

Profile of health incidents notifications at a university hospital

Perfil das notificações de incidentes em saúde em um hospital universitário

Perfil de notificaciones de incidentes de salud en un hospital universitario

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ABSTRACT

Objective: to profile health incident notifications at a university hospital in Rio de Janeiro. **Method:** in this quantitative, retrospective, descriptive study at a university hospital in Rio de Janeiro, data were collected from health incident notification sheets for October 2015 to May 2018. **Results:** 534 health incident notifications were examined. Nurses were the main notifiers, and there was a significant prevalence of technical complaints, predominantly technovigilance-related. Incidents involving damage were concentrated more in inpatient sectors. **Conclusion:** the profile of notifications made it possible to highlight weaknesses in the system that suggest the existence of underreporting in the institution, which is an obstacle to understanding the occurrences.

Descriptors: Patient Safety; Safety Management; Quality of Health Care; Notification.

RESUMO

Objetivo: delinear o perfil das notificações de incidentes em saúde em um hospital universitário do Rio de Janeiro. **Método:** estudo retrospectivo e descritivo com abordagem quantitativa, realizado em um hospital universitário do Rio de Janeiro. Os dados foram coletados das fichas de notificação de incidentes em saúde referente ao período de outubro de 2015 a maio de 2018. **Resultados:** no total, foram analisadas 534 notificações de incidentes em saúde. Os enfermeiros foram os principais notificadores, com um predomínio expressivo das queixas técnicas, destacando a prevalência da tecnovigilância. Os incidentes com dano ocorreram com maior concentração nos setores de internação. **Conclusão:** a partir do perfil das notificações foi possível evidenciar fragilidades no sistema que sugerem a existência da subnotificação na instituição, sendo um entrave para o entendimento das ocorrências.

Descritores: Segurança do Paciente; Gestão da Segurança; Qualidade da Assistência à Saúde; Notificação.

RESUMEN

Objetivo: perfilar las notificaciones de incidentes de salud en un hospital universitario de Río de Janeiro. **Método:** en este estudio cuantitativo, retrospectivo y descriptivo en un hospital universitario de Río de Janeiro, se recolectaron datos de las hojas de notificación de incidentes de salud de octubre de 2015 a mayo de 2018. **Resultados:** se examinaron 534 notificaciones de incidentes de salud. Las enfermeras fueron los principales notificadores y hubo una prevalencia significativa de quejas técnicas, predominantemente relacionadas con la tecnovigilancia. Los incidentes con daños se concentraron más en los sectores de hospitalización. **Conclusión:** el perfil de notificaciones permitió resaltar debilidades en el sistema que sugieren la existencia de subregistro en la institución, lo cual es un obstáculo para el entendimiento de las ocurrencias.

Descriptores: Seguridad del Paciente; Administración de la Seguridad; Calidad de la Atención de Salud; Notificación.

INTRODUCTION

The advances that have occurred in health care and in hospitals have made the health scenario more complex by adding several elements, technological advances and population aging, thus generating increased demands and costs. These changes have brought new challenges to the sector in view of the greater risk and vulnerability potential of such systems¹.

In such scenario, the worldwide movement for patient safety has arisen from a great concern in different health systems around the world about the extent of the occurrence of harmful events related to care provision in hospitals, which have an impact on the lives of individuals and the society².

In this context, harmful events are referred to as adverse events (AE), and they are related to the onset of a health problem arising from care provision, and not due to a primary or underlying disease, thus causing an unintentional injury that results in temporary or permanent disability, extension of the length of stay or even death due to the care provided³.

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Given the magnitude of these events, research began to be conducted on the international and national scene. A scientific investigation that included 58 hospitals located in different developing countries (Argentina, Colombia, Costa Rica, Mexico and Peru) found a prevalence of 10.5% of adverse events among the hospitalized patients investigated, 60% of which were considered preventable, resulting in physical impairment and even death⁴.

In Brazil, a study carried out in a teaching hospital showed that adverse events directly affected the length of hospitalization and mortality⁵. Such events have a significant impact on global morbidity and mortality. The avoidability of adverse events is increasingly evident, with a reduction of damage reaching 70.2% through prevention with comprehensive and systemic approaches⁶.

Another study in Brazilian hospitals showed a 7.6% incidence rate of adverse events, considering 67% of them to be preventable⁷ and demonstrating that their occurrence was intrinsically related to the risks existing in the health care environment. The avoidability of such events is increasingly evident through risk prevention by comprehensive and systemic strategies⁸.

