ORIGINAL ARTICLE

Patients Safety Events at Philippine General Hospital

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ABSTRACT

Background and Objective. Proper documentation of patient safety events is important to be able to provide changes that can prevent events from occurring again. The Philippine General Hospital launched an online platform for reporting patient safety events in 2017. This paper aimed to describe the patient safety events, initial response to the event, and preventive actions done in the institution.

Methods. This is a retrospective descriptive study of patient safety event records from August 2017 to April 2022. General data of the patients, details surrounding the events, response to the event, and preventive measures done after the event were documented. Descriptive analysis was performed.

Results. There was a total of 625 events reported with 525 total unique reports. There was an increased rate of patient safety event reports from 2021 to 2022. The average rate was 23.8 and 25.7 reports per month, respectively. Most reports were for in-patient cases and were type 3 preventable adverse events. The general initial response of healthcare personnel to the adverse events is to provide the appropriate clinical care. Preventive measures include re-orientation and event specific actions.

Conclusion. Documentation is crucial for patient safety events to provide solutions and prevent reoccurrence of these events that can cause harm to patients.

Keywords: event reporting, healthcare quality, medical error, patient safety, patient harm

INTRODUCTION

Ensuring patient safety has become a standard in the provision of healthcare in recent years. A study in 2013 revealed that adverse events from medical care is a global concern as a major cause of morbidity, disability, and mortality.[1] It was also estimated that two-thirds of these adverse events occur in middle- and lower-income countries. Furthermore, the National Academies of Science, Engineering, and Medicine noted that 134 million adverse events occur in these countries each year, and has caused 2.6 million deaths.[2] These incidences have proven to increase the cost of health management, especially in developing countries.[3] Institutionalizing patient safety protocols and practices have shown to be effective in reducing these adverse events. The Organization for Economic Cooperation and Development reported that up to 80% of these incidents can be avoided, and that an increase in patient engagement can reduce the burden of harm by 15%.[3]

Integration of Universal Health Coverage (UHC) in the healthcare system is a principal component in the United Nations' third sustainable development goal (SDG 3) – to ensure healthy lives and promote well-being for all at all

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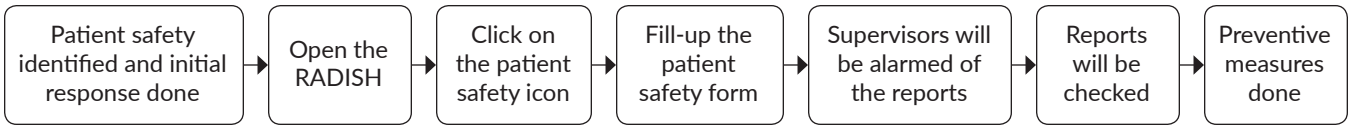

Figure 1. Flow chart of Patient Safety reporting.

ages.[4] Moreover, safety is cited as one of the six dimensions of quality healthcare alongside effectiveness, patient-centeredness, timeliness, efficiency, and equity which are part of the goals of UHC.[2] The integration of UHC aims to address patient safety concerns in the country. Obermann, Jowett and Kwon noted that the benefit coverage of Philhealth, the UHC platform in the Philippines, remains insufficient in addressing the burden of disease in the country.[5] Thus, emphasizing the importance of ensuring patient safety and minimizing adverse events. The UHC Bill was enacted into law in 2019 as Republic Act No. 11223, automatically enrolling all Filipino citizens into PhilHealth, the National Health Insurance Program.[6]

In any setting, there are challenges in ensuring patient safety in practice. However, in low-income countries, resource constraints and weak governance structures are particularly influential in its implementation.[7] Furthermore, medical institutions with poor organizational culture, inadequate infrastructure, lack of cohesive mission, system shocks, and dysfunctional external relations have also been cited as barriers in quality improvement.[8] Verstappen et al. reported that a range of methods is available to ensure patient safety and quality improvement.[9] However, often a combination of these methods was seen to be best; especially when incorporating prospective risk analysis. This emphasizes the need for Filipino healthcare providers to institutionalize a system for patient safety and quality improvement.

