







CONTRIBUTIONS OF THE REGULATORY INNER CORE TO PATIENT SAFETY

CONTRIBUIÇÕES DO NÚCLEO INTERNO DE REGULAÇÃO PARA A SEGURANÇA DO PACIENTE

APORTES DEL NÚCLEO INTERNO NORMATIVO PARA LA SEGURIDAD DEL PACIENTE

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ABSTRACT

Objective: to identify the contributions of the Internal Regulation Core to patient safety. **Method:** qualitative research carried out between August and October 2020. Audio-recorded interviews were carried out with 13 professionals who worked in the wards, in the emergency room, in quality management and in the Internal Regulation Center. Data were analyzed using the Iramuteq® software and the steps proposed by Creswell. **Results:** the findings revealed that the Internal Regulation Nucleus contributes to patient safety, bypassing the established goals: effective communication; patient identification; reduction in the risk of infections associated with health care - the COVID-19 pandemic was presented as an important fact; safety for surgery, as it speeds up access to the hospital for a surgical procedure; and reduction of queues. It also helps to prevent complications resulting from falls, as the patient can be quickly allocated to a safe bed. Finally, the nurse, in his role as a leader in the service and as a link in the management of safe care, also proved to be important. **Conclusion:** although some weaknesses were detected, the contribution of the Internal Regulation Center stands out for strengthening patient safety goals. As a result, the importance of regulatory flows from the perspective of hospital bed management is reaffirmed, as well as the precepts of patient safety desired by managers. Nevertheless, the nurse acts as a link between these two scenarios.

Keywords: Hospital Bed Capacity; Patient Safety; Health Management; Nursing.

RESUMO

Objetivo: identificar as contribuições do Núcleo Interno de Regulação para a segurança do paciente. **Método:** pesquisa qualitativa desenvolvida entre agosto a outubro de 2020. Foram realizadas entrevistas audiogravadas junto a 13 profissionais que atuavam nas enfermarias, no pronto-socorro, na gestão da qualidade e no Núcleo Interno de Regulação. Os dados foram analisados com o auxílio do software Iramuteq® e as etapas propostas por Creswell. **Resultados:** os achados revelaram que o Núcleo Interno de Regulação contribui para a segurança do paciente, entornando as metas instituídas: comunicação efetiva; identificação do paciente; redução do risco de infecções associadas aos cuidados em saúde - a pandemia de COVID-19 foi apresentada como um importante dado; segurança para cirurgia, uma vez que agiliza o acesso ao hospital para procedimento cirúrgico; e diminuição de filas de espera. Ainda, contribui para prevenir complicações decorrentes de quedas, pois o paciente pode ser alocado com agilidade num leito seguro. Por fim, o enfermeiro, no seu papel de liderança do serviço e como elo para a gerência do cuidado seguro, também se mostrou importante. **Conclusão:** embora algumas fragilidades tenham sido detectadas, a contribuição do Núcleo Interno de Regulação se sobressai por fortalecer as metas da segurança do paciente. Em razão disso, reafirma-se a importância de fluxos regulatórios na perspectiva de gestão de leitos hospitalares, assim como os preceitos da segurança do paciente almejada pelos gestores. Não obstante, o enfermeiro atua como elo entre esses dois cenários.

Palavras-chave: Número de Leitos em Hospital; Segurança do Paciente; Gestão em Saúde; Enfermagem.

RESUMEN

Objetivo: identificar los aportes del Núcleo Interno Normativo para la seguridad del paciente. **Método:** investigación cualitativa desarrollada de agosto a octubre de 2020. Se realizaron entrevistas audiogravadas a 13 profesionales que trabajaban en las salas, en el servicio de urgencias, en la Gestión de Calidad y en el Núcleo Interno Normativo. Los datos fueron analizados con la ayuda del software Iramuteq® y los pasos propuestos por Creswell. **Resultados:** los hallazgos revelaron que el Núcleo Interno Normativo contribuye a la seguridad del paciente, desbordando los objetivos establecidos: comunicación eficaz; identificación del paciente; reducción del riesgo de infecciones asociadas a la asistencia sanitaria - la pandemia COVID-19 se presentó como un dato importante; en la seguridad para la cirugía, ya que agiliza el acceso al hospital para procedimientos quirúrgicos y, en la reducción de las colas de espera. También contribuye a la prevención de complicaciones derivadas de caídas, ya que el paciente puede ser ubicado rápidamente en una cama segura. Y, finalmente, el enfermero, en su papel de líder en el servicio, como enlace en la gestión del cuidado seguro, también resultó ser un resultado importante. **Conclusión:** aunque se detectaron algunas debilidades, se destaca la contribución del Núcleo Interno Normativo en el fortalecimiento de las metas de seguridad del paciente. Como resultado, reafirma la importancia de los flujos normativos desde la perspectiva de la gestión de camas hospitalarias, así como los preceptos de seguridad del paciente deseados por los gestores. Sin embargo, la enfermera actúa como enlace entre estos dos escenarios.

Palabras clave: Capacidad de Camas en Hospitales; Seguridad del Paciente; Gestión en Salud; Enfermería.

