2%**
Error Related to P/T/T	606	688	705	768	**753**	8.0%	8.7%	8.7%	8.9%	**9.0%**
Other/Miscellaneous	806	818	799	983	**708**	10.7%	10.4%	9.9%	11.4%	**8.5%**
Skin Integrity	544	607	779	654	**574**	7.2%	7.7%	9.6%	7.6%	**6.9%**
Adverse Drug Reaction	221	243	217	241	**344**	2.9%	3.1%	2.7%	2.8%	**4.1%**
Patient Self-Harm	152	163	189	176	**166**	2.0%	2.1%	2.3%	2.0%	**2.0%**
Medication Error	173	201	188	182	**166**	2.3%	2.5%	2.3%	2.1%	**2.0%**
Equip./Supplies/Devices	76	65	56	78	**77**	1.0%	0.8%	0.7%	0.9%	**0.9%**
Transfusion	28	18	17	52	**58**	0.4%	0.2%	0.2%	0.6%	**0.7%**
Total	**7,552**	**7,886**	**8,094**	**8,595**	**8,368**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 6. Number and Percentage of PA-PSRS Reports and Serious Events Submitted in 2020 by Event Type and Subtype

Event Type	Event Subtype	Total Reports	% of Total Reports	Serious Events	% of Serious Events
Error Related to P/T/T	Laboratory test problem	42,583	15.3%	49	0.6%
	Surgery/invasive procedure problem	17,053	6.1%	517	6.2%
	Other (specify)	9,653	3.5%	56	0.7%
	Radiology/imaging test problem	7,439	2.7%	54	0.6%
	Referral/consult problem	7,286	2.6%	20	0.2%
	Respiratory care	3,451	1.2%	49	0.6%
	Dietary	1,862	0.7%	8	0.1%
Medication Error	Wrong	23,899	8.6%	85	1.0%
	Other (specify)	10,341	3.7%	24	0.3%
	Dose omission	4,527	1.6%	18	0.2%
	Prescription/refill delayed	2,596	0.9%	6	0.1%
	Monitoring error (includes contraindicated drugs)	1,982	0.7%	9	0.1%
	Extra dose	1,504	0.5%	18	0.2%
	Medication list incorrect	946	0.3%	6	0.1%
	Unauthorized drug	704	0.3%	-	-
	Inadequate pain management	69	< 0.1%	-	-
Complication of P/T/T	IV site complication (phlebitis, bruising, infiltration)	11,688	4.2%	357	4.3%
	Complication following surgery or invasive procedure	6,763	2.4%	2,418	28.9%
	Other (specify)	6,583	2.4%	390	4.7%
	Cardiopulmonary arrest outside of ICU setting	3,635	1.3%	78	0.9%
	Catheter or tube problem	3,116	1.1%	235	2.8%
	Neonatal complication	2,456	0.9%	120	1.4%
	Maternal complication	2,351	0.8%	201	2.4%
	Extravasation of drug or radiologic contrast	2,123	0.8%	28	0.3%
	Onset of hypoglycemia during care	2,031	0.7%	7	0.1%
	Healthcare-associated infection	1,968	0.7%	427	5.1%
	Emergency department	1,263	0.5%	86	1.0%
	Anesthesia event	1,209	0.4%	234	2.8%
	Complication following spinal manipulative therapy	3	< 0.1%	1	< 0.1%
Fall	Found on floor	7,407	2.7%	262	3.1%
	Other/unknown (specify)	5,166	1.9%	96	1.1%
	Ambulating	5,115	1.8%	202	2.4%
	Toileting	3,408	1.2%	122	1.5%
	Sitting in chair/wheelchair	2,818	1.0%	50	0.6%
	Assisted fall	2,748	1.0%	22	0.3%
	Lying in bed	2,564	0.9%	69	0.8%
	Sitting at side of bed	1,069	0.4%	21	0.3%
	Transferring	1,056	0.4%	26	0.3%
	Hallways of facility	499	0.2%	19	0.2%
	In exam room/from exam table	345	0.1%	14	0.2%
	From stretcher	306	0.1%	20	0.2%
