

**PATIENT SAFETY IN LARGE-SIZED HOSPITALS: PANORAMA AND CHALLENGES\***Giordana Dutra Sartor<sup>1</sup>, Bruna Fernanda da Silva<sup>2</sup>, Anelise Viapiana Masiero<sup>3</sup>

**ABSTRACT:** The objective of the present study is to explore patient safety situations in four large-sized hospitals in Santa Catarina. The sample was composed of patient safety coordinators and professionals from the multidisciplinary team. A questionnaire developed based on the form proposed by the World Health Organization was used as a data collection instrument for evaluation of the patient safety situation. The main results point to the need for promoting a safety culture in health institutions, including: structural aspects of communication and continuing education; improvements in work processes with a focus on development of protocols and other management instruments; notification of and research into adverse events; evaluation of indicators; strengthening of partnerships; and studies in the area. In conclusion, there are safety actions under development and a movement for the implementation of the National Patient Safety Program in the state of Santa Catarina.

**DESCRIPTORS:** Patient safety; Quality of health care; Nursing.

**SEGURANÇA DO PACIENTE EM HOSPITAIS DE GRANDE PORTE: PANORAMA E DESAFIOS\***

**RESUMO:** O presente estudo tem por objetivo explorar a situação de segurança do paciente em quatro hospitais de grande porte de Santa Catarina. A amostra foi constituída pelos coordenadores de segurança do paciente e por profissionais da equipe multidisciplinar. Utilizou-se como instrumento de coleta de dados um questionário elaborado a partir de formulário proposto pela Organização Mundial de Saúde para avaliação da situação de segurança do paciente. Os principais resultados apontam para a necessidade de promover a cultura de segurança nas instituições de saúde, englobando: questões estruturais; de comunicação e educação permanente; melhorias nos processos de trabalho com ênfase em elaboração de protocolos e outros instrumentos de gestão; notificação e investigação de eventos adversos; avaliação de indicadores; fortalecimento de parcerias e pesquisas na área. Conclui-se que existem ações de segurança em desenvolvimento e um movimento para a implantação do Programa Nacional de Segurança do Paciente no Estado de Santa Catarina.

**DESCRIÇÕES:** Segurança do paciente; Qualidade da assistência a Saúde; Enfermagem.

**SEGURIDAD DEL PACIENTE EN HOSPITALES DE GRAN PORTE: PANORAMA Y DESAFÍOS**

**RESUMEN:** El presente estudio objetiva explorar la situación de seguridad del paciente en cuatro hospitales de gran porte de Santa Catarina. Muestra constituída por los coordinadores de seguridad del paciente y por profesionales del equipo multidisciplinario. Datos recolectados mediante cuestionario elaborado a partir de formulario propuesto por la Organización Mundial de la Salud para evaluación de la situación de seguridad del paciente. Los principales resultados expresan la necesidad de promover la cultura de seguridad en instituciones de salud, incluyendo: asuntos estructurales; de comunicación y educación permanente; mejoras en procesos de trabajo con énfasis en elaboración de protocolos y demás instrumentos de gestión; notificación e investigación de eventos adversos; evaluación de indicadores; fortalecimiento de alianzas e investigaciones en el área. Se concluye en que existen acciones de seguridad en desarrollo, y un movimiento para implantación del Programa Nacional de Seguridad del Paciente en el Estado de Santa Catarina.

**DESCRIPTORES:** Seguridad del Paciente; Calidad de la Atención de Salud; Enfermería.

\*Article extracted from the thesis "*Análise da situação de segurança do paciente em hospitais de grande porte do Estado de Santa Catarina*" (Analysis of the patient safety situation in large-sized hospitals in the state of Santa Catarina). University of Planalto Catarinense, 2016.

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## ● INTRODUCTION

In the last few years, the development of policies and global strategies for patient safety has been observed in countries at different developmental levels, driven by the World Health Organization (WHO) and, therefore, the subject has been spreading among health institutions<sup>(1)</sup>.

It is understood that health care stands out through the institution's commitment regarding services provided and patient safety, promoting quality care without risks or errors<sup>(2)</sup>. According to the WHO, many patients are injured due to health care errors, and it is estimated that of every 10 patients, one suffers some adverse event during their care in the hospital<sup>(3)</sup>.