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INTRODUCTION

Hospital overcrowding is a problem on the agenda in current health scenarios. The number of beds has been decreasing over the years, causing the queues to increase and overload the system⁽¹⁾. Therefore, improving the flow of patients from admission to discharge is an essential strategy to improve the patient care⁽²⁾.

The National Hospital Care Ordinance (PNHOSP-*Portaria Nacional de Atenção Hospitalar*), through Ordinance No. 3,390, of December 30, 2013, was instituted in response to the needs of the population regarding the expansion of access to the hospital context. The objective is, therefore, to adjust the flow of health care according to the demand received. This Ordinance applies to all public and private hospitals that provide services through the Unified Health System⁽³⁾. Among the policy guidelines, the Internal Regulation Center (IRC) is presented, defined as “the interface with the Regulation Centers to outline the profile of complexity of the assistance that your institution represents within the scope of the SUS”^(3:s.p).

At IRC, bed management is a tool to improve patient flow, which can be performed by a nurse or physician. The management of beds performed by this professional consists of organizing the allocation of new admissions to vacant beds, which is done through knowledge of the hospital census and the demands for hospitalization in real time. In addition, it evaluates and implements actions aimed at improving the entire hospitalization process, from patient arrival to hospital discharge⁽⁴⁾.

About improving patient care, it is necessary to highlight that patient safety is related to the quality of care offered. Quality in health is obtaining the greatest benefits with the lowest possible risk for the patient. In this context, patient safety - defined as reducing the risk of unnecessary damage associated with health care to an acceptable minimum⁽⁵⁾ raises concerns in the sense of presenting, albeit indirectly, the benefits of well-oriented flows for the patient to access the hospital services.

Internationally, bed management is known as Lean System Healthcare. Studies carried out in countries such as the United States, Canada and the United Kingdom have shown that, after the implementation of this system in hospitals in these countries, there was an increase in the quality of patient care and the efficiency of the organization^(6,7). At the national level, some Brazilian states implemented IRC in public hospitals. This is the case of the state of Paraná, in Curitiba⁽⁸⁾, and other regions that started to adhere to this service to the detriment of policy requirements and in view of the benefits for the health service.

Based on what the PNHOSP recommends, together with the patient safety proposal in the western region of Paraná, a public teaching hospital implemented the IRC in 2018, based on the Lean methodology. The objective was to offer better care to patients, fast and efficient and reducing the queues of patients waiting for access to the hospital. The implementation of the methodology in the hospital took place through the Lean in Emergencies Project: reduction of hospital overcrowding, via the Ministry of Health, developed through the Support Program for Institutional Development of the Unified Health System SUS – Proadi/SUS (*Programa de Apoio ao Desenvolvimento Institucional do Sistema Único de Saúde-SUS*), carried out in partnership with the *Hospital Sírio-Libanês*.⁽⁹⁾

The relevance of this research is anchored in the gap found in the literature about the benefits of IRC in interface with patient safety. As the literature and the PNHOSP itself point out, bed management with the IRC could help with these bottlenecks in dammed queues, leading to an empirical conclusion of its impact on patient safety.

As the nurse is a valuable component of the IRC team, knowing whether this interface exists in the perception of their peers was the purpose of this research. Given the above, we sought to answer the following guiding question: What is the interface between an IRC and patient safety in the perception of professionals at a public teaching hospital? Therefore, the objective is to identify the contributions of the Internal Regulation Core to patient safety.

METHODS

This is a descriptive and qualitative research that followed the criteria presented in the Consolidated Criteria for Reporting Qualitative Research (COREQ).¹⁰ The research was carried out in a public teaching hospital located in the western region of Paraná, considered a reference in the region. The hospital has approximately 240 beds linked to the SUS, in addition to additional beds to handle cases of COVID-19.

Audio-recorded interviews were conducted with 13 professionals, who worked in the wards, in the emergency room, in quality management and in the Internal Regulation Center (IRC). These scenarios were chosen because they present a frequent interaction with the IRC in the hospital routine.

It was considered as an inclusion criterion: professionals who had been working for at least two months in the referred hospital, as this is considered a minimum time for the professional to integrate into the work routine. This factor was due to the turnover of professionals

during the pandemic in the study scenario. As exclusion criteria, the following were: absence of the participant after three attempts to schedule the interview; and being on vacation or leave (maternity, paternity, medical certificate) during the data collection period. Thus, there was a sample loss of one participant due to absence from the interview.

Data collection took place from August to October 2020. A semi-structured script of our own elaboration was used. Initially, there were items for the characterization of the participants, such as identification, assigned code, sector, age, gender, and time of professional practice. Subsequently, the data were presented using simple descriptive statistics with the aid of Microsoft Excel® 2010.

Still, seven open questions made up the script: "What were the motivations for the implementation of bed management in the institution?", "What activities are developed in bed management?", "How do IRC activities integrate with the other points of care in the health network?", "How does IRC contribute to Patient Safety?", "Cite an example that you have experienced IRC's contribution to Patient Safety", "How does the patient's flow occur from admission to hospital and medical discharge?", "What are the indicators used and monitored in the IRC and what is the importance of each one of them?", "What are the strengths and weaknesses with the implementation of the IRC?" and "What strategies could be used to improve the IRC's work process?". In addition, a pilot test was carried out in the hospital without the need to adjust the script.