	Grounds of facility	278	0.1%	17	0.2%
Other/ Miscellaneous	Other (specify)	14,368	5.2%	331	4.0%
	Unanticipated transfer to higher level of care	7,703	2.8%	314	3.8%
	Inappropriate discharge	1,019	0.4%	12	0.1%
	Other unexpected death	98	< 0.1%	49	0.6%
	Electric shock to patient	1	< 0.1%	-	-
	Death or injury involving seclusion	1	< 0.1%	1	< 0.1%
	Death or injury during inpatient elopement	1	< 0.1%	1	< 0.1%
Skin Integrity	Pressure injury	7,467	2.7%	446	5.3%
	Other (specify)	5,857	2.1%	38	0.5%
	Skin tear	4,036	1.4%	17	0.2%
	Abrasion	987	0.4%	5	0.1%
	Blister	620	0.2%	4	< 0.1%
	Laceration	330	0.1%	35	0.4%
	Burn (electrical, chemical, thermal)	201	0.1%	27	0.3%
	Rash/hives	189	0.1%	2	< 0.1%
	Venous stasis ulcer	10	< 0.1%	-	-
Equipment/ Supplies/ Devices	Equipment malfunction	2,518	0.9%	22	0.3%
	Equipment not available	964	0.3%	2	< 0.1%
	Medical device problem	932	0.3%	12	0.1%
	Other (specify)	878	0.3%	15	0.2%
	Broken item(s)	675	0.2%	14	0.2%
	Sterilization problem	669	0.2%	3	< 0.1%
	Equipment misuse	289	0.1%	-	-
	Equipment safety situation	281	0.1%	2	< 0.1%
	Disconnected	244	0.1%	4	< 0.1%
	Equipment wrong or inadequate	203	0.1%	2	< 0.1%
	Electrical problem	174	0.1%	-	-
	Inadequate supplies	171	0.1%	1	< 0.1%
	Outdated items(s)	64	< 0.1%	-	-
Transfusion	Other (specify)	1,705	0.6%	3	< 0.1%
	Event related to blood product sample collection	1,592	0.6%	-	-
	Event related to blood product administration	915	0.3%	11	0.1%
	Apparent transfusion reaction	832	0.3%	42	0.5%
	Event related to blood product dispensing or distribution	393	0.1%	-	-
	Consent missing/inadequate	201	0.1%	-	-
	Wrong patient requested	46	< 0.1%	-	-
	Wrong component issued	27	< 0.1%	2	< 0.1%
	Special product need not issued	25	< 0.1%	-	-
	Special product need not requested	16	< 0.1%	-	-
	Mismatched unit	13	< 0.1%	-	-
	Wrong component requested	11	< 0.1%	-	-
	Wrong patient transfused	3	< 0.1%	-	-

Table 6 (continued). Number and Percentage of PA-PSRS Reports and Serious Events by Event Type and Subtype Submitted in 2020

Event Type	Event Subtype	Total Reports	% of Total Reports	Serious Events	% of Serious Events
Adverse Drug Reaction	Other (specify)	3,546	1.3%	198	2.4%
	Skin reaction (rash, blistering, itching, hives)	1,407	0.5%	86	1.0%
	Mental status change	210	0.1%	27	0.3%
	Hematologic problem	137	< 0.1%	7	0.1%
	Hypotension	123	< 0.1%	13	0.2%
	Nephrotoxicity	106	< 0.1%	8	0.1%
	Dizziness	57	< 0.1%	1	< 0.1%
	Arrhythmia	41	< 0.1%	4	< 0.1%
Patient Self-Harm	Other self-harm (specify)	1,231	0.4%	68	0.8%
	Self-mutilation	881	0.3%	27	0.3%
	Ingestion of foreign object or substance	189	0.1%	44	0.5%
	Suicide attempt - injury	15	< 0.1%	15	0.2%
	Suicide - death	12	0.0%	12	0.1%
	Anorexia/bulemia	1	0.0%	-	-
Total		**278,548**	**100.0%**	**8,368**	**100.0%**

