

# Identifying patient risks during hospitalization

## Identificando os riscos do paciente hospitalizado

Lucélia Ferreira Lima<sup>1</sup>, Lucila Coca Leventhal<sup>2</sup>, Maria da Piedade do Pilar Fernandes<sup>3</sup>

### ABSTRACT

**Objective:** To identify the risks reported at a public institution and to know the main patient risks from the nursing staff point of view.

**Methods:** A retrospective, descriptive and exploratory study. The survey was developed at a hospital in the city of Taboão da Serra, São Paulo, Brazil. The study included all nurses working in care areas who agreed to participate in the study. At the same time, sentinel events occurring in the period from July 2006 to July 2007 were identified.

**Results:** There were 440 sentinel events reported, and the main risks included patient falls, medication errors and pressure ulcers. Sixty-five nurses were interviewed. They also reported patient falls, medication errors and pressure ulcers as the main risks. **Conclusions:** Risk assessment and implementation of effective preventive actions are necessary to ensure patient's safety. Involvement of a multidisciplinary team is one of the steps for a successful process.

**Keywords:** Sentinel surveillance; Risk management; Medication errors; Pressure ulcer

### RESUMO

**Objetivo:** Identificar os riscos notificados em uma instituição pública e conhecer os principais riscos dos pacientes na opinião dos enfermeiros. **Métodos:** Estudo retrospectivo, descritivo e exploratório. A pesquisa foi desenvolvida em um hospital do município de Taboão da Serra, em São Paulo. Fizeram parte deste estudo todos os enfermeiros atuantes nas áreas assistenciais que consentiram participar da pesquisa. Concomitantemente, foram levantados os registros de eventos sentinela ocorridos no período de Julho de 2006 a Julho de 2007. **Resultados:** Foram notificados 440 eventos sentinela. Os principais riscos foram: queda do paciente, erro de medicação e úlcera de pressão. Foram entrevistados 65 enfermeiros, que relataram também a queda de paciente, erros de medicação e úlcera de pressão como principais riscos. **Conclusões:** As avaliações dos riscos e a implementação de ações preventivas eficazes são indispensáveis para garantir a segurança do paciente.

O envolvimento da equipe multidisciplinar é um dos passos para o sucesso desse processo.

**Descritores:** Vigilância de evento sentinela; Controle de risco; Erros de medicação; Úlcera de pressão

### INTRODUCTION

Healthcare professionals are increasingly worried about patients' safety at hospital setting. As we experience technological development, safety requirements and controls also increase at hospitals<sup>(1)</sup>.

In the 1990's, there were sensationalist approaches in the media about medical errors and more legal claims, both in the number of litigations and in the financial amount of indemnities. Patients complained and demanded more, thus forcing healthcare providers to change behaviors<sup>(2)</sup>. Several conditions facilitate the occurrence of errors at hospital setting. There is an interdependence among professionals involved and each one believes the others do their share – an example is medication error: the pharmacist believes the physician has prescribed correctly; the person who prepares the medication believes the pharmacist has already screened; the nursing staff administering the drug does not double-check the information, since they believe that the person who prepared the drug has confirmed all items (correct drug, dose, time and patient), until the moment the error is detected and it is inevitable to hide it. When it happens, a lot of pressure is made to discover the culprit – normally one or more individuals who represent a group. Because of the fast need of resolution, finding the cause and a culprit is much easier and faster than restructuring the processes<sup>(3-4)</sup>.

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<sup>1</sup> Nurse; Specialist in Healthcare Service Management at the Faculdade de Enfermagem of Hospital Israelita Albert Einstein – HIAE, São Paulo (SP), Brazil; Care Supervisor at the Adult and Pediatric Intensive Care Unit at Hospital Municipal Dr. Moysés Deutsch – São Paulo (SP), Brazil.