The invitation and the audio-recorded interview were conducted personally by the Nursing researcher herself in the participants' work sector, at a date and time of her (professional) choice, with the choice of a comfortable, noise-free, and private environment after written consent. The interviews lasted an average of 20 minutes. Data saturation was the criterion chosen to end the interviews. For this type of research, the sample size is determined based on the need for information. When the point is reached where no new information is obtained and the responses begin to repeat, data collection ends.¹¹

After transcribing the audio-recorded interviews and reading them meticulously, a corpus of the text was constructed, which was analyzed using the Interface de R pour les 27 Analyses Multidimensionnelles de Textes et de Questionnaires - IraMuteq® software. This software was developed in 2009 by Pierre Ratinaud and consists of a free open coding program that allows the processing and statistical analysis of texts produced, based on the R software and the python programming language. The texts were recorded in "txt" format and encoded. At the

beginning of each transcribed interview, the following symbols were presented: four asterisks (****) followed by a series of variables introduced with an asterisk (*) and separated by a space⁽¹²⁾.

The types of analysis extracted were: Descending Hierarchical Classification (CHC) and similarity analysis. Also known as a dendrogram, the CHC aims to identify the ideas contained in the text, grouping vocabularies through the lexical proximity of the words, and separating the ideas into kinds of mental worlds or speech representation systems. The CHC configures the text segments, which are classified according to their respective vocabularies, and the set of these segments is divided according to the frequency of the reduced forms. Its objective is to obtain the classes of text segments, and through the matrices, it is organized in the form of a dendrogram, which illustrates the relationship between the classes⁽¹²⁻¹⁴⁾.

The similarity analysis is based on graph theory, whose results help in the study of relationships between objects^(13,14). With the text corpus and before the CHC and the similarity analysis, the steps proposed by Creswell: pre-analysis were applied; exploration of the material or codification and treatment of the results; and interpretation⁽¹⁵⁾.

This study is part of a wider research project, which includes the Construction and Approaches of Assistance and Management Indicators of the Nursing Service at the [name removed] Hospital, approved by the Research Ethics Committee involving human beings, according to Opinion Report No. 3,323,244/2019, respecting the guidelines and ethical precepts of Resolution 466 of 2012.

Furthermore, it is noteworthy that the participants were identified through coding to respect their anonymity, with the initial related to the respective scenario followed by the number of participants, namely: Nur1 (Nurse), NurTech2 (Nursing Technician), QualNur12 (Quality sector nurse), IRC13 (Administrative/IRC team), and so on.

RESULTS

Characterization of the participants

Thirteen professionals participated in this study, of which 46.1% were nurses from wards G2 and G3 and from the emergency room; 46.1% were Nursing technicians from units G3, G2; 7.7% were nurses from the Quality Sector and 7.7% were professional members of the IRC (administrative) team.

Most participants (92.3%) were characterized by the female gender, and 7.69% by the male gender. About the

age of the participants, most respondents (46.1%) are aged between 45 and 55 years, with working time over two years (69.2%).

The IraMuteq® software presented a corpus consisting of 13 Initial Context Units (UCI), with a total of 5,259 occurrences and 147 analyzed segments. Still, it presented 85.71% of the corpus, a percentage that converges to the minimum requirement of 70% indicated in the literature. From matrices and crossing text segments and words, the CHD method generated six classes (clusters) divided into two sub-corpus (Figure 1).

The dendrogram enabled the visualization of the words that obtained the highest percentage in terms of average frequency between them and different between them. The similarity chart (Figure 2), in turn, provided the graphic representation, to visualize the relationships between the linguistic forms of a corpus. There are two centers that stand out: bed and patient. Thus, the search conditions for an interface between the IRC and patient safety are achieved, to identify the contribution of one to the other (Figure 2).

Based on the results from the software based on the six classes and the dendrogram, two major categories emerged: “The IRC and its relationship with the goals of the Patient Safety Program” and “Contributions of the IRC to patient safety: the nurse as a bond”.

The IRC and its relationship with the goals of the Patient Safety Program

Some participants related the benefits of IRC aimed at identifying the patient in the hospital bed.

This organization they have of related rooms, for example, the orthopedics part or when there is a clinical patient and they are in a separate room, I think this is so cool and essential for patient safety. The concern with contaminated patients and the issue with names. So, I think it's an excellent program/organization. I think it is very valid and contributes to patient safety. (Nur1).

In the similarity chart, it was possible to identify that the COVID-19 pandemic was also incorporated into aspects involving the IRC and patient safety. Such data can be justified by the current moment of health contextualized in the sector. This research was developed at a time when the hospital was also organizing itself to face the pandemic demand. In this way, it was perceived as an influence on the professionals' work process, which appeared in their reports.