The Philippine General Hospital (PGH) is committed to improve quality and enhance safety of patient care. It recognizes the importance of nurturing a culture of safety and continuous learning among all of its staff members. In nursing, prior to the electronic reporting of patient safety events in August 2017, events were reported to the Head Nurse and Chief Nurse then submitted to the Deputy Director of Nursing. These events were then forwarded to the Nursing Patient Safety Committee to process and review the event. A nursing Patient Safety Handbook was also developed which contained work instructions on the different concepts and categories of patient safety. In August 2017, the PGH piloted an online electronic patient safety event reporting form using Google Forms. The URL link to the form was shared to the medical staff, including the medical interns and the nursing services. In 2018, the Quality Improvement and Patient Safety (QUIPS) Committee was created. A copy of the submitted report was then auto-forwarded to the email addresses of the Chair of QUIPS and other representatives from the Nursing Service.

In 2018, a computerized Registry of Admissions and Discharges (RADISH) was created initially to facilitate transfers from the emergency room to the wards and has since expanded to serve the clinical information management needs of the hospital. The program was donated to PGH by Dr. Homer Co, Coordinator for Service, last February 13, 2018. Forms such as the Philippine Integrated Disease Surveillance and Response (PIDSR), Adverse Drug Event (ADE) reporting, clinical abstract/discharge summary, and Operating room (OR) Anesthesia record were added. Hospital outcomes such as hospital mortalities, hospital acquired infection, and occupancy rates can likewise be generated. A URL link to the electronic patient safety event reporting form was later placed on the RADISH log in and welcome pages to improve access and encourage reporting.

Figure 1 shows the general flow of the patient safety event reporting. Once a patient safety event is identified, an initial response to protect or prevent further harm is performed. This is followed by a report to the immediate supervisor and submission of the report online. At present, all patient safety events are reported in the RADISH. All members of the healthcare team are encouraged to report all medical errors or any hazardous condition of patient safety concern to the QUIPS Office using the Online Patient Safety Event Report Form accessible through the URL link available in the RADISH website. This policy provides a system of identifying, reporting, and evaluating patient safety events, including adverse events and medical errors, and unsafe and hazardous conditions that have the potential to cause patient harm.

Aside from the importance of patient safety as part of the scope of the SDG, the development of patient safety reporting headed by the QUIPS committee aligns with the pursuit of the Department of Science and Technology - Philippine Council for Health Research and Development (DOST-PCHRD) National Unified Health Research Agenda (2017-2022) for a responsive health system. The system allows the establishment of a system for documentation, review, corrective action, and feedback to enable quality and improved patient care. Given that, this study aimed to determine the characteristics of patient safety events based on the online reporting system developed at the Philippine General Hospital. The reports of patient safety events were reviewed to identify and recommend strategies to help improve patient safety and eventually provide quality health care to all. This study also specifically aimed to describe the trend of reporting since the start of the online patient safety reporting and the demographic characteristics of patients who were reported to have patient safety events, to classify the type of patient safety event reported, and to describe the preventive measures done to address the patient safety events.

MATERIALS AND METHODS

The study is a retrospective review of all electronic patient safety event reports from August 1, 2017 to April 30, 2022 at the Philippine General Hospital. The online reporting of patient safety events was started in August 2017 via Google forms while the online reporting via the RADISH, electronic medical reports in the Philippine General Hospital, was started in February 2018. All patient safety reports submitted electronically within the study period were included while those not submitted online were excluded. These online reports were collected through the RADISH database. All duplications of reports were noted and removed to ensure analyzed reports were unique data. The data was only available for access by the researchers after ethical review approval. All patient data were anonymized ensuring data privacy. The University of the Philippines Research Ethics Board exempted the protocol from ethical review with the following code UPMREB 2021-555-EX. The study is registered with the Philippine Health Research Registry ID: PHRR220104-004205.

General data of the patients and details on the event namely age, sex, date, time, service area, specific area of hospital, type of patient safety event, description of the events, and results of the event were collected and tabulated. All data were analyzed and presented in frequency and percentage. For continuous variables, these data were categorized to be presented in frequency and percentage.