In view of this scenario, the discussion on care provision quality is intrinsically related to the patient safety dimension with a focus on preventing damage caused to health service users. Patient safety is understood to reduce the risk of unnecessary harm associated with health care to an acceptable minimum⁹.

Such damage has become a growing object of interest for researchers. Understanding when, how and why these problems occur, as well as their consequences, has become a fundamental task with ways to improve care quality¹. The emphasis given to adverse events has led to the development of strategies and proposals in order to reduce harm to patients with actions focused on the risks existing in health care institutions⁹.

Preventing adverse events requires mapping the existing risks in the health care scenario, identifying all conditions and situations that favor its vulnerability. Reduction in the occurrence of harmful incidents is related to actions to monitor and mitigate all types of health care incidents¹⁰.

According to the International Classification for Patient Safety (ICPS), a Health Care Incident can be defined as a circumstance or event that could have or resulted in unnecessary harm to the patient, that is, a situation that could have been avoided. When damage occurs, it is called an adverse event⁹.

In this perspective, the health incident voluntary notification system has become one of the pillars in the management of care safety, capturing information regarding the institution's weaknesses, which helps in recognizing the situational panorama¹⁰. This system has emerged with the purpose of strengthening patient safety with a focus on organizational learning in the face of events, prioritizing a systemic analysis of incidents, minimizing damage and providing an understanding of risk situations¹.

An efficient notification system is capable of capturing events of different natures and severities. Despite the attempts to prevent adverse events, all incidents are considered essential for mapping risk situations, even those that have not reached the patient, and there should be a stimulus to their reporting¹¹.

However, underreporting is still a barrier to be overcome by these systems, since it underestimates the actual number of incidents in the institution, thus preventing the identification of the real scenario, which may be related to the punitive approach to errors, lack of knowledge about the theme or about how to notify, work overload, among others¹².

The search for safe care provision must be a commitment of all those who work in health organizations. Therefore, a culture of organizational safety that encourages voluntary incident reporting based on transparency, mutual trust and learning that enables interventions is essential¹.

Health incident notification is extremely important for patient safety and for improving the quality of health services. Such notification makes it possible to recognize the organizational context prior to any planning and thus identify its deficiencies, facilitating the development of an intervention program.

Therefore, this study aims to outline the profile of health incident notifications occurring at a university hospital in Rio de Janeiro.

METHOD

This is a retrospective and descriptive study with a quantitative approach. It was conducted at a university hospital located in the city of Rio de Janeiro, and data were collected by the main author during the phase of analysis of all the health incident voluntary notification forms sent to the Patient Safety Center (PSC) from October 2015 to May 2018. During the study period, the notifications were filed using a single printed form, with freely filled open fields which were

distributed in the different hospital sectors. The forms were placed into in an urn located in the nursing supervision office or directly returned to PSC.

The variables evaluated were: year of notification, category of the notifying professional, sector of occurrence, reason for notification and incident group (technical complaint, risk circumstance, near-miss, non-damaging incident or an adverse event) and area of incident occurrence (pharmacovigilance, technovigilance, hemovigilance, sanitizing, nutrivigilance, clinical risk/care provision and non-clinical incidents).

The information collected was organized on a database using the Microsoft® Excel software. Descriptive statistical analysis was performed and data characterization was presented in the form of observed frequency and percentage.

The study was approved by the university hospital's Research Ethics according to consubstantiated Report no. 2.854.111, thus complying with all the principles and ethical issues regulated by the National Research Ethics Commission (CONEP) and Resolution no. 466/12.

RESULTS

In total, 534 health incident notifications were filed and analyzed for the period studied. Year 2017 had the highest concentration (56.93%) of incident reports (Table 1), and it should be noted that the period analyzed for year 2015 was only the last quarter, since the use of the notification system had not begun before then. Likewise, only the first five months of 2018 were analyzed and measured. When comparing years 2016 and 2017, a 189% increase was found from one year to the next, initially showing a tendency to increase in the number of reports. When the monthly average corresponding to each year was evaluated, there was a variation from 3.6 to 25.3 notifications/month. The highest average was found for year 2017, thus showing an increase in the number of notifications between the years up to that period. However, in 2018, there was a reduction in the number of reports, with a monthly average of 11.6, which was lower than that for year 2016 (13.4).

Among health professionals, the professional category that most significantly notified was that of nurses (72.47%). The medical professional was one of the categories with the lowest participation (0.56%).