Figure 4. PA-PSRS Reports Submitted in 2020 Classified as Error Related to Procedure/Treatment/Test, Laboratory Test Problem (n=42,583)

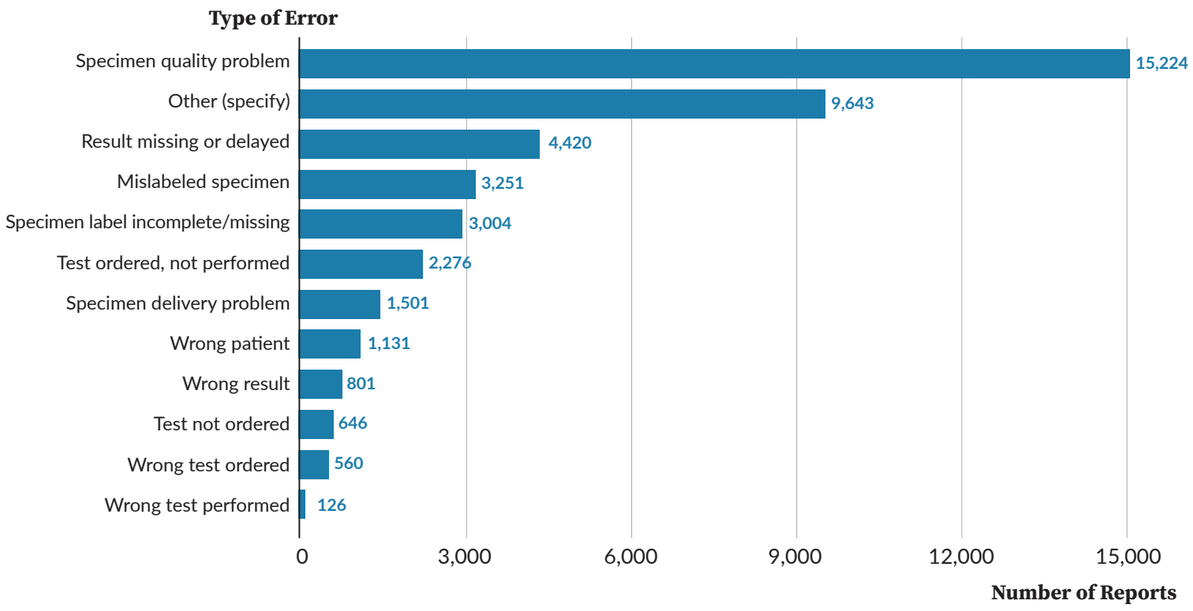


Figure 5. PA-PSRS Serious Event Reports Submitted in 2020 Classified as Complication of Procedure/Treatment/Test, Complication Following Surgery/Invasive Procedure (n=2,418)