A Hospital Memorandum on Patient Safety Event Reporting Policy was released last February 15, 2021 in the institution to standardize the definitions and categories of patient safety events and provide guidelines for reporting these events. Adverse events refer to an injury caused by medical management rather than a patient's underlying disease and are classified as preventable or unpreventable; which are further classified as type 1, 2 or 3 errors for preventable adverse event and type 1 or 2 for unpreventable adverse event. Type 1 preventable events are errors by attending physician, type 2 are errors by anyone else in the team while type 3 error are system failures. Unpreventable type 1 errors are common, well-known hazards of high-risk therapy while type 2 are rare but known risks or ordinary treatments. Medical errors are failure of planned action to be completed as intended or use of a wrong plan to achieve an aim. These are further subdivided under serious error, minor error, or near miss which are error that has potential to cause permanent injury, an error that does not cause harm, and an error that could have caused harm but did not reach the patient, respectively. The events were also categorized based on harm category as shown in Table 1 based on the National Coordinating Council for Medication Error Reporting and Prevention (NCC-MERP) Categories for Medication Error and Harm. Lastly, the events were categorized whether sentinel, an event resulting to death, permanent harm or severe temporary harm, or not.

Table 1. NCC-MERP Categories for Medication Error and Harm[10]

Category	Description
No Error	
A	Circumstances or events that have the capacity to cause error
Error, No Harm	
B	An error occurred, but did not reach the patient
C	An error occurred and reached the patient but did not cause harm
D	An error occurred that resulted in the need for increased patient monitoring but did not cause harm
Error, Harm	
E	An error occurred that resulted in the need for treatment or intervention and caused temporary patient harm
F	An error occurred that resulted in initial or prolonged hospitalization and caused temporary patient harm
G	An error occurred that resulted in permanent patient harm
H	An error occurred that resulted in a near-death event (e.g., anaphylaxis, cardiac arrest)
Error, Death	
I	An error occurred that resulted in patient death

Descriptive statistics were used to analyze the results.

Starting April 2021, the form for reporting on the patient safety events included additional provision for reviews of the events. These reviews were documented and summarized as well. The reviews included the interval of submission of the review from the event, initial response to the event, and preventive measures done after the occurrence of the event.

RESULTS

A total of 625 patient safety reports were reviewed from August 2017 to March 2022. Year 2021 had the most reports at 286 (45.8 %) followed by 2019 at 105, (16.8 %), 2020 at 87 (13.9 %), 2022 at 77 (12.3 %), 2018 at 41 (6.6 %) with 2017 having the least reports at 29 (4.6 %) as shown in Table 2. There was a significant increase in reports during 2022 considering the reports were only during one quarter of a year. The monthly rate of report in 2022 was 25.7 reports per month which was the highest rate while 2018 had the lowest rate at 3.4 reports per month.

On review of the total reports, there was note of duplication of reports (n=60) reducing the total unique reports to 565. Patient's sex and age were not reported at 67.6 % and 78.2%, respectively (Table 3). For those cases that sex and age were reported, majority involved females (n=97, 17%) and were 19 years old or older (n=101, 17.9%). Most of the patients were inpatient or admitted patients (n=392, 59.5%).

Patients may be admitted either in the service, non-paying or pay nursing wards. The nursing wards for the private

Table 2. Annual Patient Safety Reports, Percentage and Monthly Rates

Year	Total reports, percentage (N = 625)	Monthly rate of reports (Average reports per month)
2017	29, 4.6%	5.8
2018	41, 6.6%	3.4
2019	105, 16.8%	8.8
2020	87, 13.9%	7.3
2021	286, 45.8%	23.8
2022	77, 12.3%	25.7

Table 3. Demographics of the Patients

Demographics	Results (n, percentage) N = 565*
Sex	
Female	97, 17.2
Male	86, 15.2
Not reported	382, 67.6
Age group	
Newborn (0-28 days old)	7, 1.2
Pediatric (29 days to 18 years old)	15, 2.7
Adult (19 years and above)	101, 17.9
Not reported	442, 78.2
Type of patient	
Inpatient	392, 69.4
Outpatient	23, 4.1
Emergency	66, 11.7
Not stated	84, 14.9

**total unique reports*

patients are separate from the wards for service, non-paying patients. Service nursing wards had the highest number of reports at 273 (48.3 %) followed by the pay nursing wards with 87 noted reports (15.4 %) (Table 4). Further breakdown showed that the main emergency room had the highest number of reports in a single specific location with 41 reports (7.3 %) followed by the female medicine service nursing ward with 40 reports (7.1 %). The Cancer Institute, the main emergency room, and female medicine service nursing wards reported at least one patient safety event yearly. The other areas were noted to have years with no reports on patient safety.