Nonetheless, the development and incorporation of strategies become necessary, aiming at changing the institutional culture, detecting failures, and preventing errors, with the implementation of measures for the improvement in the quality of the processes performed<sup>(2)</sup>.

Simple and effective strategies such as development of specific protocols, actions that work as safety barriers, and continuing education in hospitals may prevent and reduce risks and damages in health services. The understanding of risks, care characteristics, and hospital structure may supply important elements for the improvement of care, especially for nursing<sup>(4)</sup>.

One of the initiatives organized by the WHO that is worth mentioning is the African Partnership for Patient Safety (APPS), initiated in 2008, that listed 12 relevant action areas for a sustainable approach<sup>(5)</sup>. Considering the need to gather efforts to change reality and strengthen the quality of health services in Brazil, the Brazilian Ministry of Health established the National Patient Safety Program by means of Edict no 529 of April 1, 2013<sup>(6)</sup>. Based on these international movements combined with national patient safety policies, the objective of the present study was to analyze the patient safety situation in four large-sized hospitals in the state of Santa Catarina, in order to list priorities for the improvement of care in these places.

## ● METHODOLOGY

The present study integrates the thesis "Análise da Segurança do Paciente em Hospitais de Grande Porte de Santa Catarina" ("Analysis of patient safety in large-sized hospitals of Santa Catarina"), in association with the Graduate Program in Environment and Health of the University of Planalto Catarinense (UNIPLAC, as per its acronym in Portuguese). The study was awarded with two scientific initiation scholarships funded by the Research Fund of the university and with a scholarship from the University Scholarship Program of the University of Santa Catarina (UNIEDU/FUMDES, as per its acronym in Portuguese). It was approved by the Research Ethics Committee of the UNIPLAC under protocol no 921.170 of 12/15/2014.

Quantitative and descriptive study was conducted between March and November 2015 in four large-sized hospitals in the macro-regions of Planalto Serrano and Northeast of Santa Catarina that agreed to participate in the study. Inclusion criteria for the hospitals were: (a) being designated as a hospital, hospital association, or hospital foundation; (b) being characterized as a large-sized hospital with more than 150 beds; (c) being a hospital that agreed to participate in the study.

The participants were chosen considering the following criterion: being an employee of the hospital under study. Exclusion criteria were: (a) professionals with weekly working hours fewer than 10 hours; (b) academics, residents, and trainees; (c) professionals who were on leave; (d) those who filled in fewer than half of the questions in the instrument; and (e) those who withdrew after data collection.

The sample was intentional and non-probabilistic, by means of simple random sampling, represented by 10% of the total number of employees in each institution, reaching a total number of 227 questionnaires answered and returned.

The questionnaire developed based on the Short Form for Analysis of Patient Safety Situation for the African Partnership organized by the WHO<sup>(7)</sup> was applied to professionals who agreed to participate in the study by signing the Free and Informed Consent Form. The third part of the original form was

adapted to the needs and context of the study after a pre-test application. Information associated with the participants' profile was included.

The instrument resulted in 114 structured questions with response pattern "yes, no, meet partially, and unknown," maintaining the 12 areas proposed by the WHO: 1- Patient safety and development of systems and health services (nine questions); 2- National Patient Safety Policy (nine questions); 3- Knowledge and learning on patient safety (13 questions); 4- Increase in patient safety awareness (10 questions); 5- Infections associated with health care (28 questions); 6- Workers' protection (10 questions); 7- Waste management in health care (six questions); 8- Safe surgical interventions (nine questions); 9- Safety associated with medicines (nine questions); 10- Partnerships for patient safety (six questions); 11- Funding for patient safety (three questions); and 12- Research for patient safety (two questions).

The data were analyzed by means of the Statistical Package for the Social Sciences 22.0 software (IBM SPSS), with the use of valid percentages. Descriptive statistics of all questions were carried out. This was followed by analysis of the questions by area, establishing a mean of affirmative, negative, partial, and unknown responses for each area. Finally, the chi-square test was applied to compare the affirmative answers in relation to those grouped, with a 5% significance level.