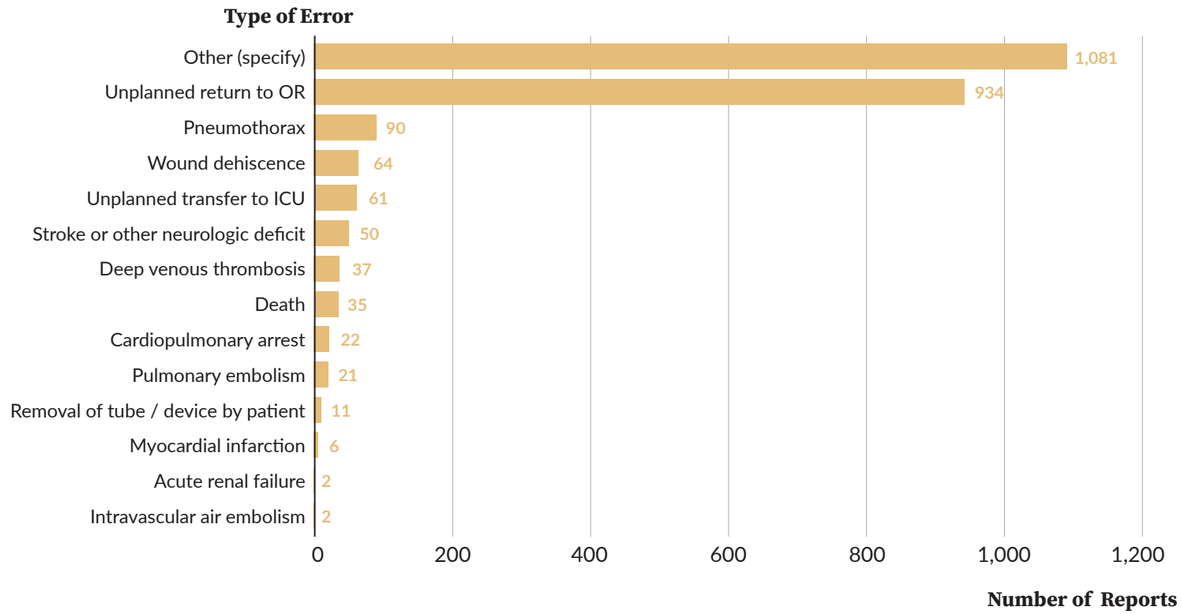


Table 7. PA-PSRS Reports Submitted in 2020 by Event Type and Harm Score

Event Type	A	B1	B2	C	D	E	F	G	H	I	Total
Error Related to P/T/T	13,633	1,340	11,301	47,178	15,122	561	151	14	12	15	**89,327**
Medication Error	2,913	724	18,154	16,723	7,888	113	46	1	4	2	**46,568**
Complication of P/T/T	2,794	74	617	12,081	25,041	2,928	1,417	28	77	132	**45,189**
Fall	110	51	306	17,501	13,871	718	204	3	6	9	**32,779**
Other/Miscellaneous	4,860	453	1,769	6,321	9,080	461	170	3	7	67	**23,191**
Skin Integrity	604	9	54	4,977	13,479	557	15	2	-	-	**19,697**
Equip./Supplies/Devices	1,382	99	1,337	3,573	1,594	58	11	1	3	4	**8,062**
Transfusion	1,187	44	481	2,827	1,182	49	6	-	1	2	**5,779**
Adverse Drug Reaction	39	4	17	1,070	4,153	283	52	2	4	3	**5,627**
Patient Self-Harm	45	5	64	725	1,324	140	11	2	1	12	**2,329**
Total	**27,567**	**2,803**	**34,100**	**112,976**	**92,734**	**5,868**	**2,083**	**56**	**115**	**246**	**278,548**

