

ANALYSIS OF THE PRESSURE INJURY PREVENTION PROTOCOL IN THE CONTEXT OF PATIENT SAFETY

ANÁLISIS DEL PROTOCOLO DE PREVENCIÓN DE LESIONES POR PRESIÓN EN EL MARCO DE LA SEGURIDAD DEL PACIENTE

ANÁLISE DO PROTOCOLO DE PREVENÇÃO DE LESÃO POR PRESSÃO NO CONTEXTO DA SEGURANÇA DO PACIENTE

¹Cynara de Aguiar Alves²Maria Fernanda Vital de Oliveira³Renata Côgo Costa⁴Alexandre Morais⁵Andressa Garcia Nicole⁶Susana Bubach⁷Wanêssa Lacerda Poton⁸Andréia Soprani dos Santos

¹Universidade Federal do Espírito Santo, Departamento de Ciências da Saúde, São Mateus, ES, Brasil.
<https://orcid.org/0009-0008-1734-2396>

²Universidade Federal do Espírito Santo, Departamento de Ciências da Saúde, São Mateus, ES, Brasil.
<https://orcid.org/0009-0009-1392-569>

³Universidade Federal do Espírito Santo, Departamento de Ciências da Saúde, São Mateus, ES, Brasil.
<https://orcid.org/0009-0005-4280-2129>

⁴Universidade Federal do Espírito Santo, Departamento de Ciências da Saúde, São Mateus, ES, Brasil.
<https://orcid.org/0000-0002-7833-7936>

⁵Universidade Federal do Espírito Santo, Departamento de Ciências da Saúde, São Mateus, ES, Brasil.
<https://orcid.org/0000-0003-1791-0580>

⁶Universidade Federal do Espírito Santo, Departamento de Ciências da Saúde, São Mateus, ES, Brasil.
<https://orcid.org/0000-0002-7190-5275>

⁷Universidade de Vila Velha, Departamento de Medicina, Vila Velha, ES, Brasil. <https://orcid.org/0000-0001-5849-0653>

⁸Universidade Federal do Espírito Santo, Departamento de Ciências da Saúde, São Mateus, ES, Brasil.
<https://orcid.org/0000-0002-4377-6517>

Corresponding Author**Cynara de Aguiar Alves**

Rua Girassol, CEP: 29980-000.

Pinheiros – ES, Brazil.

Contact: +55 (27) 998358192.

E-mail: cynaraaguiar23@gmail.com

ABSTRACT

Objective: to analyze the indicators of the pressure injury prevention protocol in the context of patient safety. **Method:** this is a cross-sectional study carried out in the hospitalization sectors of a state hospital, located in the northern region of Espírito Santo. The study sample consisted of all records of patients admitted to the hospital's inpatient departments containing information on the indicators of the pressure injury prevention protocol. Descriptive statistics were performed with univariate analyzes of all variables through prevalence calculations. **Results:** there was a zero prevalence (0%) in indicators related to assessment on admission, daily assessment, risk classification and record of preventive care for pressure injuries at all times analyzed. However, there was a higher prevalence of patients and companions aware of the risk of pressure injuries. Despite this, there was a predominance of pressure injury prevalence, which reached up to 28.6%. **Conclusion:** it is observed in this study that the pressure injury prevention protocol still lacks effective implementation, as well as greater adherence in the health team's work process.

Keywords: Patient Safety; Pressure Ulcer; Health Assistance; Protocol.

RESUMEN

Objetivo: analizar los indicadores del protocolo de prevención de lesiones por presión en el contexto de la seguridad del paciente. **Método:** se trata de un estudio transversal realizado en los sectores de internación de un hospital estatal, ubicado en la región norte de Espírito Santo. La muestra del estudio consistió en todos los registros de pacientes ingresados en los servicios de hospitalización del hospital que contenían información sobre los indicadores del protocolo de prevención de lesiones por presión. Se realizó estadística descriptiva con análisis univariados de todas las variables mediante cálculos de prevalencia. **Resultados:** se observó una prevalencia cero (0%) en los indicadores relacionados con la valoración al ingreso, valoración diaria, clasificación de riesgo y registro de cuidados preventivos de lesiones por presión en todos los momentos analizados. Sin embargo, hubo una mayor prevalencia de pacientes y cuidadores conscientes del riesgo de sufrir lesiones por presión. A pesar de ello, predominó la prevalencia de lesiones por presión, que alcanzó hasta un 28,6%. **Conclusión:** este estudio muestra que el protocolo de prevención de lesiones por presión aún carece de una implementación efectiva, así como de una mayor adhesión en el proceso de trabajo del equipo de salud. **Palabras clave:** Seguridad del Paciente; Úlcera por Presión; Atención a la Salud; Protocolo.