Patient safety events occurred similarly across the nursing shifts [morning shift (6 am -2 pm) 33.5%, night shift (2 pm - 10 pm) 35.9% and evening shift (10 pm – 6 am) 31.7%].

The events reported were classified based on the type of patient safety event, sentinel event or not, and according to NCC-MERP categories. Majority were adverse events (282, 49.9%) which were categorized as a type 3 preventable event (n=210, 37.7%), as shown in Table 5. More than a third (n=204, 36.1%) of the events were categorized as non-adverse event or non-medical error.

The remaining 14% (n=79) were categorized under medical error, with 38 reports as serious error. Under medical errors, over 50% of near misses (11 reports) were incorrect data entry while the remaining correct entries

Table 4. Location of the Patients where the Patient Safety Events were Reported

Location	Total (n, percentage), N = 565
Service nursing ward	273, 48.3
Pay nursing ward	87, 15.4
Emergency rooms	72, 12.7
Intensive Care Units	52, 9.2
Operating rooms	28, 5.0
Ancillary	12, 2.1
Hospital premises and others	22, 3.9
Not stated	19, 3.4

Table 5. Sentinel and Harm Categories of Patient Safety Events

Category and Type	Results (n, percentage) N = 565
Type of event	
Non-Adverse event or non-medical error	204, 36.1
Adverse event	282, 49.9
Type 1 Preventable	9, 1.6
Type 2 Preventable	52, 9.2
Type 3 Preventable	210, 37.7
Type 1 Unpreventable	5, 0.9
Type 2 Unpreventable	6, 1.1
Medical error	79, 14.0
Near miss	11, 1.9
Minor error	30 5.3
Serious error	38, 6.7
Sentinel	
Sentinel	20, 3.5
Communication error	5, 0.9
Adverse drug reaction	4, 0.7
Administration error	3, 0.5
Self-harm	2, 0.4
Unavailable medical supplies or equipment	2, 0.4
Patient fall	1, 0.2
Negligence	1, 0.2
Patient monitoring	1, 0.2
Unclassifiable	1, 0.2
Non-sentinel	545, 96.5

were medication error, endorsement error or incorrect patient identification. Minor errors (30 reports) were mainly medication errors (66%) while the remaining were incorrect data entry, communication error, intravenous (IV) burn, or incorrect patient identification. Administration of incorrect dose composed 42% of serious errors, 18% were adverse drug reactions, 9% were incorrect drug administration to the patient, and remaining 32 % were communication errors, negligence, procedural errors, or incorrect label of samples.

The majority of the events reported were labeled non-sentinel at 96%. There were 20 sentinel events. Majority of the reported sentinel events were categorized as communication error such as endorsement problem or coordination (n=5, 0.9%), followed by adverse drug reaction with four events (0.7%), medication administration error with three events (0.5%), self-harm and unavailable supplies or equipment with

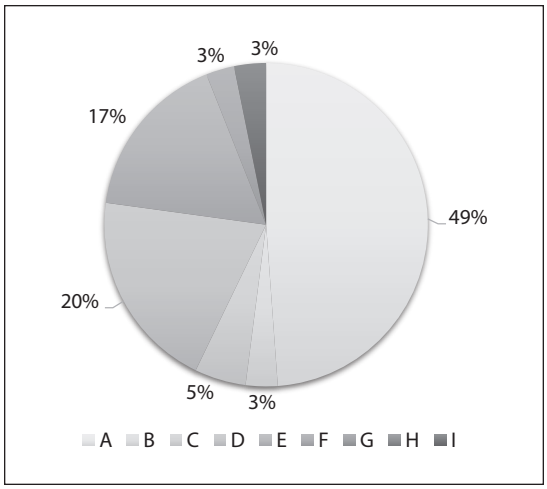

Figure 2. Harm Categories.

two events each (0.4%), and patient fall, negligence, patient monitoring, and unclassified with one event each (0.2%).