Table 8. PA-PSRS Reports Submitted in 2020 by Care Area Group and Harm Score

Care Area Group	A	B1	B2	C	D	E	F	G	H	I	Total
Administration	96	15	132	138	85	19	5	-	-	-	**490**
Clinic/Outpatient Office	747	101	1,460	3,561	2,613	157	40	1	2	6	**8,688**
Emergency	5,415	253	2,497	12,058	5,686	255	81	2	5	16	**26,268**
ICU	2,106	152	1,629	8,883	9,901	500	65	10	9	28	**23,283**
Imaging/Diagnostic	1,034	100	1,216	5,993	6,086	268	81	5	7	18	**14,808**
Intermediate Unit	806	116	507	3,373	3,746	81	15	-	-	4	**8,648**
Labor and Delivery	342	29	221	1,367	3,044	143	22	1	6	12	**5,187**
Laboratory	762	363	1,852	5,859	1,359	35	5	1	-	1	**10,237**
Med/Surg	5,436	392	3,671	22,612	23,239	884	208	2	21	42	**56,507**
NICU	375	33	1,554	3,606	1,139	44	4	-	2	4	**6,761**
Nursery	68	8	58	368	696	9	1	-	-	1	**1,209**
OB/GYN Unit	435	55	336	1,480	1,865	147	41	-	3	4	**4,366**
Other	949	185	1,619	3,980	3,314	182	93	-	4	7	**10,333**
Pediatric	1,262	63	4,898	4,087	1,331	60	13	-	-	1	**11,715**
Pharmacy	216	94	1,383	943	566	5		-	-	-	**3,207**
PICU	621	21	5,297	4,442	588	18	6	-	-	3	**10,996**
Psychiatric Unit	373	53	265	4,088	4,396	377	35	2	-	15	**9,604**
Rehab Services	84	14	71	935	522	26	9	-	-	1	**1,662**
Rehab Unit	590	67	511	4,545	4,795	166	53	1	2	13	**10,743**
Respiratory	75	14	33	395	111	2	1	-	-	-	**631**
Specialty Unit	1,552	87	1,068	7,656	6,492	279	66	2	4	14	**17,220**
Surgical Services	4,223	588	3,822	12,607	11,160	2,211	1,239	29	50	56	**35,985**
Total	**27,567**	**2,803**	**34,100**	**112,976**	**92,734**	**5,868**	**2,083**	**56**	**115**	**246**	**278,548**

Table 9. PA-PSRS Reports Submitted in 2020 by Care Area Group and Event Type

Care Area Group	Error Related to P/T/T	Med. Error	Compli-cation of P/T/T	Fall	Other/ Misc	Skin Integrity	Equip./ Supplies/ Devices	Trans-fusion	Adverse Drug Reaction	Patient Self-Harm	Total
Administration	120	186	53	18	68	18	6	17	4	-	**490**
Clinic/Outpatient	3,124	1,315	887	725	625	242	228	210	1,316	16	**8,688**
Emergency	12,877	3,057	3,053	2,544	2,575	261	456	918	363	164	**26,268**
ICU	7,080	3,833	3,488	1,111	1,138	4,822	683	815	290	23	**23,283**
Imaging/Diagnostic	6,298	186	4,842	677	696	511	489	31	1,077	1	**14,808**
Intermediate Unit	1,918	1,363	1,400	1,294	1,049	1,100	168	200	145	11	**8,648**
Labor and Delivery	1,166	320	2,996	104	276	46	87	161	29	2	**5,187**
Laboratory	9,338	32	141	64	122	12	27	498	3	-	**10,237**
Med/Surg	11,414	10,027	9,078	11,544	5,829	5,683	717	1,133	983	99	**56,507**
NICU	2,864	1,965	947	8	337	144	401	94	1	-	**6,761**
Nursery	401	74	633	15	57	10	14	5	-	-	**1,209**
OB/GYN Unit	1,331	577	1,595	191	376	110	103	68	13	2	**4,366**
Other	3,811	1,567	1,250	1,140	1,107	396	369	266	409	18	**10,333**
Pediatric	2,374	5,631	1,526	505	868	215	389	130	57	20	**11,715**
Pharmacy	51	3,005	6	1	20	-	18	-	106	-	**3,207**
PICU	3,110	5,658	1,094	47	341	224	433	81	6	2	**10,996**
Psychiatric Unit	268	1,087	181	4,201	1,599	242	18	-	82	1,926	**9,604**
Rehab Services	153	30	125	795	237	278	38	2	3	1	**1,662**
Rehab Unit	806	1,736	759	3,936	1,309	2,002	70	38	82	5	**10,743**
Respiratory	295	180	33	13	46	17	44	-	3	-	**631**
Specialty Unit	3,677	3,213	2,619	3,308	1,748	1,536	228	501	365	25	**17,220**
Surgical Services	16,851	1,526	8,483	538	2,768	1,828	3,076	611	290	14	**35,985**
Total	**89,327**	**46,568**	**45,189**	**32,779**	**23,191**	**19,697**	**8,062**	**5,779**	**5,627**	**2,329**	**278,548**