[...] sometimes it happens that the patient needs to have an X-ray before being discharged. And now with this pandemic, the flow ends up happening when the patient goes to have an X-ray, downstairs everything is interdicted due to COVID and delays the patient's discharge. We always try to speed up patient discharge. (Nur4).

For professionals, effective bed management would help establish correct flows for admitting patients with a COVID-19 profile, leading to the safety of other patients in the hospital. This process therefore encompassed hospital infection control in conjunction with other scenarios.

The IRC assists in the safe distribution of patients with similar needs on bed management; as well as in the isolation of those who may aggravate the condition of the other patient. (IRC1).

Still on infection control, weaknesses in the IRC were pointed out about the allocation of patients who underwent surgery, without considering the classification of surgery. Thus, the impact of the IRC can also be seen around the principles of safe surgery and health-related infections.

Agility in hospitalization and distribution of patients must be improved, as clean surgeries are not always respected, putting contaminated patients together or lots of people in the ward. (NurTech2)

The risk of falls was in certain reports, which suggests that the participants are aware of these care indicators used in the institution. Thus, even though it is not an indicator specifically monitored by the IRC when transferring a patient from one sector to another, there is a reflection on safe care in the perception of respondents.

In addition, there was mention of the risk of pressure ulcer associated with the way in which the patient is accommodated for longer periods on stretchers. This is an essential element in the perspective of safe care.

Here we check the risk of falling, which is put on the patient's wristband. Also on the board, when the patient enters, he/she makes the admission here, we already put his/her name, age, doctor. (Nur4).

In fact, it contributes a lot in the sense that patients had many falls, they are on stretchers and not on beds with bars and the flow of patients too, we could not pass with patients in the corridor of the emergency room, for example. So, this caused a lot of harm to patients, in addition to injuries. (Nur6).

The goal of the Patient Safety Program related to communication was also mentioned in this research.

[...] It is the IRC that checks with the nurse the choice of a bed and we do all the preparation of the bed to receive the patient. At discharge, the doctor stops by and notifies us and prepares the hospital discharge papers and the patient goes home. (TecEnf2).

IRC contributions to patient safety: the nurse as a bond

As an important member of the team, the nurse is assigned as a bond between the activities carried out at the IRC and that can impact patient safety. Some reports pointed to the use of specific IRC indicators, managed by the nurse.

[...] Hospital occupancy - defines the percentage of occupancy for each ward; Length of stay - indicates how long the patient stays in the institution; Los with Hospitalization - indicates the time that the patient takes from his entry in the ER until his transfer to the ward; Los without hospitalization - indicates

the time that the patient who does not need hospitalization stayed in the ER until discharge; Number of admissions for hospitalization - number of patients hospitalized in the period; Number of deaths by age - analyzes the profile of patients who die; Number of internal transfers; Among others. (IRC1).

[...] They are important for us to know “look, we need to come in with an action plan and reassign the patient according to the available bed, if there is a male 'ortho' patient, we allocate the patient who has been in the emergency room for the longest time in that bed [...] Everyone needs to be alert, we have to have an action plan to relieve this patient so that he does not stay in the emergency room for so long. (Nurf6).

[...] it was kind of inhuman to see those corridors, those hard stretchers. [...] The IRC certainly contributes to patient safety. [...] One of the good things was that they took patients out of the corridors and sent them to the wards. The beds have more turnover, so it's cool. (NurfTech7).