TABLE 1: Distribution of notifications per year and professional category at a university hospital (n= 534), Rio de Janeiro, Brazil, 2018.

		n	f(%)
Year	2015	11	2.06
	2016	161	30.15
	2017	304	56.93
	2018	58	10.86
Professional	Administration staff	16	3.00
	Nursing Assistant	1	0.19
	Nurse	387	72.47
	Physiotherapist	15	2.81
	Surgical Technologist	1	0.19
	Physician	3	0.56
	Nursing technician	19	3.56
	Not informed	89	16.67

Technical complaints (Table 2) accounted for the largest number of reports, representing 70.97% of the sample, followed by the notifiable circumstances (22.10%).

Technovigilance was the main coverage area of the reports, corresponding to 74.16% of the notifications. This is justified by the fact that the main reason for reports (73.41%) was related to equipment (57.68%) and health care articles (15.73%).

In this study, the incidents classified as damaging or non-damaging were all those whose information contained in the notification form was sufficient to state that the incident reached the patient, and whether damage was caused or not. The reported incidents that affected a patient, but did not contain minimum information that enabled us to identify any damage were classified as a non-damaging event. Because not all notifications provide this type of clear and defined

information, such events may have been undersized in the analysis. In this study, it was also not possible to classify the degree of damage in adverse events, since there was no reported information on outcomes for patients.

TABLE 2: Characterization of health incident notifications at a university hospital, Rio de Janeiro, Brazil, 2018.

		n	f(%)
Incident group	Notifiable circumstance	118	22.10
	Damaging Event	20	3.75
	Sentinel Event	1	0.19
	Inconsistent	3	0.56
	Technical complaint	379	70.97
	Non-damaging Event	13	2.43
Coverage area	Pharmacovigilance	16	3.00
	Nutrivigilance	1	0.19
	Clinical risk	21	3.93
	Non-clinical risk	85	15.92
	Occupational risk	6	1.12
	Sanitizing	4	0.75
	Nutritional therapy	1	0.19
Reason	Drug chain	17	3.18
	Medical-hospital article	84	15.73
	Equipment	308	57.68
	Structure/resources	91	17.04
	Process/protocol	23	4.30
	Biological risk	6	1.12
	Sanitizing	4	0.75
	Nutritional therapy	1	0.19

Non-clinical risks, which are those related to infrastructure factors, appear as the second most prevalent area of activity among the notifications (15.92%), followed by clinical risk (3.93%). Pharmacovigilance comprises only 3% of the total reports.

The percentage of incidents related to the care provision process (clinical risk) and pharmacovigilance was very low.

Regarding the work shift, 76.78% of the incidents occurred in the morning and 15.92% in the afternoon. The daytime period (7 a.m. to 7 p.m.) had the highest concentration of events. The night period accounts for only 3.56%.

Adverse events occurred with greater prevalence in the hospitalization sectors (84.21%). In these sectors (Internal medicine, surgical and intensive care centers), the prevalence was similar (26.31%).

DISCUSSION

The initial tendency to a progressive increase in voluntary notifications observed in the study was related to the beginning of PSC implantation in the institution, starting in 2015. The implantation process took place gradually, both in managerial and structural aspects, obtaining a greater reach in the development of more solid safety actions, as well as team composition, in 2016. This context allowed for better planning and development of strategies that encouraged notification and patient safety in that period, promoting greater adherence to the notification system by professionals.

However, at the end of 2017, a process of organizational change with a reduction in educational activities and awareness campaigns in favor of the safety and notification culture began, which reduced incident reporting.

A periodic performance of educational activities is essential to encourage incident reporting, since this type of strategy, despite being a great ally in knowledge dissemination, has limited durability¹².

A study identified a 53.89% increase in the number of voluntary incident reports after educational interventions¹³.

Considering the study period, 32 months, the number of reported incidents was small when compared to that in other studies, mainly because it is a large hospital, with a level of care provision ranging from medium to high complexity.

In 2015, a study identified a total of 2,396 health incidents in 34 medical records analyzed from a single clinic¹³. Another investigation revealed a total of 2,495 incidents in a two-year period, also in a large teaching hospital.¹⁵

Therefore, the underreporting of incidents may be the reason for this limitation, justified by the fear of reporting, lack of knowledge on the subject and the centralization of notifications in groups of professionals¹⁶.

The predominance of nurses as notifiers in this study is corroborated by others that also found similar data; one attributed 73% of the notification records to the nursing team¹², and another identified that only 0.9% of the notifications were filed by physicians, thus showing that the lack of participation by these professionals favors underreporting¹⁷.

In another hospital, nurses also led notifications of incidents related to pharmacovigilance when compared to physicians, and the possible justification for this situation was insecurity in reporting, fear and lack of awareness on the part of the medical team¹⁸.