Table 10. Number and Percentage of Total PA-PSRS Reports Submitted by Other Acute Care Facilities (ASF, BRC, ABF) by Event Type in Descending Order by 2020 Frequency

	Number of Reports					% of Total Number of Reports				
Event Type	**2016**	**2017**	**2018**	**2019**	**2020**	**2016**	**2017**	**2018**	**2019**	**2020**
Error Related to P/T/T	2,082	2,804	3,092	3,538	3,048	26.2%	32.8%	35.5%	38.2%	39.0%
Complication of P/T/T	2,310	2,420	2,426	2,478	2,268	29.1%	28.3%	27.9%	26.7%	29.0%
Other/Miscellaneous	2,762	2,543	2,504	2,417	1,766	34.7%	29.7%	28.8%	26.1%	22.6%
Skin Integrity	204	233	209	246	206	2.6%	2.7%	2.4%	2.7%	2.6%
Fall	150	156	141	150	161	1.9%	1.8%	1.6%	1.6%	2.1%
Equip./Supplies/Devices	148	162	133	180	145	1.9%	1.9%	1.5%	1.9%	1.9%
Medication Error	187	163	104	173	129	2.4%	1.9%	1.2%	1.9%	1.7%
Adverse Drug Reaction	102	63	84	79	77	1.3%	0.7%	1.0%	0.9%	1.0%
Patient Self-Harm	4	4	6	2	10	0.1%	0.0%	0.1%	0.0%	0.1%
Transfusion	2	-	3	1	-	0.0%	-	0.0%	0.0%	-
Total	**7,951**	**8,548**	**8,702**	**9,264**	**7,810**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 11. Number and Percentage of PA-PSRS Serious Event Reports Submitted by Other Acute Care Facilities (ASF, BRC, ABF) by Event Type in Descending Order by 2020 Frequency

	Number of Reports					% of Total Number of Reports				
Event Type	**2016**	**2017**	**2018**	**2019**	**2020**	**2016**	**2017**	**2018**	**2019**	**2020**
Complication of P/T/T	1,120	1,223	1,198	1,272	1,184	65.9%	67.2%	68.2%	67.1%	72.1%
Other/Miscellaneous	459	463	434	478	300	27.0%	25.4%	24.7%	25.2%	18.3%
Error Related to P/T/T	36	65	54	57	74	2.1%	3.6%	3.1%	3.0%	4.5%
Skin Integrity	27	15	23	30	23	1.6%	0.8%	1.3%	1.6%	1.4%
Fall	23	27	18	17	18	1.4%	1.5%	1.0%	0.9%	1.1%
Adverse Drug Reaction	27	12	17	17	24	1.6%	0.7%	1.0%	0.9%	1.5%
Medication Error	3	8	5	14	5	0.2%	0.4%	0.3%	0.7%	0.3%
Equip./Supplies/Devices	3	6	5	10	10	0.2%	0.3%	0.3%	0.5%	0.6%
Patient Self-Harm	1	1	1	1	5	0.1%	0.1%	0.1%	0.1%	0.3%
Transfusion	1	-	1	1	-	0.1%	-	0.1%	0.1%	-
Total	**1,700**	**1,820**	**1,756**	**1,897**	**1,643**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Figure 6. Hospital and Other Acute Care Facility Event Occurrences by Month (2019—2020)