RESUMO

Objetivo: analisar os indicadores do protocolo de prevenção de lesão por pressão no contexto da segurança do paciente. **Método:** trata-se de um estudo transversal realizado nos setores de internação de um hospital da rede estadual, localizado na região norte do Espírito Santo. A amostra do estudo foi constituída por todos os registros de pacientes admitidos nos setores de internação do hospital contendo informações sobre os indicadores do protocolo de prevenção de lesão por pressão. Foram realizadas estatísticas descritivas com análises univariadas de todas as variáveis por meio de cálculos de prevalências. **Resultados:** observou-se uma prevalência nula (0%) nos indicadores relacionados à avaliação na admissão, à avaliação diária, à classificação de risco e ao registro de cuidados preventivos para lesão por pressão em todos os momentos analisados. Contudo, verificou-se uma maior prevalência de pacientes e acompanhantes cientes do risco de lesão por pressão. Apesar disso, houve um predomínio de prevalências de lesão por pressão, que atingiram até 28,6%. **Conclusão:** observa-se nesse estudo que o protocolo de prevenção de lesão por pressão ainda carece de efetiva implantação, bem como de uma maior adesão no processo de trabalho da equipe de saúde.

Palavras-chave: Segurança do Paciente; Lesão por Pressão; Assistência à Saúde; Protocolo.

Submission: 08-03-2025**Approval:** 26-05-2025

INTRODUCTION

Pressure Injury (PI) is defined by the National Pressure Ulcer Advisory Panel (NPUAP) and the European Pressure Ulcer Advisory Panel (EPUAP) (2016) as a compromise of the skin and/or underlying soft tissue, commonly associated with areas of contact with bony prominences or the use of medical devices and other appliances. The injury arises due to intense and/or prolonged pressure, combined with shear⁽¹⁾.

In the context of patient safety, pressure injury is considered an Adverse Event (AE) that represents one of several incidents to which hospitalized patients are susceptible, which can lead to partial or total destruction of tissue⁽²⁾⁽²⁾.

Injuries can be classified based on the extent of tissue damage, and can be categorized as follows: stage 1, stage 2, stage 3, stage 4, unclassifiable pressure injury, deep tissue pressure injury. In addition, there are two additional definitions, which are: medical device-related pressure injury and mucous membrane pressure injury. It is worth noting that pressure injuries to mucous membranes cannot be classified into stages due to the anatomy of the tissue⁽¹⁾.

In April 2013, the Ministry of Health (MS) / Minister's Office (GM) Ordinance No. 529/2013 established the National Patient Safety Program (PNSP), with the aim of carrying out educational actions and initiatives to promote patient quality and safety in different areas of care, in addition to organizing health services

through the implementation of Patient Safety Centers (NSPs)⁽³⁾.

The NSP is responsible for preparing a patient safety plan in health services, in which it presents and characterizes the strategies and actions defined for the execution of the stages of promotion, prevention and reduction of adverse events associated with care, from admission to transfer, discharge or death of the individual in the service, in addition to adherence to patient safety protocols⁽⁴⁾.

The defined protocols establish actions and strategies to improve safety in healthcare settings, including patient identification protocols; hand hygiene practices in healthcare services; pressure injury prevention; fall prevention; safe surgery; and safety in prescribing, using, and administering medications. These protocols must be established in healthcare services through the NSP, with the purpose of building a safe healthcare practice, reducing errors and adverse events⁽⁴⁾.

The National Health Surveillance Agency (Anvisa), through the Collegiate Board Resolution (RDC), No. 36, of July 25, 2013, establishes that these protocols are instruments that will build a safe healthcare practice, and are also a mandatory component in patient safety plans in healthcare facilities⁽⁵⁾.

