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Changes in Patient Safety Incident Reporting Events Before, During, and After the COVID-19 Pandemic

P420

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INTRODUCTION

COVID-19 impacted hospitals and patient care. Postponed surgeries and fewer non-COVID patients led to healthcare worker reassignments and modified infection control practices. This study will analyze patient safety events during the different periods of the pandemic to identify trends across various events.

AIM

The primary aims of this study were to describe and compare the relationship between the character type of the patient safety incidents (PSIs) and the different periods of the COVID-19 pandemic by reviewing the reported safety incidents.

METHOD

This study assessed all reported patient safety incidents (PSIs) at a Taiwan urban medical center with 1800 beds from July 2018 to October 2023:

- **Data Source**: Extracted from the hospital's Safety Reporting System (SRS).
- **Data Limitation**: Information regarding "Near Miss" PSIs was not disclosed by the Medical Quality Department due to confidentiality.
- **Scope of Analysis**: Covered 15 categories of patient safety events, including public safety, surgery, medical records/privacy, anesthesia, falls, injuries, catheters, transfusions, inspections, exams, transfers, treatment/care, medical information, equipment materials, and pharmacy.

Pandemic-Related Periods Analyzed:

1. Before COVID-19 (July 2018 - December 2019)
2. First Half of COVID-19 (January 2020 - June 2021)
3. Second Half of COVID-19 (July 2021 - December 2022)
4. After COVID-19 Peak (January 2023 - October 2023)

- **Severity Evaluation**: Assessed using the Modified Safety Assessment Code (SAC) Matrix, adapted by The Joint Commission of Taiwan (JCT).
- **Statistical Analysis**: A Chi-Square test was conducted to determine if there were statistically significant differences in the distribution of PSIs across different COVID-19 periods.

RESULTS

The analysis results are shown in Table 1. Because there are cells with an expected count of less than 5, it was tested using Fisher's exact test ($p<0.05$). The analysis revealed significant fluctuations in the total number of PSIs reported across the four periods. Notably, there was a 0.10% increase in PSIs during the first half of COVID-19 compared to the pre-pandemic period, followed by a 0.13% decrease in the second half of COVID-19 as measures were presumably optimized and the healthcare system adapted to the pandemic challenges.

The distribution of PSIs across the 15 categories highlighted specific areas of concern during the pandemic:

Pipelines: This category significantly increased during the first half of COVID-19, possibly reflecting the challenges in patient mobility and catheter approach due to resource allocation and infection control measures to COVID-19 care.

Equipment Materials: Reported incidents in this category surged during the pandemic, peaking in the second half. This may be attributed to the heightened demand for medical equipment and the strain on supply chains.

Pharmacy: Incidents related to pharmacy services experienced a notable variance, with an increase during the early pandemic periods, potentially due to the complexities of managing COVID-19 treatments.

Surgery and Anesthesia: These categories decreased during the pandemic, likely due to the postponement of elective procedures and the reassignment of resources to COVID-19 response efforts.

			Classfication of patient safety events															
			Public safety	Surgery	Medical records/Privacy	Anest--hesia	Falls	Injurys	Pipeline	Transfu--sions	inspect--ions	Exams	Trans--fers	Treatme--nt/ Care	Medical informa--tion	Equipme--nt materials	pharma--cy	Total
Peroids	before COVID	Count	14	116	37	9	147	58	87	10	68	112	180	87	1	21	108	1055
		%	1.3%	11.0%	3.5%	0.9%	13.9%	5.5%	8.2%	0.9%	6.4%	10.6%	17.1%	8.2%	0.1%	2.0%	10.2%	100.0%
	1st half of COVID	Count	10	110	30	13	161	11	189	19	41	102	166	128	0	78	104	1162
		%	0.9%	9.5%	2.6%	1.1%	13.9%	0.9%	16.3%	1.6%	3.5%	8.8%	14.3%	11.0%	0.0%	6.7%	9.0%	100.0%
	2nd half of COVID	Count	10	56	15	11	156	11	133	14	55	76	184	187	12	19	75	1014
		%	1.0%	5.5%	1.5%	1.1%	15.4%	1.1%	13.1%	1.4%	5.4%	7.5%	18.1%	18.4%	1.2%	1.9%	7.4%	100.0%
	after COVID	Count	6	90	2	5	74	9	93	4	92	61	193	142	5	12	53	841
		%	0.7%	10.7%	0.2%	0.6%	8.8%	1.1%	11.1%	0.5%	10.9%	7.3%	22.9%	16.9%	0.6%	1.4%	6.3%	100.0%
Total		Count	40	372	84	38	538	89	502	47	256	351	723	544	18	130	340	4072
		%	1.0%	9.1%	2.1%	0.9%	13.2%	2.2%	12.3%	1.2%	6.3%	8.6%	17.8%	13.4%	0.4%	3.2%	8.3%	100.0%

*Table 1. Date Classification * Event Classification Cross Table*

CONCLUSIONS

These findings suggest that the COVID-19 pandemic has had a multifaceted impact on patient safety, with increased overall events and significant shifts in specific categories. Targeted interventions are needed to address the increase in events related to catheter and equipment materials, including improved infection control strategies and supply chain management for medical equipment. Fewer surgeries, injuries, transfusions, and other events occurred during the later COVID timeframes due to lower patient volumes from postponed procedures and fewer non-COVID admissions. Meanwhile, the transfer growth and focus on treatment/care events during peak COVID reflects the demands of managing COVID caseloads and the workload of medical staff.

A thorough analysis of event details and severity levels is crucial to gain deeper insights. The trends in categories unequivocally demonstrate the impact of evolving hospital conditions during the pandemic on patient safety events and associated risks. Therefore, it is imperative to implement targeted improvements in training, protocols, or monitoring to address the changing events landscape.

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