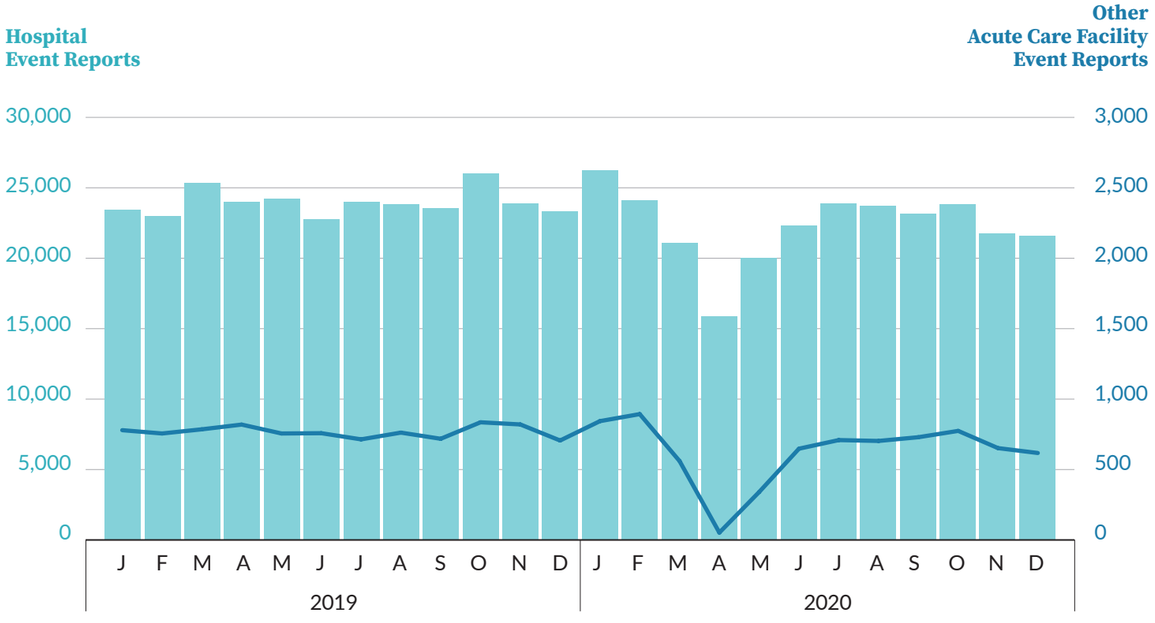


Figure 7. Rate of PA-PSRS Fall Event Occurrences at Hospitals and ASFs from Q1 2018 to Q2 2020