## ● RESULTS

The percentage of valid responses was 96.64%. Analysis of the participants' profiles showed a prevalence of women, with ages between 30 and 39 years, with complete higher education, from the nursing area, with professional practice of up to 4.9 years and with 30 or more working hours per week.

The overall mean of the affirmative responses was 35.38% and the negative, partial, and unknown responses summed represented 61.26%. In areas 1, 5, 6, and 7 there was a prevalence of affirmative responses, with prominence in area 5 – "Infections associated with health care," which reached the highest percentage of affirmative responses (61.22%) among all areas. In other areas, the sum of negative, partial, and unknown responses was prevalent, with prominence in area 12 – "Research for patient safety," with the lowest percentage of affirmative responses (11.7%) and the highest percentage of unknown responses (59.5%). The application of the chi-square test showed a significance level in 86.85% of the questions.

Table 1 – Median of responses obtained in each of the 12 areas proposed for the study considering n (227). Santa Catarina, Brazil

| AREAS  | Mean of responses obtained in each area |              |                    |             |
|--|---|--------------|--------------------|-------------|
|  | Affirmative (%)                         | Negative (%) | Meet partially (%) | Unknown (%) |
| 1) Patient safety and development of systems and health services | 43.75                                   | 21.15        | 23.5               | 8.25        |
| 2) National Patient Safety Policy                                | 31.03                                   | 24.96        | 16.44              | 25.2        |
| 3) Knowledge and learning on patient safety                      | 33.51                                   | 29.17        | 12.27              | 23.01       |
| 4) Increase in patient safety awareness                          | 32.95                                   | 23.21        | 11.72              | 29.68       |
| 5) Infections associated with health care                        | 61.22                                   | 9.62         | 11.95              | 15.08       |
| 6) Workers' protection   | 43.31                                   | 23.87        | 17.23              | 13.96       |
| 7) Waste management in health care                               | 49.93                                   | 17.6         | 13.66              | 16.71       |
| 8) Safe surgical interventions                                   | 27.12                                   | 12.37        | 8.1                | 49.27       |
| 9) Safety associated with medications                            | 38.28                                   | 18.48        | 10.23              | 30.35       |
| 10) Partnerships for patient safety                              | 24.35                                   | 14.01        | 4.18               | 54.61       |
| 11) Funding for patient safety                                   | 27.46                                   | 21.43        | 3.96               | 43.76       |
| 12) Research for patient safety                                  | 11.7                                    | 23.35        | 2.2                | 59.5        |
| Overall mean of responses  | 35.38                                   | 20.18        | 10.30              | 30.78       |

Considering all analyzed areas, the existence of the following aspects stood out as positive points: appropriate physical structure; computerized systems for care records; operating commissions; a system for obtaining patients' consent; personal protective equipment and information on its use; appropriate monitoring of work accidents; protocols on waste management; protocols for patients' identification; a computerized system for medication prescriptions; provision of routines for prescriptions; dispensation and manuals for medicine consultation; and partnerships with education institutions.

Regarding weaknesses, the following report was evidenced: a deficit in processes for acquisition and supply of materials; an inadequate number of professionals and programs for quality improvement; professionals' lack of knowledge on national patient safety policy and hospital programs; absence or lack of knowledge concerning notification, research, and recording of incidents and adverse events; absence of protocols and weaknesses in training; need for continuing education directed toward patient safety; absence of checklists and services flowcharts. Deficiencies were identified in clothing processing, data dissemination on antimicrobial resistance, records of work hours exceeded, absence of emergency treatment for workers, improvement of protocols and records of complications and surgical events, safe use of medications, and strengthening of partnerships and studies.

## ● DISCUSSION

Many relevant aspects can be discussed under the light of patient safety, through the results of the study. In the area "patient safety and development of systems and health services," 82% of the participants pointed to the number of professionals as inappropriate. This index is close to a result obtained in another study, in which 71% of the employees responded that the number of professionals was insufficient to meet work demands<sup>(8)</sup>.