In Brazil, between 2014 and 2022, incidents related to healthcare, as reported by the Patient Safety Centers (NSP), affected 1,100,352

hospitalized patients, 223,378 (20.30%) corresponded to notifications of pressure injuries, being classified as the second most frequently observed type of event in Brazilian health services. Approximately 26,735 never events were also identified - those that should never happen in health services, of which 19,307 (72.21%) were due to stage 3 PU and 5,769 (21.57%) resulted from stage 4 PU. During the same period, 5,358 deaths were reported, of which 65 patients had pressure injuries as a factor that directly contributed to death ⁶⁽⁶⁾.

Pressure injuries are an important indicator of the quality of care for health services and are one of the components of patient safety. Their development derives from the accumulation of multiple factors, such as biomechanical, physiological and environmental factors that together predispose patients to a lower or higher risk of developing PU. The occurrence of the injury causes pain and discomfort for the patient and their family, and can delay their recovery. In addition, treatment generates an increase in the demand for the work processes of the multidisciplinary team and costs for the institution ⁽⁷⁾.

In this sense, it is essential that health services are prepared to assess patients susceptible to developing PU, and that health actions allow for the prevention and reduction of reporting of this adverse event. Furthermore, these actions comprise the strategies linked to the patient safety protocols, recommended by the NSP. In view of the above, this study aimed to analyze the indicators of the pressure injury

prevention protocol in the context of patient safety.

METHODS

This is a cross-sectional study conducted in the inpatient wards of a state hospital located in the northern region of Espírito Santo, covering the following areas: medical clinics 1, 2 and 5, surgical and orthopedic (UI 3), pediatrics (UI 4); Mixed Care Unit (UMA) and Intensive Care Unit (ICU 1, 2, 3 and 4). The research was developed based on secondary data collected from the hospital database, medical records, adverse event notification forms and investigation of hospitalized patients, in addition to indicators from the Braden scale, recommended in the pressure injury prevention protocol.

The study sample consisted of all records of patients admitted to the hospital inpatient wards containing information on the indicators of the pressure injury prevention protocol. Completed files and medical records were included, and those with incomplete information were reviewed using the systematic on-site observation technique, and those that did not contain any information were excluded. Data collection was performed at three different times in order to observe whether or not there were discrepancies in relation to the work process throughout the months of August to October 2023.

The variables of interest were: number of patients assessed upon admission; number of

patients assessed daily; number of patients classified as to the risk of PU; number of patients and companions aware of the risk of PU; number of patients flagged as to the risk of PU (bracelet, plate); number of patients using cushions; number of patients who underwent position changes; number of patients with records of preventive care for PU; number of patients with pressure injuries.

The data were entered into an Excel spreadsheet and transferred to a statistical database. Descriptive statistics were performed with univariate analyses of all variables through prevalence calculations. A general compilation of the indicator No. of patients with pressure injuries was made, based on the prevalence of the total number of patients with pressure injuries in the three moments divided by the total number of patients hospitalized in the sectors in the three moments, considering 95% confidence intervals (95%CI). The results are presented in Tables and Graphs format. All data analysis was conducted using the Stata 17.0 statistical package.

The study is part of the research “Analysis of Patient Safety in Health Care”, funded by the Espírito Santo Research and Innovation Support Foundation (Fapes)⁽⁸⁾, Fapes call for proposals No. 14/2022, valid from December 2022 to November 2023. The study was approved by the Research Ethics Committee of the Federal University of Espírito Santo, São Mateus campus, under opinion No. 6,198,259, in compliance with Resolution 466/12 of the National Health Commission, which deals with research involving human beings⁽⁹⁾.

RESULTS

Tables 1, 2 and 3 show the performance of the indicators related to the pressure injury prevention protocol, analyzed at three different collection times. In all periods evaluated, there was zero prevalence (0%) in the following indicators: number of patients evaluated at admission, number of patients evaluated daily, number of patients classified according to the risk of PU, number of patients with a record of preventive care for PU.

Table 1- Indicators of the Pressure Injury Prevention Protocol according to the National Patient Safety Program, at the First Time of Collection. Espírito Santo, Brazil, 2024.