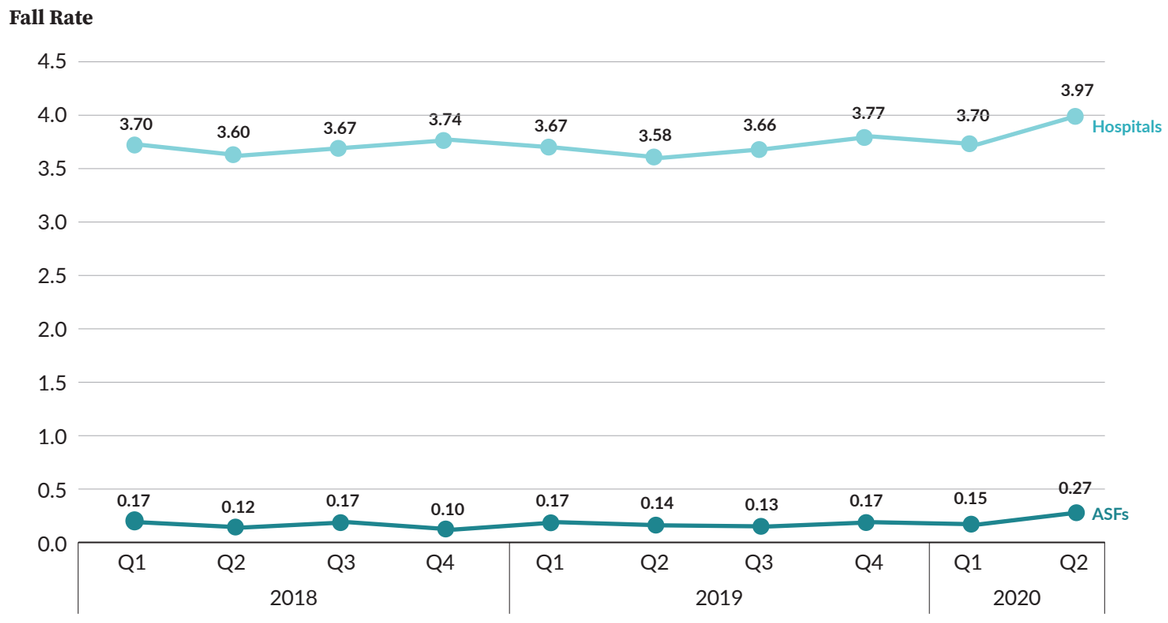
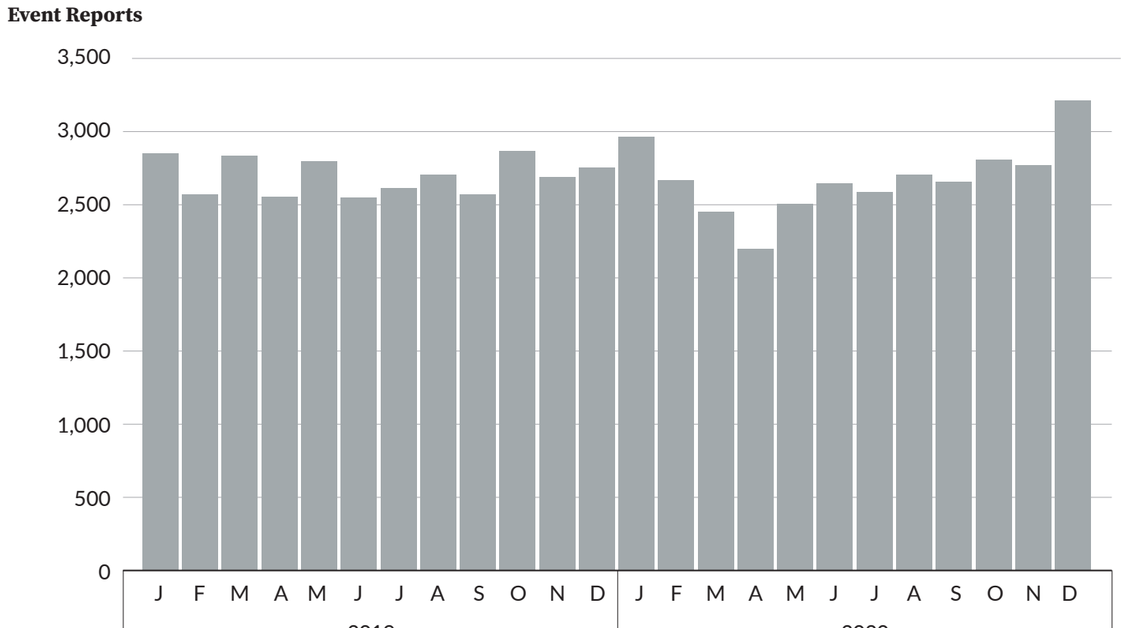


Figure 8. PA-PSRS Fall Event Occurrences by Month from 2019—2020



Conclusion

There were 278,548 acute care events reported in PA-PSRS during 2020, representing a 5.3% decrease from 2019. Prior to 2020, reports of Incidents and Serious Events had increased each year since 2016. The number of reported high harm events has decreased from 726 in 2005 to 417 in 2020. The top four event types, accounting for more than three quarters of the acute event reports in 2020, are Error Related to Procedure/Treatment/Test, Medication Error, Complication of Procedure/Treatment/Test, and Fall. The COVID-19 pandemic appears to have had a direct impact on reporting activity by facilities in 2020.

Note

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

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