Figure 2 shows the harm categories. Majority of the events were categorized as A (n=276, 48.9%) based on harm categories followed by D (n=113, 20.0%).

Due to revisions in reporting, data on reviews, which include evaluation and preventive measures performed, were available from April 2021 to March 2022. From the 311 reports during the said period, there were 118 reviews available with majority of the reports on falls, medication or fluid error, intravenous burn, hazardous conditions, COVID-19-related reports, safety, and environmental concerns.

Figure 3 shows the total number of reports and the total number of reviews available while Table 6 shows the interval between the event and the reporting of the said event. It also shows a summary of the initial response and preventive measures reported in the reviews of the events if available.

Patient fall had the highest number of reviews submitted with 36 reviews from the total of 125 reports followed by administration error with 24 reviews and IV burn with 14 reviews.

From the 36 patient falls reported with reviews, only five events were noted to be witnessed while 31 were not witnessed. About 30% of the reviewed reports were filed on the same day of the event, while 19% were reported a day after. The rest were reported after two days from the incident with the longest at 23 days after the incident.

All types of events had at least one review except for the reports on medication dispensing and fluid error which had no available reviews.

The initial response of personnel to the adverse events were consistently patient centric. As summarized in Table 6, during any adverse event, the common initial response was to either treat the patient by giving additional medication, stopping offending medication, or referring to a physician or a subspecialty to treat the patient. Another common response but was not present in all the events was to report the incident. Only the events with medical or fluid error, needle prick and environmental hazard were the events that the personnel's initial response was to report the event.

In terms of the preventive measures, the common reports include re-orientation, reminding or reiteration of protocols and rules, and event specific actions to prevent the reoccurrence of the adverse event. Emphasis on the 10 Rights of medical administration was also noted in at least two major group of events, in medication or fluid error and adverse drug event. Some of the event specific actions include proper labelling for medication or fluid errors, pulled out malfunctioned equipment for environmental hazard, and doing tests for needle prick events.

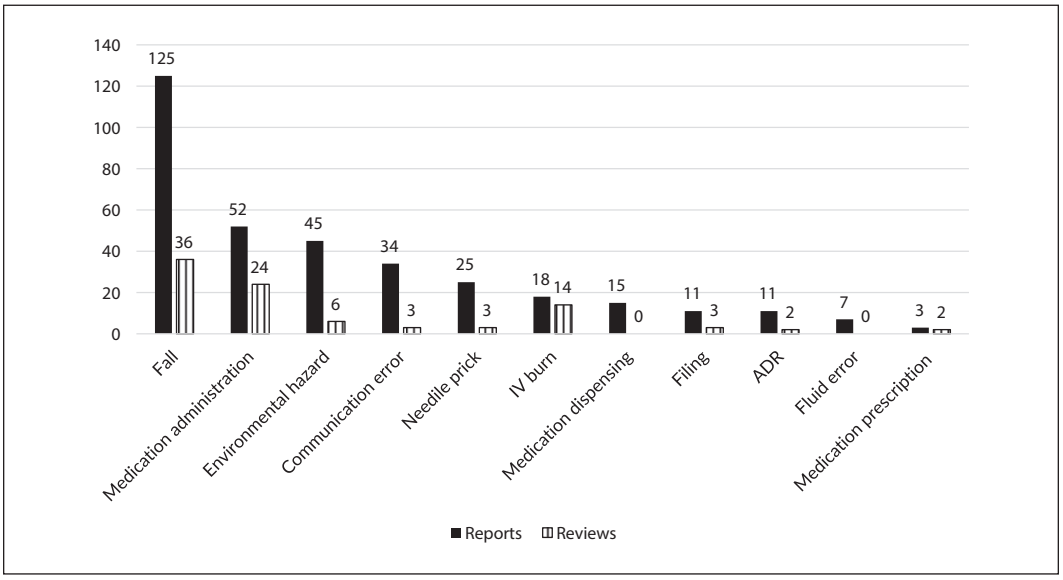

Figure 3. Reports of the cases with available reviews reported as total reports and number of review.