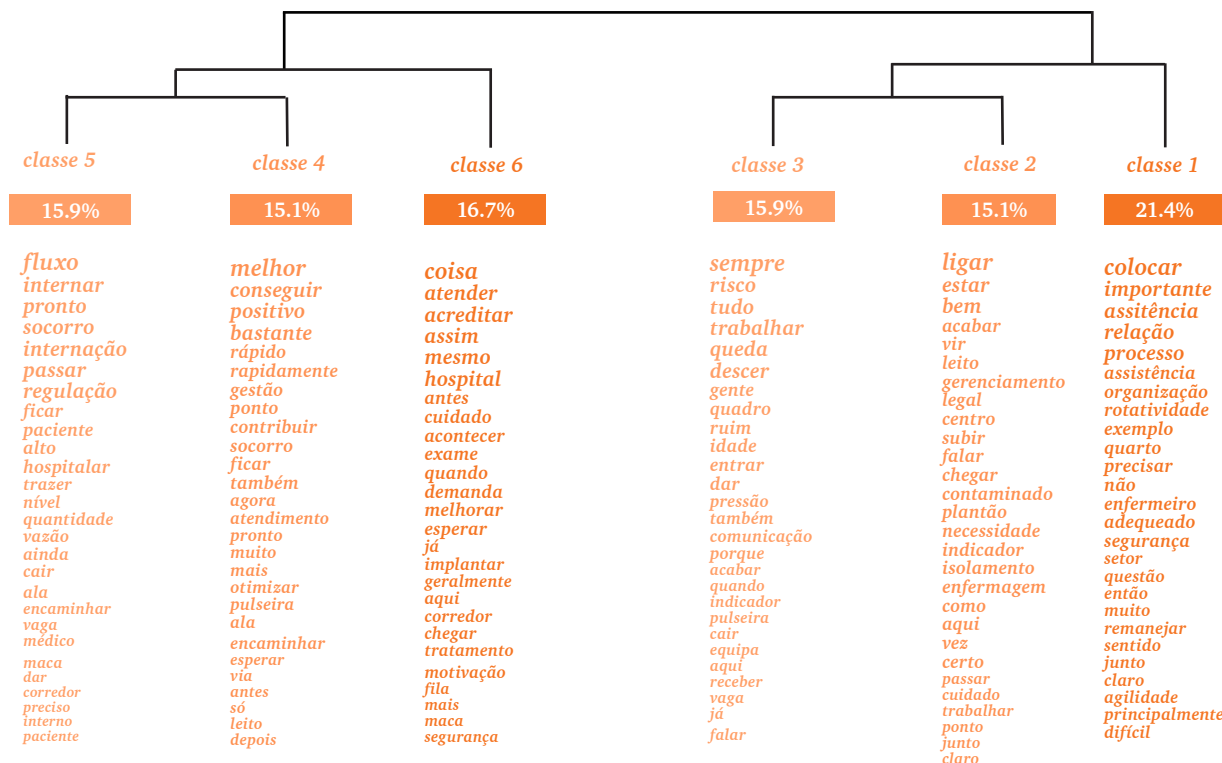


Figure 1 - Analysis obtained with the CHC - Dendrogram. Brazil, 2021. Source: survey data, Iramuteq® Software, 2020

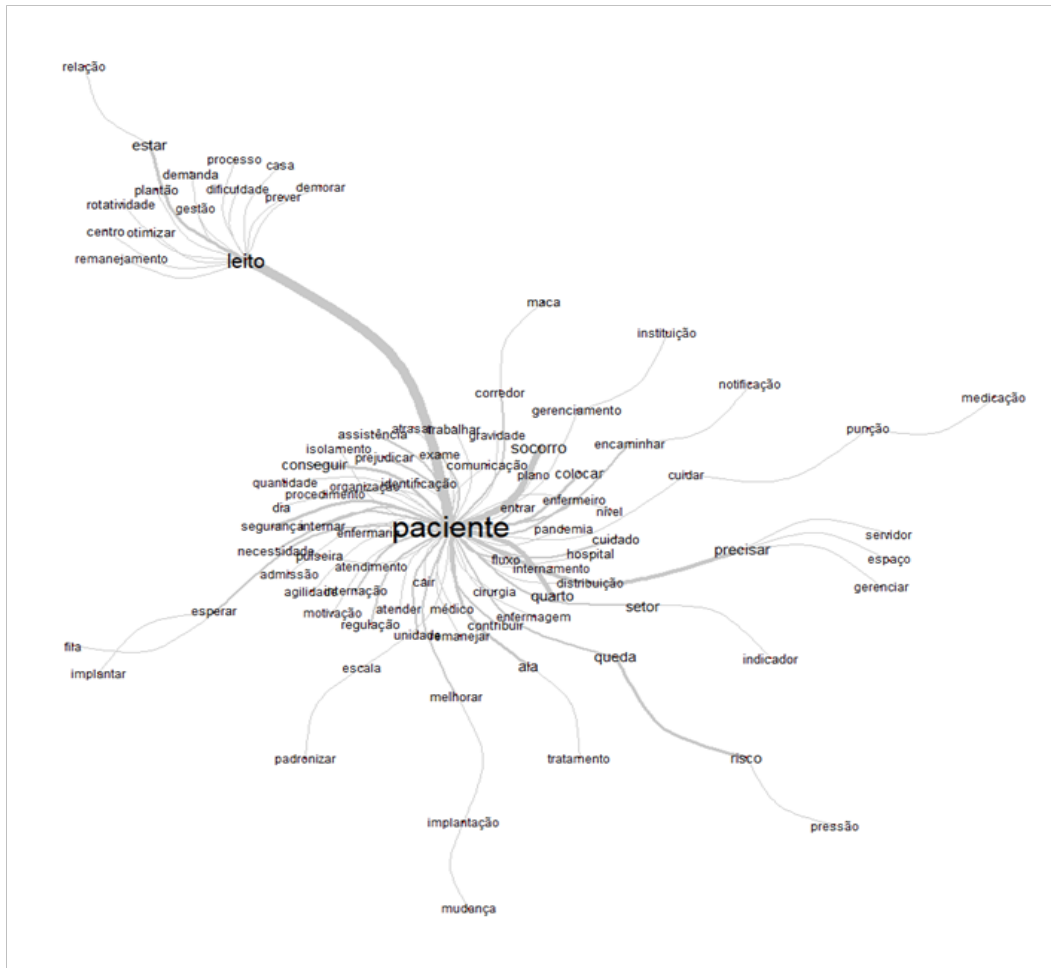


Figure 2 - Similarity analysis originated by the IraMuteq@ Software. Source: survey data, IraMuteq@ software, 2020

DISCUSSION

It is believed that, for this research, the participation of the Nursing team effectively contributed to the proposed objective. The study phenomenon was unveiled with the perception of Nursing in the units, as it was the place where it is possible to directly visualize the aspects that encompass patient safety. In some professions, such as Nursing, women are perceived as privileged in relation to these characteristics of care, which may be related to a profile that until then was mostly female⁽¹⁶⁾, something explicit in the characterization of the participants in this research.