Variables	n (%) Hospital Sectors									
	UI ^a 1	UI 2	UI 3	UI 4	UI 5	UTI ^b 1	UTI 2	UTI 3	UTI 4	UMA ^c
No. of patients assessed on admission	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	10 (100%)	8 (100%)	4 (50%)	0 (0%)

No. of patients evaluated daily	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	10 (100%)	8 (100%)	4 (50%)	0 (0%)
No. of patients classified according to the risk of LPP	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	10 (100%)	8 (100%)	4 (50%)	0 (0%)
No. of patients and companions aware of the risk of LPP	10 (90,90%)	32 (100%)	28 (100%)	23 (100%)	19 (100%)	0 (0%)	2 (20%)	0 (0%)	0 (0%)	11 (57,9%)
No. of patients flagged for risk of LPP (bracelet, plate)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	8 (80%)	3 (37,5%)	7 (87,5%)	0 (0%)
No. of patients using cushions	0 (0%)	6 (18,8%)	2 (7,1%)	0 (0%)	3 (15,8%)	10 (100%)	8 (80%)	4 (50%)	4 (50%)	1 (5,3%)
No. of patients with position change performed	0 (0%)	9 (28,1%)	27 (96,4%)	23 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (47,4%)
No. of patients with preventive care records for LPP	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	10 (100%)	8 (100%)	6 (75%)	0 (0%)
No. of patients with pressure injuries	5 (45,5%)	5 (15,6%)	2 (7,1%)	0 (0%)	1 (5,3%)	2 (20%)	1 (10%)	2 (25%)	2 (25%)	2 (10,5%)
Total No. of Patients	11	32	28	23	19	10	10	8	8	19

aUI: Inpatient Unit; bUTI: Intensive Care Unit; cUMA: Mixed Care Unit.

Source: Prepared by the author.

The highest prevalence of patients and companions aware of the risk of pressure injury was recorded in the Inpatient Units, where all patients were duly informed (100%), a result also observed in the Mixed Care Unit (Table 2).

On the other hand, when analyzing the indicator related to signaling the risk of PU (bracelets, plaques), only Intensive Care Unit 1 achieved 100% coverage in the first two collection moments (Tables 1 and 2).

Table 2 - Indicators of the Pressure Injury Prevention Protocol according to the National Patient Safety Program, at the Second Collection Moment. Espírito Santo, Brazil, 2024.

Variables	n (%) Hospital Sectors									
	UI ^a 1	UI 2	UI 3	UI 4	UI 5	UTI ^b 1	UTI 2	UTI 3	UTI 4	UMA ^c
No. of patients assessed on admission	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (87,5%)	9 (90%)	7 (70%)	9 (100%)	0 (0%)
No. of patients evaluated daily	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (87,5%)	0 (0%)	0 (0%)	9 (100%)	0 (0%)
No. of patients classified according to the risk of LPP	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (87,5%)	9 (90%)	7 (70%)	9 (100%)	0 (0%)
Number of patients and companions aware of the risk of LPP	9 (100%)	32 (100%)	32 (100%)	16 (100%)	20 (100%)	0 (0%)	0 (0%)	0 (0%)	2 (22,2%)	7 (100%)
No. of patients flagged for risk of LPP (bracelet, plate)	0 (0%)	1 (3,1%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)	4 (40%)	4 (40%)	7 (77,7%)	0 (0%)
No. of patients using cushions	2 (22,2%)	5 (15,6%)	1 (3,1%)	0 (0%)	1 (5 %)	8 (100%)	9 (90%)	8 (80%)	7 (77,7%)	0 (0%)
No. of patients with position change	0 (0%)	24 (75%)	31 (96,9%)	16 (100%)	8 (40%)	0 (0%)	0 (0) %	0 (0%)	0 (0%)	0 (0%)

performed

No. of patients with preventive care records for LPP	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)	10 (100%)	10 (100%)	9 (100%)	0 (0%)
No. of patients with pressure injuries	1 (11,1%)	5 (15,6%)	0 (0%)	0 (0%)	1 (5 %)	2 (25%)	2 (20%)	3 (30%)	1 (11,1%)	0 (0%)
Total No. of Patients	9	32	32	16	20	8	10	10	9	7

aUI: Inpatient Unit; bUTI: Intensive Care Unit; cUMA: Mixed Care Unit.

Source: Prepared by the author.

In the indicator Number of patients using cushions, only ICU 1 achieved 100% adherence (Tables 1 and 2). Regarding the indicator Number of patients with position changes, a zero prevalence (0%) was observed both in the first and second moments of the analysis. However, in the third moment, there was a variation, with the adoption of the practice in six sectors, as shown in (Tables 1, 2 and 3).

Table 3 - Indicators of the Pressure Injury Prevention Protocol according to the National Patient Safety Program, at the Third Moment of Collection. Espírito Santo, Brazil, 2024.