<sup>2</sup> Post-graduate student at the Graduate Nursing Course at the Escola de Enfermagem of Universidade de São Paulo – USP, São Paulo (SP), Brazil; Professor at the Maternal and Child Department of the Escola de Enfermagem of Hospital Israelita Albert Einstein – HIAE, São Paulo (SP), Brazil.

<sup>3</sup> Nurse; Specialist in Healthcare Service Management – São Paulo (SP), Brazil.

Corresponding author: Lucélia Ferreira Lima – Rua Nicola Florentino, 121 – Jardim Gysmar – CEP 05859-140 – São Paulo (SP), Brasil - Tel.: 11 5812-8635 – e-mail: nursinlu@hotmail.com

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Professionals link failures in their activities to shame, punishments, and loss of prestige. The vast majority of adverse events can be avoided and, in many instances, they result from deficiencies in the system rather than exclusively from human failures<sup>(5)</sup>.

In regard to the events associated with medical equipment, failures in device performance include those, such as the non-triggering of alarms in monitoring and life support equipment, errors in infusion pumps related to leakage, electric shock in patients or healthcare professionals, among others<sup>(1)</sup>.

Reporting of errors is a practice adopted in several countries aiming at decreasing those errors. It is known that the reported errors do not represent everything that has happened in the practice due to underreporting. The purpose of error reporting is to find the causes, i.e., what led to the occurrence of an error and the failures involved in the process. After identification of the causes, action and correction strategies of the processes involved are implemented to prevent the same failures from happening again and the occurrence of similar errors affecting other patients. For this reason, reporting becomes an ally to the hospital practice, since it identifies the failures in the processes and prevents new errors from happening<sup>(6)</sup>.

It is important to analyze the iatrogenic occurrences, not for finding culprits, but rather to find the gaps within the processes, so that they are revised and analyzed to the benefit of the patient and all the team involved<sup>(7)</sup>.

We should prevent the risks by identifying them, analyzing their origin and proposing preventive actions. Risk analysis has the purpose of estimating the factors that interfere with safety and potential damage that the risks may cause to the individual; such evaluations serve as subsidy to control and prevention of this exposure<sup>(8)</sup>. Risk management is the whole process of identification, analysis and control<sup>(9)</sup>.

The control and effectiveness of risk management is only possible if there is commitment from all parties involved, such as manufacturers, hospital administrators, clinical engineers and all healthcare team to meet the established requirements<sup>(1)</sup>.

Healthcare quality programs aim to promote the environment's quality, the risk control and compliance of standards in the perspective of improving institutional development, with a focus on the individual's safety<sup>(5,9)</sup>.

Another approach to assessing risks relates to the methodology of risk mapping, which is a fast diagnosis consisting on identification of risks, sources and preventive strategies to reduce the reported or observed risks<sup>(10)</sup>.

In Brazil, there are still few studies about sentinel events and risk management<sup>(11)</sup>.

In 2001, the National Health Surveillance Agency (ANVISA) created a project of a sentinel hospital to approach this problem. All sentinel hospitals send reports providing data about adverse events that occurred. After that, an analysis is carried out trying to build a network of reference hospitals that will provide data on adverse events<sup>(11)</sup>.

Given the importance of risk management in all hospital services, our study has the purpose of identifying the reported risks, which is the first stage of risk management. In addition, to know the main risks from the nurse's point of view.

## OBJECTIVE

To identify the risks reported at the hospital studied and to know the main risks in the nurses' opinions.

## METHODS

A retrospective, descriptive, exploratory study developed at a large teaching hospital (282 beds), which assists high complex cases, managed by an Organização Social de Saúde and the Associação Paulista de Desenvolvimento para Medicina (SPDM/UNIFESP), located in Taboão da Serra, São Paulo, Brazil (Hospital Geral de Pirajussara). The institution has 80 nurses; in that, ten are administrative nurses and 70 assistance nurses.

Data collection was carried out by two authors. The records of sentinel events occurring from July 2006 until July 2007 were assessed and used to fill out a form elaborated by the authors. Simultaneously, another nurse submitted a questionnaire to all nurses who agreed to participate in the survey. This questionnaire was composed of two parts, one related to personal identification and another one with an open question about their opinion on the main risks to patients.