As nurses develop a professional identity, they highlight their concerns with safety and their solutions.¹⁷ From the perspective of the professional member of the IRC, elements of activities carried out by this service that contrast with patient safety were perceived. As an innovative field for nurses, this performance scenario can

provide many subsidies for the improvement of practice, whether managerial or care in your institution.

The implementation of bed management can bring numerous benefits to the hospital, such as an increase in the occupancy rate, better use of hospital capacity and even a decrease in queue time waiting for care.

An Italian study strengthened the importance of bed management by confirming that most Italian regions have routinely efficient management of their facilities. This allows hospitals to treat patients without the risk of overcrowding and bed shortages, thus not experiencing critical levels⁽¹⁸⁾.

Bed management ranges from the development of monitoring information systems, such as the successful experience of an Iranian hospital, which aimed to plan hospital occupancy, to the development of operational admission processes through real-time monitoring of beds⁽¹⁹⁾. Although the literature has not yet identified how discharge planning contributes to reducing

the patient's length of stay in the hospital or to the readmission rates⁽²⁰⁾, the results of this research point to an interface of services focused on hospital planning. high, raising the importance of exploring these indicators in future studies.

The beds capacity is one of the most important resources of a hospital because, in addition to directly impacting patient satisfaction, it significantly affects patient admission planning decisions⁽²⁾. In a pediatric hospital in the USA, the Lean System, as a method for bed management, it pointed out benefits, such as offsetting 8.3% of the number of beds in the hospital and reducing the average time patients remain in the hospital. Added to this, the increase in patient turnover at this hospital resulted in significant financial savings⁽²⁰⁾.

The IRC contributes to patient safety, also aiming at expanding patient access to the hospital. Bottlenecks in the queues of patients waiting for a hospitalization vacancy to undergo a surgical procedure are evident. Thus, a long waiting time in the queue can harm the patient, aggravating their current health situation, as is the case with chronic diseases and the exacerbation of such diseases. Thus, an important attribution of the IRC is to reduce the time in the queue for patients⁽²¹⁾.

The clinical profile of the patient is a necessary criterion when the nurse and the IRC team make the decision to allocate the patient to the hospital bed in addition to monitoring him/her during hospitalization. Thus, articulation with other in-hospital services, such as the Hospital Infection Control Service, should be routine⁽⁸⁾.

Often, bed management is part of a broader effort to improve patient care and maintain a steady flow of these same patients. In this logic, the reports of the participants are in line with the attribution of the importance of the IRC to the adequate choice of allocating patients from the perspective of infection control.

The lack of beds results in the cancellation of elective surgeries, the delay in the admission of patients with medical emergencies and the allocation of these patients to inappropriate beds. In addition, it can generate serious situations for those who need care. The opposite is also harmful, that is, the excess of unused beds in a sector can lead to unnecessary costs for the institution, which may harm the financial activities of the hospital⁽²²⁾.

The health sector in Brazil has had more and more budget restrictions. With the increase in hospital costs and demand, the population increasingly needs an increase in the quality of care. Therefore, it is so important that it be used more and more effectively, justifying the implementation of IRC in hospitals - especially in public hospitals⁽²¹⁾.

The hospital service can suffer daily external influences, which can impact the work process. An example of this was the COVID-19 pandemic, also resulting from this research, implying a look at the perspective of IRC's performance. Hospitals sought to reorganize themselves in the face of worrying mortality rates and the need for patients with the disease to receive differentiated treatment.

Among the many factors involved, what was obtained were overcrowded ICUs, patients in serious condition, equipment in insufficient quantities, etc.⁽²³⁾ In addition to other measures, it was necessary to allocate patients in beds according to severity and create flows of environments such as disease mitigation measures, thinking about a COVID-19 Care Line^(18,24).

Patient flow management is a way to improve health services. Adapting the relationship between capacity and demand increases patient safety and is essential to ensure that patients receive the right care, in the right place, at the right time and for the right amount of time⁽²⁵⁾.

Regarding the IRC team, although the decision to admit and treat patients is the responsibility of physicians, nurses are primarily responsible for managing the total capacity of the bed, which enhances the role of this professional.⁶ In the meantime, managing and leading a team demands a lot of responsibility, knowledge and improvement of activities, important characteristics for the nurse who works at the IRC. Thus, it uses managerial skills and abilities to exercise this role, such as leadership, decision-making and teamwork for action, flexibility, negotiation, proactivity, communication, and agility⁽⁸⁾.

Moreover, in view of the weaknesses found in the reports, the pertinence of the continuous exercise of permanent education is suggested, so that professionals understand more about this service and its inferences in the care work process. This aspect may even be intertwined with the recent implementation of the service in the institution.