Table 6. Summary of Reviews of Reports on Patient Safety Events

Patient Safety Event	Interval between event and submission of review	Initial response	Preventive measures
Patient fall	<24 hours to 23 days	• Assist the patient to a secured area • Check vital signs and sensorium of patients, close monitoring • Referral to the resident in charge to evaluate need for ancillary procedures (x-ray, CT scan, and ECG) • Treat wound if any • Apply cold compress	• Re-orientation to fall prevention techniques • Reiteration of fall waiver signed during admission to patient and watcher • Identification of high-risk patients and place them near nurse's station • Placement of bell near bed of patient • Ensured siderails and bed breaks are functioning properly • Remind to be vigilant • Offered diapers and beside commode
Medication and fluid error (administration, dispensing, prescription)	<24 hours to 14 days	• Immediate stop infusion or procedure • Report incident on resident on duty • Close monitoring of vital signs • Administer first aid	• 10 Rights of medication administration (right drug, right patient, right dose, right route, time and frequency, documentation, history and assessment, drug approach and right to refuse, drug-drug interaction and evaluation, and education and information) • Highlighted significance of proper endorsement and coordination • Be vigilant in checking and counterchecking orders • Proper label and correct identification of patients • Medications stored properly in the cabinet instead of bedside • Refrain from self-manipulation of tubes by patients or watchers
IV burn	<24 hours to 12 days	• Immediate stop infusion • Remove IV • Immediate referral to resident on duty • Application of ointment (mupirocin) • Referral to burn unit • Application of hot and cold compress • Elevate extremity • Use of hydrocolloid dressing • Re-insertion of IV	• Monitoring of IV site regularly • Performance of thorough assessment prior to admission of any medications • Change of dressing regularly • Application of ointment to site • Referrals such as to Plastic surgery • Use of transparent film for dressing
Adverse drug reaction	–	• Discontinuation of infusion • Referral to resident on duty • Close monitoring of patients' vital signs • Necessary medications given to subside the reactions	• 10 Rights of medical administration (posters) • Counter checking of prepared needs • Proper labelling, • Proper placement of medications and diluent
Needle prick	<24 hours to 9 days	• Immediate report • Hand washing and first aid	• Evaluated by HICU • Test: HIV and hepatitis • Remind to stay vigilant • Be extra careful in handling and administering parenteral medications • Reviewed safety protocols
Environmental hazard	<24 hours to 2 days	• Immediate checking of the vicinity • Assess patient involvement • Check equipment • Emphasize the importance of hospital policy to follow rules for patient safety • Refer to charge nurse and to resident on duty • Report to security personnel on duty	• Regularly check the area for potentially cause harm • Pulled out malfunctioned equipment and replaced it with new one • Re- orientation of all watchers and patients regarding hospital policy • Consistent rounds of Security Personnel every shift • During handover, incoming nurses counterchecks all the concoction hooked to the patient • Made sure that the infusion and syringe pumps are properly placed
Record and filing system	–	• Edit incorrect information • Inform services of discrepant results and ask for a resubmission of new sample • Check and verify patient's details	• Discuss event with area chief nurse • Reiterate good communication skills • Always be mindful of preprocedural preparations of patients • Improve handover protocols

ECG – electrocardiogram, HICU – hospital infectious care unit, HIV – human immunodeficiency virus

DISCUSSION

Since 2021, there was note of an increased rate of reporting by health care personnel compared with the first four years of the initiation of the online form for reporting of patient safety events. Different factors may have caused this trend; one may be the initial decline in overall patient admission in 2020 due to the pandemic with a steady increase from 2021 to 2022. Another factor is the shift to online medical records system in the hospital which started in 2020. This enabled easier accessibility to the reporting link since it was part of the main page of the electronic medical records as compared to the online Google link that was used during the first few years. In the United States, use of electronic event reporting system is a common tool to collect data for adverse events.[11] Another technology-based preventive measure being developed was reported by Singh and Sittig.[12] They are developing a framework, the Health IT Safety (HITS), that creates a basis for development of health information technology-related patient safety tool that can prevent and address patient safety events. According to the Agency for Healthcare Research and Quality, there are four key components of an effective event reporting system: a supportive environment for event reporting that protects privacy of staff, reports should be received from a broad range of personnel, summaries of events must be disseminated in a timely fashion, and a structured mechanism must be in place for reviewing reports and developing action plans.[4]