The data were collected after approval by the Research Ethics Committee (FR162929) of the Hospital Israelita Albert Einstein (HIAE).

Data was quantitatively assessed by means of descriptive statistical techniques and the results were presented in tables.

## RESULTS

During the study period, 440 sentinel events with patients at the hospital were reported.

The patient risks reported at the hospital studied are shown in Table 1; falls (122; 27.7%), pressure ulcers (104; 23.6%), and medication errors (75; 17.0%) were the most frequent in all healthcare units.

**Table 1.** Risks reported at a public hospital, São Paulo, 2008

Risks	Number	%
Fall	122	27.7
Pressure ulcer	104	23.6
Medication errors	75	17.0
Abrasion	56	12.7
Equipment failure	45	10.2
Burns	19	4.3
Hematoma	17	3.8
Blood products	3	0.7
Total	441	100

Fall from bed was the main type of fall (84 events) reported, with a high notification in the surgical clinic due to disproportional bars, which were too small compared to the size of bed; the other ones included falls from own height, in the bathroom, among others.

As to the medication errors, 28 events were related to delayed administration of drugs; other errors included changing patient's drugs, illegible prescription, correct medication in wrong patient, drug contamination, dose errors, among others.

Abrasion was more often notified by the Neonatal Intensive Care Unit (NICU) due to removal of the fixation of orotracheal tube.

Equipment failure included of ventilator and monitor alarms, incomplete circuits, among others. This type of error was more significant in the intensive care units.

Among burns, 14 cases happened in the operating room and were caused by the plate and/or electric cautery, and four burns were caused by the oxymetry sensor.

Errors related to blood products were, for example, a wrong patient receiving a bag of packed red blood cells and a patient receiving a wrong bag of blood products.

In the second part of the survey, 65 nurses were interviewed accounting to 92.8% of nurses of the institution studied; five nurses did not participate on the survey because they were on vacation and/or on leave. The age of participants varied between 29 and 43 years. Most nurses studied were female and had between four and nine years of work experience.

The nurses were asked their opinion on the main sentinel events at the hospital. The main risks according to the nurses' opinion are shown in Table 2, and include patient's fall (56; 17.2%), followed by medication errors (55; 16.9%) and pressure ulcers.

## DISCUSSION

In this study, it should be emphasized that some sentinel events are present in the daily life of nurses; however,

**Table 2.** Risks mentioned by assistance nurses at a public hospital, São Paulo, 2008

Events	Number	%
Fall	56	18.4
Medication errors	55	18.1
Pressure ulcer	34	11.2
Nosocomial infection	30	9.9
Suicide	29	9.5
Patient identification	20	6.6
Fleeing	17	5.6
Equipment failure	15	4.9
Barotrauma	15	4.9
Blood products	10	3.3
Surgical marking	9	3.0
Burns	7	2.3
Contaminated surgical material	6	2.0
Loss of pathological examination	1	0.3
Total	304	100

they were little or never reported, such as patient fleeing; barotraumas; suicide; surgical marking error, e.g., the right kidney should be operated but the left one is mistakenly operated on; contaminated surgical instruments because the worker at the material management unit did not notice that the sterilization machine had not completed the process and the instrument was removed while still non-sterilized, among others.

In the last decade, several authors have been trying to assess the iatrogenic occurrences in the daily routine of healthcare assistance, by analyzing the situations, exploring each risk, such as falls, medication errors, ventilation assistance, among others, and trying to approach the multiprofessional team and not exclusively the nursing staff, assigning to each professional the responsibility of the process of caring, thus improving quality in patient's safety<sup>(4)</sup>.

In the process of training, healthcare professionals are not prepared to assess and prevent errors; the opposite of caring for, the "neglect", which leads to a risk situation due to an attitude or decision, and can be triggered by a series of psychological, physical and cultural factors<sup>(3)</sup>.