The dissemination of the IRC indicators for the institution will also contribute to the dissemination of the work in the institution. Indicators - whether they are care or management - are associated with safety, which is why they must be built and monitored to follow up on actions that involve the universe of care.

The use of only one institution as a scenario is recognized as the main limiting factor of this study, as it reflects an approach focused only on a certain reality. However, the knowledge produced can support improvement strategies for the work process in the institution. Therefore, it is suggested that new studies be carried out with

different methodological approaches on the subject. The importance of analyzing the contribution to patient safety through multicenter, longitudinal research and the use of measurable indicators constituted a gap pointed out by this precursor study.

CONCLUSION

The results of this research pointed to IRC's contributions to patient safety from the perspective of the institution's professionals. Although some weaknesses were detected in this interface, the contributions stood out and contemplated the patient safety goals, namely: effective communication; patient identification; reduced risk of healthcare-associated infections; safety for surgeries, as it speeds up hospital access in the surgical procedure; and reduction of queues.

Contributions also cover the prevention of complications resulting from falls. From this point of view, the patient can be quickly allocated to a safe bed on emergency room stretchers, when not a prolonged length of stay. Therefore, it is reaffirmed the importance of regulatory flows from the perspective of hospital bed management, as well as precepts of patient safety desired by managers.

The COVID-19 pandemic, given its magnitude, also appeared in the results, which implies the need to review processes, seeking to improve services and meet the patient's needs from admission to hospital discharge. This research gap presented analyzes this interface also in the COVID-19 Care Line, as a prerogative for both contexts: IRC and patient safety.

Finally, the importance of Nursing in this process is reiterated. The nurse, in a space of action of such magnitude as the IRC, and the Nursing team, at the "edge" of care in constant search for safe patient care, provide a field of visibility and strengthening of the category.

REFERENCES

- Richardson J. What's really happening with hospital bed numbers? *BMJ* [Internet]. 2017[cited em 2022 jan. 13];358:j4439. Available from: <https://doi.org/10.1590/0034-7167-2019-0349>.
- D'Aquino SF Proposta de modelo de referência para o processo de gestão de leitos hospitalares. Florianópolis: Universidade Federal de Santa Catarina; 2017.
- Ministério da Saúde (BR). Portaria nº3390, de 30 de dezembro de 2013. Institui a Política Nacional de Atenção Hospitalar (PNHOSP) no âmbito do Sistema Único de Saúde (SUS), estabelecendo-se as diretrizes para a organização do componente hospitalar da Rede de Atenção à Saúde (RAS) [Internet]. Brasília: MS: 2013[cited em 2021 aug. 10]. Available from: http://bvsms.saude.gov.br/bvs/sau-delegis/gm/2013/prt3390_30_1_2_2013.html
- Soares VS. Análise dos núcleos internos de regulação hospitalar de uma capital. *Rev Gest Econ Saúde* [Internet]. 2017[cited em 2020 fev. 15];15(3):339-4. Available from: <https://doi.org/10.1590/S1679-45082017GS3878>
- National Patient Safety Foundation (EUA). Free from harm: accelerating patient safety improvement fifteen years after To Err is Human: report of an expert panel convened [Internet]. Boston, MA: National Patient Safety Foundation; 2015[cited em 2021 aug. 15]. Available from: <https://psnet.ahrq.gov/issue/free-harm-accelerating-patient-safety-improvement-fifteen-years-after-err-human>
- Allen D. Inside 'bed management': ethnographic insights from the vantage point of UK hospital nurses. *Sociol Health Illn* [Internet]. 2015[cited em 2021 aug. 15];37(3):370-84. Available from: <https://pubmed.ncbi.nlm.nih.gov/25524505/>
- Flynn R, Newton AS, Rotter T, Hartfield D, Walton S, Fiander M, Scott SD. The sustainability of Lean in pediatric healthcare: a realist review. *BMC* [Internet]. 2018[cited em 2020 aug. 15];7:137. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6134523/pdf/13643_2018_Article_80_0.pdf
- Borges F, Bernardino E, Stegani MM, Tonini NS. Performance of nurses in the bed management service of a teaching hospital. *Rev Bras Enferm* [Internet]. 2020[cited em 2020 aug. 15];73(4):e20190349. Available from: <https://www.scielo.br/j/reben/a/qRzsNn7gmX4h4myRFDdRrtc/?format=pdf&lang=en>
- Ministério da Saúde (BR). Projeto Lean nas Emergências: redução das superlotações hospitalares [Internet]. Brasília: MS; 2020[cited em 10 mar. 2021]. Available from: <http://saude.gov.br/saude-de-a-z/projeto-lean-nas-emergencias#metodologia>
- Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research: a 32-item checklist for interviews and focus groups. *Int J Qual Heal Care* [Internet]. 2018[cited em 2021 nov. 13];19(6):349-57. Available from: <https://doi.org/10.1093/intqhc/mzm042>
- Nascimento LCN, Souza TV, Oliveira ICS, Moraes JRMM, Aguiar RCB, Silva LF. Theoretical saturation in qualitative research: an experience report in interview with schoolchildren. *Rev Bras Enferm* [Internet]. 2018[cited em 2020 aug. 15];71(1):228-33. Available from: <https://doi.org/10.1590/0034-7167-2016-0616>
- Salviati ME. Manual do Aplicativo Iramuteq (versão 0.7 Alpha 2 e R Versão 3.2.3) [Internet]. Planaltina, DF; 2017[cited em 2020 nov. 15]. Available from: <http://www.iramuteq.org/documentation/fichiers/anexo-manual-do-aplicativoiramuteq-par-maria-elisabeth-salviati>
- Camargo BV, Justo AM. Tutorial para uso do software de análise textual IRAMUTEQ [Internet]. Florianópolis: UFSC; 2016[cited em 2016 aug. 20]. Available from: http://www.iramuteq.org/documentation/fichiers/Tutorial%20IRaMuTeQ%20em%20portugues_17.03.2016.pdf
- Acauan LV, Abrantes CV, Stipp MAC, Trotte LAC, Paes GO, Queiroz ABA. Use of the Iramuteq® software for qualitative data analysis in Nursing: a reflective essay. *REME - Rev Min Enferm* [Internet]. 2020[cited em 2021 sept. 1];24:e-1326. Available from: <http://www.revenf.bvs.br/pdf/reme/v24/1415-2762-reme-24-e-1326.pdf>
- Creswell JW. *Investigação Qualitativa: projeto de pesquisa escolhendo entre cinco abordagens*. 3ª ed. São Paulo: Penso Editora, 2014.
- Saleh MYN, Al-Amer R, Al Ashram SR, Dawani H, Randall S. Exploring the lived experience of Jordanian male nurses: A phenomenological study. *Nurs Outlook* [Internet]. 2020[cited em 2021 aug. 19];68(3):313-23. Available from: <https://doi.org/10.1016/j.outlook.2019.10.007>
- Kowalski SL, Anthony M. CE: Nursing's Evolving Role in Patient Safety. *Am J Nurs* [Internet]. 2017[cited em 2021 may. 18];117(2):34-48. Available from: <https://doi.org/10.1097/01.naj.0000512274.79629.3c>
- Pecoraro F, Clemente F, Luzi D. The efficiency in the ordinary hospital bed management in Italy: an in-depth analysis of intensive care unit in the areas affected by COVID-19 before the outbreak. *PLoSOne*