The predominance of technical complaints was related to the fact that professionals feel safer in reporting this type of notification²⁰. In addition, a technical complaint is related to health products and unrelated to professionals, thus it does not produce the feeling of fear or guilt when it is notified.

The prevalence of technical complaints (81%) could also be identified in another study. However, that investigation focused on notifications of events related to pharmacovigilance, hemovigilance and technovigilance. This situation may justify the predominance of technical complaints in such reports¹⁹.

The distinction of technovigilance in the analyzed notifications is related to problems in health products used as support in care provision. The low technical quality of hospital equipment and supplies was shown by some studies as one of the main reasons for notifications in technovigilance, thus indicating the need for a review of inspection policies and actions by competent agencies, as well as a review of the mode of acquisition of such items by institutions, considering prerequisites that include quality²¹.

The creation of the Commission for Standardization of Materials and Products is a strategy used by several institutions whose purpose is to create and implement an institutional policy that values the quality of the materials purchased, one of its actions being the pre-qualification of medical and hospital materials, ensuring product quality and, above all, care provision quality²². The institution under study does not have such a commission, which may favor the acquisition of products of poor-quality and unsatisfactory products that compromise patients' and professionals' safety.

The lack of information that would allow a better incident classification, as well as the outcomes when an incident reached the patient, was an aspect identified in the analyzed files.

Such reality was also identified in another investigation carried out in a public university hospital showing that 23.5% of the notifications did not contain information regarding the outcomes in relation to patients, thus not allowing the description of a reliable result for that factor. One of the reasons attributed to information omission would be fear of punishment of the notifying professional by the institution²³.

The information found in the notifications is not always adequate or practical, often not making it possible to identify the outcome of the event for the patient, and this circumstance may be related to the institution's safety culture. The greater the maturity of such culture, the better the quality of the data reported²⁴.

In this study, the unavailability of inputs and inadequate infrastructure, especially with regard to building maintenance, appear as the main reason for notifications characterized as non-clinical risks.

Non-clinical risks are those originating from procedures and practices of activities related to the maintenance of the physical structure and care provision support, comprising risks related to the environment¹.

There are numerous risks in the hospital environment that can compromise patient safety, causing damage and increasing costs. Therefore, the identification and assessment of non-clinical risk and the development of action proposals must be valued¹.

Regarding the incidents attributed to the care provision process (clinical risk) and pharmacovigilance, there were few reports identified when compared to other studies in similar institutions. A much more expressive number (87%) was identified by Bica in the percentage of events related to health care provision²³.

Incidents related to pharmacovigilance appeared as the most prevalent in another scenario, being classified as the ones that caused the most damage²⁵. Flaws in the medication process are worrisome and appear as the second leading cause of the total number of incidents (16.7%)²⁶.

The small number of notifications related to care provision processes and pharmacovigilance may indicate underreporting of such events in the institution studied. There is evidence that the professionals' lack of knowledge regarding medication errors favors underreporting²⁷.

Underreporting makes it difficult for the hospital to improve knowledge regarding the safety of medicines and other products, as well as of care-provision and organizational processes²⁴.

The predominance of incidents in the morning and in the afternoon is information that also appears in the National Health Surveillance System (NHSS), showing that there is also a predominance of incidents during the day (58.9%), while the night shift corresponds to only 21.5%²⁸.

Other studies evaluating the shift of incident occurrence also reported that, in the morning and afternoon shifts, there were a larger number of notifications (73.9%), which can be justified by the larger number of procedures and tests performed in those periods, especially in the morning²³.

The higher concentration of adverse events in the hospitalization sectors was similar to the data from another study that identified 64.8% of notifications coming from hospitalization units, due to the greater number of patients in those sectors²⁶.

The study showed limitations related to the voluntary incident notification system due to the low quality of the data records.

CONCLUSION

Through the study it was possible to outline the profile of the notifications made in the institution by identifying the predominance of technical complaints with prevalence in technovigilance, thus signaling the existence of risks in the studied scenario. However, the small number of reported incidents affecting patients demonstrates weakness in the system and indicates the occurrence of underreporting in the institution.

thus, it is highlighted that encouraging voluntary reporting of health incidents, far from a punitive culture, driven by learning and the commitment to not causing damage, is essential for the success of a notification system as it makes it possible to learn about and understand the profile of incidents, thus supporting the development of the evaluation process and continuous improvement of quality in health care and patient safety in the institution.

Therefore, the discussion presented allows for reflection on the occurrence of incidents and the notification process, awakening us to the relevance of this topic and supporting changes that will support the improvement of quality and safety in care provision.

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