Generally, reporting the incidents, whether or not a true adverse event, is encouraged in any healthcare system. However, Macrae suggests a more specific criteria should be made to only report the important incidents and focus more on finding solutions than filing more reports.[13] He suggests that a large volume of reports may suggest a lack of development in terms of preventing recurrence of said adverse event. Due to the retrospective nature of the data collection, recall and observer bias is usually observed especially in patient safety events wherein the data collected relies on the memory of the reporter. This may result to having more cases of not true adverse events reported. However, the nature of the patient safety events and the practice of reporting in itself whether it is a true event or not is essential in patient safety. The present study is limited to the data collected by voluntary reporting.

Contrary to the study done by Luo, this paper showed higher prevalence of reports among adults than children.[14] In a systematic review and meta-analysis done by Panagioti et al., there was also no statistically significant increase risk of harm or patient safety event among vulnerable groups such as children.[15] Theoretically children and elderly individuals are thought to have higher risk of adverse event. There was also no statistically significant trend on sex in terms of risk of patient safety event. There are reports on increased risk of patient safety event among low to middle-income countries such as the Philippines and lower risk of incurring harm from patient safety event among advanced hospital specialties.[6,15] Preventable adverse events like adverse drug reactions were observed to be higher among admitted patients compared with outpatients.[16] Knowledge of those with increased risk of harm is essential in improving patient safety for more efficient allocation of resources and actions to decrease patient safety events.

Generally, it is expected that bulk of the patient safety event will happen during the period where manpower is the least, overworked or at night when the body is physiologically less alert and tired. A study by Jarrar et al. on the effect of shift length and perceived quality and safety of care for patients showed a statistically significant effect of perceived quality and patient safety with the length of shift among nurses in Malaysia.[17] However, there was no specific trend observed in the results of this study similar to the effect seen in the study of Jarrar except for the highest incidence occurring during the middle of the shifts for the evening shift (6:00 PM) and in early morning (1:00 AM). Vigilance indeed must be round the clock.

Liukka et al. outlined the different responses to adverse events in terms of types of victims based on the three victims of an event: the patient and their family, the healthcare professionals, and the institution or organizations.[18] Organizational actions are needed to provide changes that will enable prevention of adverse events which may entail additional training, communication, and formulation of strategies. Healthcare workers will need support systems and services, coping strategies, lessons from the event, and possible changes, if need be. Lastly, the care for patient includes disclosure similar to recommendation by Wu et al.[19] This last response to the event, however, was not seen as part of the initial response nor the preventive measures done. This is an important aspect of patient safety as there can also be legal implications that can affect the healthcare worker and institution.

It is very important to always take into account the setting of the institution in terms of strategies to improve patient safety. In the report of Johnston et al. on their lessons from the Duke Global Health Patient Safety Fellowship, contextualization of training for improvement of patient safety should be appropriate to the local needs and resources.[20] Similar with a systematic review done by Harrison et al., lack of data collection system was among the challenges that they encountered which the system reported in this paper should be able to address.[21] Integration of the patient safety culture into the health care system is the recommendation of Kang et al. based on their systematic review of patient safety culture among Southeast Asian countries to improve patient safety practice in the region.[22]

This study enabled the characterization and description of the patient safety events and the preventive response of personnel. However, further analysis may also be done on the data on hand. Most literature available provides descriptive analytics to such data. Gillespie and Reader developed the Healthcare Complaints Analysis Tool which can reveal

insights on unsafe and difficult-to-monitor areas of health care provision based on the patient safety event reports of the institution.[23] This can be a future area of study.

CONCLUSION

The introduction of the online system for reporting patient safety events enabled the documentation of patient safety events in a tertiary hospital in the Philippines. The establishment of a committee on patient safety, QUIPS, enabled the continued promotion of patient safety in the institution. Majority of patient safety reports are classified as preventable and result from system errors. Documenting these safety events is essential in gathering data to develop protocols that enhance patient safety. Further development of online platforms and encouraging the reporting of safety events are key to collecting more data. Using other tools is recommended to enable a more qualitative analysis of the available data. Collaboration across various sectors within the healthcare system is also crucial for promoting patient safety nationwide.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

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