- [Internet]. 2020[cited em 2020 aug. 15];15(9):e0239249. Available from: <https://doi.org/10.1371/journal.pone.0239249>
19. Abedian S, Bitaraf E, Askari M. Advantages of a Web-Based Real-Time Bed Management System for Hospital Admission Monitoring in Iran. *Stud Health Technol Inform* [Internet]. 2018[cited em 2020 aug. 15]; 247:536-40. Available from: <https://pubmed.ncbi.nlm.nih.gov/29678018/>
 20. Hunt-O'Connor C, Moore Z, Patton D, Nugent L, Avsar P, O'Connor T. The effect of discharge planning on length of stay and readmission rates of older adults in acute hospitals: a systematic review and meta-analysis of systematic reviews. *J Nurs Manag* [Internet]. 2021[cited em 2021 aug. 20]. Available from: <https://doi.org/10.1111/jonm.13409>
 21. Alves RM. Proposta de melhoria no processo de gestão das filas cirúrgicas do Hospital Universitário de Brasília: integrando a abordagem lean healthcare e a dinâmica de sistemas [dissertação]. Brasília: Universidade de Brasília; 2018[cited em 2021 aug. 15]. Available from: https://repositorio.unb.br/bitstream/1048n2/34937/1/2018_RodrigoMagalh%C3%A3esAlves.pdf
 22. Wasgen AM, Terres MS, Machado BFH. O impacto do gerenciamento de leitos na gestão hospitalar. *Rev Hospitalidade* [Internet]. 2019[cited em 2021 aug. 10];16(2):1-49. Available from: <https://doi.org/10.21714/2179-9164.2019.v16n2.002>
 23. Oliveira AC. Nursing challenges in the face of the COVID19 pandemic. *REME - Rev Min Enferm* [Internet]. 2020[cited 2021 aug. 20];24:e-1302. Available from: <http://reme.org.br/artigo/detalhes/1448>. Available from: <http://dx.doi.org/10.5935/1415-2762.20200032>
 24. Portela MC, Graboys V, Travassos C. Matriz Linha de Cuidado COVID-19 na Rede de Atenção à Saúde. *Observatório COVID-19. Rio de Janeiro: Fiocruz; 2020*[cited em 2021 aug. 20];1-15. Available from: <https://www.resbr.net.br/wp-content/uploads/2020/07/Matriz.pdf>
 25. Faria E, Costa Karl KRA, Santos MA, Fumio MK. Nova abordagem de gerenciamento de leitos associada à agenda cirúrgica. *Rev Adm Saúde* [Internet]. 2010[cited em 2021 aug. 15];12(47):63-70. Available from: www.cqh.org.br/portal/pag/anexos/baixar.php?p_ndoc=207&p_nanexo=286
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