Moreover, it was observed that 87.7% of the participants worked 30 or more hours per week. These data refer to the risk of exhaustion and consequently the professionals' inattention, which leads to errors and warns of the need for a balanced distribution of workers in workplaces, because the association of workload with the increase in the number of patients per nursing professional predisposes the occurrence of adverse events. In particular, it increases the risk of falls and infections, with a negative impact for patients' safety<sup>(9)</sup>.

When analyzing results that encompass work conditions, the need for implementation of improvements that include adequacy of the number of professionals and existing structures is evidenced, and it is agreed that responsibility for the occurrence of adverse events is not exclusively that of professionals, but includes deficiencies in the healthcare system in its conception, organization, and operation<sup>(10)</sup>. It is necessary to know the existing weaknesses and propose preventive measures<sup>(11)</sup>.

The existence of computerized systems for service records had a positive prominence, as did clinical commissions and audits. Information systems contribute to the organization of information, professionals' legal ethical support, and improvement and strengthening of care. They provide information management, the conception of support tools for decision and development of quality indicators of the care provided<sup>(12)</sup>.

Regarding the "National Patient Safety Policy," it was evidenced that most professionals have knowledge concerning it and they affirmed that it is present in hospitals. Nonetheless, a significant number of participants were not familiar with the program in their workplace. It is worth mentioning the percentage of negative responses regarding participation in decisions associated with patient safety (71.8%). The National Patient Safety Program (PNSP, as per its acronym in Portuguese) is recent and institutions are under the implementation phase.

Adverse events are a form of recognition of errors, because they are associated with damages, and therefore are more evident. A study conducted in the state of Rio de Janeiro showed an incidence of 7.6% of patients affected by adverse events, of which 66.7% could have been prevented. Besides harm to patients, the occurrence of events increases the length of stay, mortality, and hospitalization costs<sup>(11-13)</sup>.

A study conducted to evaluate the financial magnitude of adverse events in hospitals in Brazil revealed that patients who suffered adverse events showed a mean length of hospital stay of 28.3 days, which was higher than that observed in patients who did not suffer damage, resulting in 181 additional hospitalization days and an additional cost of R\$1,212,363.30. These resources could be used for the funding of other populations' health needs<sup>(14)</sup>, or on strategies for the prevention of avoidable adverse events. Regarding funding for patient safety, 78% of professionals were unaware of the existence of specific resources for this purpose, because government is the primary maintainer of these institutions.

The area "knowledge and learning on patient safety" showed the existence of continuing education programs in hospitals (41.4%), but it was noticed that there was a deficit regarding the inclusion of the theme of patient safety, both in training and promoting existing protocols, flowcharts, and checklists. Simple and effective strategies, such as development of specific protocols, actions that work as safety barriers, and continuing education in hospitals may prevent and reduce risks and damages in health services<sup>(4)</sup>. One of the weaknesses found is associated with the communication and promotion of what already exists, where to access it, how to use it, and what is being developed, all requiring improvements. Communication failures among teams may cause decreases in quality of services, errors, and harm to patients. In this respect, communication in the relationship between health professionals and patients is as important as that among professionals<sup>(15)</sup>.

The results showed that only 16.3% of the professionals recognized the existence of a collective awareness on the subject, and that there was low adherence in activities of awareness either organized by hospitals or through external trainings. It is important to note, in a positive way, the existence of a system to obtain patients' consent before procedures (70%) and the use of visual resources to promote awareness among professionals, patients, and families (55.5%).

Perception concerning organizational culture is essential for safety and it can be defined as a form for perceiving the thinking and feeling of a group<sup>(3)</sup>. When it is ruled in guilt or punishment, it might compromise the flow of information and reports of events, making the development of a culture directed toward patient safety difficult. To be incorporated, it requires effort and commitment of the management and professionals, as well as cohesion and cooperation among diverse sectors and departments<sup>(3)</sup>. In this respect, safety culture encompasses behavior patterns of individuals and groups, reflected in values and attitudes, and determines how professionals perform their work<sup>(8)</sup>. The implementation of safety culture may be associated with a decrease in adverse events and mortality, thus improving quality of services<sup>(16)</sup>.