Some studies point to surprising and worrisome data about the number of deaths related to the inappropriate use of medications in the United States, achieving up to 7,000 deaths/year<sup>(12)</sup>.

Working on medication error prevention is of extreme importance for healthcare teams; the work is better when there is involvement of all professionals who somehow can contribute to decreasing the recurrence of such errors<sup>(3)</sup>.

The critical status increases when transposing such events to the ICU, which are centered on the assistance of high risk patients, with borderline abnormal/normal

clinical conditions, in whom any event becomes not only undesirable but also extremely hazardous to the patient and the institution<sup>(4)</sup>.

In the United States, a hospital reported significant improvement in the performance of the multidisciplinary staff after creation of an organizational “safety culture”, taking into account relevant features, such as awareness that errors are not allowed, ability to talk when there is some concern on the professional’s side, personal acknowledgment of limits, risk management and need of team work to obtain better results, use of safety systems checking how the process can lead to errors, not focusing the responsibility on the individual but rather bringing the responsibility to the hospital<sup>(5)</sup>.

The American Society of Health-System Pharmacist (ASHP) has developed a taxonomy that is used as the basis of software allowing to share information among the institutions in the American territory, where the error in one institution is an alertness sign to another organization, and, by doing so, they enhance preventive actions<sup>(13)</sup>.

At the hospital surveyed, in practice, we observed that some measures were implemented including the early assessment of risk for falls, which started being carried out by nurses. By means of a questionnaire, the potential risks (fall, phlebitis, pressure ulcers) of each patient are screened and, after that, patients are identified with a colored bracelet that defines the risk severity to which they are exposed. Other measures, such replacing bathroom floors by anti-slippery floors, have already been implemented.

Patient suicide has reached the second position in the 2006 statistics in the United States. At the institution studied, the event occurred with a collaborator in the hospital, with the use of unknown doses of opioids. After this event, despite not being formally reported, some measures of access to controlled opioid drugs were implemented. We believe that suicide rates in Brazil, either of patients or healthcare professionals, may be higher than we imagine and it is seldom reported. Bringing awareness to this issue would help searching solutions. We, healthcare professionals, are always informed about these events in an informal manner.

In practice, we observe that medication errors are underreported; even in some institutions where the identification of the individual involved is not necessary, several people prefer not to notify those events<sup>(13)</sup>. Studies show that only 25% of errors are reported<sup>(6)</sup>.

Despite the macro awareness campaigns, considered by several authors as of low effectiveness, the culture, fear of punishments and shame about the error lead individuals to not reporting errors, which, to some extent, hinders the process restructuring and limits

the preventive measures. The process focused on the prevention of errors requires much varied data, vertical communication, decentralization for reviewing the medication process, which involves several activities with diverse flows and a multiprofessional team to support these activities<sup>(12)</sup>.

The institution studied has been working with event reporting for a short time and we believe it is very difficult to change the organizational culture about errors, and to raise the awareness about the importance of reporting.

It is necessary to elaborate preventive actions for the errors and to encourage reporting as a means of reviewing the processes and not focusing on individuals. Humans are naturally inclined to finding a culprit, one who is directly or indirectly to blame and who will consequently receive punishments. We need to change this punitive culture to a culture of continuous monitoring of the real and potential risks. It is not an easy task where we go through improvement stages until achieving a well-designed process that promotes organizational changes based on improved quality standards and safety values.

## CONCLUSIONS

The study allowed us to assess that the main risks notified were the same as the events reported by nurses: patient falls, medication errors and pressure ulcers.

Team commitment and involvement are fundamental to improve quality of care and safety of patients; these professionals are responsible for learning and updating these issues.

We suggest the risk assessment and implementation of efficient preventive actions as well as process review and involvement of a multidisciplinary team aiming at better communication. It is important to emphasize that the confidence link to the patient is affected when the patient is at risk.

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