Regarding the area "workers' protection," supply of personnel protective equipment and information on its use was observed, as well as the appropriate monitoring of work accidents. Nonetheless, weakness in emergency care for workers and in the follow-up of oriented care was identified, which might cause gaps in institutional protocols.

Regarding the area "partnerships for patient safety," partnership with education institutions (76.6%) was shown, which is potential for the development of studies in the area. Nevertheless, participants were unaware of the participation of hospitals and their managers in political decisions and government planning, as well as local or regional actions focused on patient safety. Therefore, in addition to developing their own actions, it is necessary to expand partnerships and share experiences, searching for mutual learning, going beyond institutional and even international boundaries<sup>(17)</sup>.

The area "research for patient safety" pointed to the need to make room for research in health institutions, both to identify causes and to propose solutions. The WHO recommends six priority research areas, according to countries' developmental level. In the case of Brazil, which is a developing country, it guides concentration on applied and evaluation research, with the goal of developing local solutions with a good cost-benefit<sup>(18)</sup>.

Regarding "waste of management in health care," the data positively showed the existence of written protocols concerning waste management in hospitals (63.4%), as well as dissemination of information and adequate supply of materials. Nevertheless, 57.3% of professionals affirmed having disposal problems.

The data obtained in analysis of questions on "infections associated with health care" confirmed that this area is well organized and developed in institutions. Infections associated with care often affect

patients and they may lead to an increase of 10% to 40% in mortality. Nonetheless, some strategies, such as hand hygiene, constitute a low cost and high impact measure in the prevention of infections<sup>(19)</sup>. Therefore, strategies such as adherence to hand hygiene must be constantly encouraged, helping professionals in the identification of opportunities for its accomplishment.

As regards “security associated with medications,” the existence of manuals and routines for consultation and computerized systems for prescriptions was evidenced. There is a deficit in training, supply of medications, and knowledge of the role of pharmacists in the evaluation and recommendations on prescriptions. Medication errors are serious occurrences, which might cause physical and sometimes social damages, as well as high costs for health systems. They involve the participation of many processes and professionals, which may increase risks. Errors may be associated with practice, communication failures among professionals, errors in writing prescriptions, labels and packages, patient identification, doses, preparation, distribution, and administration, among others<sup>(20)</sup>.

Many aspects associated with “safe surgical interventions” are still unknown by most professionals and include specific protocols, such as admission of patients and systems to record and analyze complications and deaths associated with surgical procedures. The use of admission forms and checklists has shown improvement in communication among teams, promoting safety regarding information provided for better patient care. When checklists are used, professionals strictly follow filling stages, which also helps in decision-making<sup>(21)</sup>.

The use of the short form<sup>(7)</sup> seems to have been unprecedented in Brazil until now, since national publications cannot be found for comparison of results. A report published in 2014 by the WHO, which evaluated the African Partnership for Patient Safety (APPS), showed a positive impact on several indicators. The situation analysis is a tool that generates an extensive database and allows hospitals to follow the evolution of improvements over time. Among the main results, the partnership model helped in the development of leadership, encouraged the co-development of solutions among hospital partners, influenced the behavior of professionals, and recognized difficulties and limitations associated with diversity among projects and activities among partners<sup>(22)</sup>.

## ● FINAL CONSIDERATIONS

To analyze the patient safety situation is a crucial stage for health institutions that seek excellence, and therefore it impacts the quality of care provided. Consequently, it stands out as an area of global relevance that, among others objectives, seeks the development of a safe culture in hospitals and safe care practices.

The results are relevant, as gaps and priorities in the planning of actions for patient safety are indicated, and enable reflecting on and sharing of existing successful experiences among hospitals. Each institution can increase discussion on specific areas by involving managers, leadership, and other professionals on the multidisciplinary team, promoting a listening environment, welcoming demands, collective construction, and learning for patient safety.

Several aspects to be explored by hospitals were outlined, such as promotion of a safety culture in health institutions, implementation of communication strategies, strengthening of continuing education programs, reorganization of work processes, use of management instruments, encouragement to notify and evaluate adverse events, and strengthening of partnerships and studies in the area, among others.

In conclusion, there are relevant safety actions under development in hospitals, and a significant movement for the implementation of the National Patient Safety Program in the state of Santa Catarina.

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