Variables	n (%) Hospital Sectors									
	UI ^a 1	UI 2	UI 3	UI 4	UI 5	UTI ^b 1	UTI 2	UTI 3	UTI 4	UMA ^c
No. of patients assessed on admission	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)	9 (100%)	9 (90%)	4 (40%)	0 (0%)
No. of patients evaluated daily	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)	9 (100%)	9 (90%)	4 (40%)	0 (0%)
No. of patients classified according to	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)	9 (90%)	9 (90%)	4 (40%)	0 (0%)

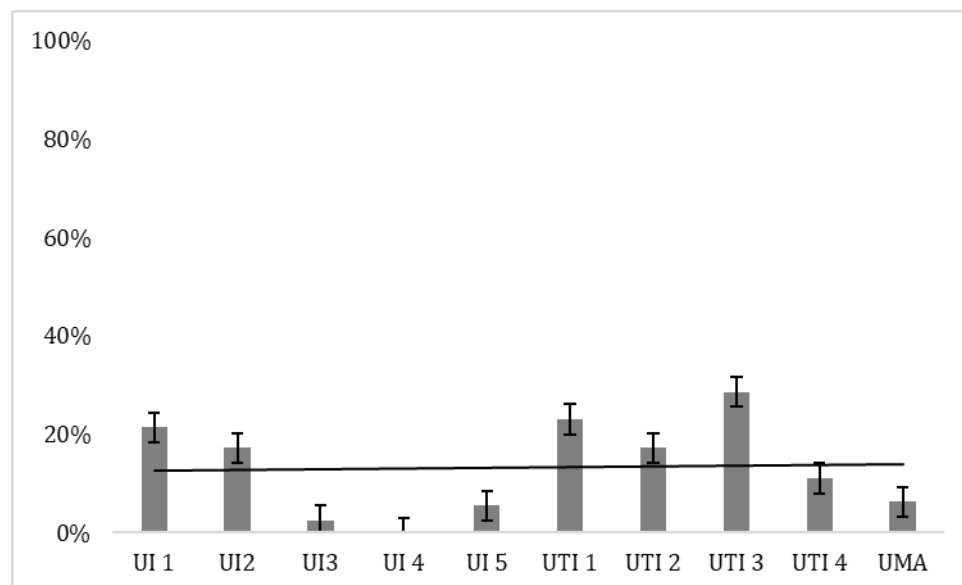
the risk of LPP

No. of patients and companions aware of the risk of LPP	8 (100%)	35 (100%)	21 (100%)	15 (100%)	34 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
No. of patients flagged for risk of LPP (bracelet, plate)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (75%)	9 (100%)	8 (80%)	5 (50%)	0 (0%)
No. of patients using cushions	0 (0%)	6 (17,1%)	0 (0%)	0 (0%)	1 (2,9 %)	5 (62,5%)	2 (22,2%)	5 (50%)	1 (10%)	0 (0%)
No. of patients with position change performed	8 (100%)	21 (60%)	19 (90,5%)	15 (100%)	19 (55,8%)	0 (0%)	0 (0) %	0 (0%)	0 (0%)	6 (100%)
No. of patients with preventive care records for LPP	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)	5 (55,5%)	7 (70%)	3 (30%)	0 (0%)
No. of patients with pressure injuries	0 (0%)	7 (20%)	0 (0%)	0 (0%)	2 (5,8%)	2 (25%)	2 (22,2%)	3 (30%)	0 (0%)	0 (0%)
Total No. of Patients	8	35	21	15	34	8	9	10	10	6

aUI: Inpatient Unit; bUTI: Intensive Care Unit; cUMA: Mixed Care Unit.

Source: Prepared by the author.

Regarding the indicator No. of patients with pressure injuries, it can be seen that all sectors recorded cases, with the exception of one sector (UI 4), as shown in Graph 1.

Graph 1 - No. of patients with pressure injuries

Source: Survey data, 2024.

DISCUSSION

The findings of this study reveal a significant deficit in the adherence of professionals to the pressure injury prevention protocol in hospital inpatient units, with partial adherence in Intensive Care Units (ICU), observed mainly in the records executed by nurses in nursing prescriptions and progress reports. This indicates that care for hospitalized patients has not been provided in a uniform and satisfactory manner in all sectors.

The pressure injury prevention protocol emerged as a mandatory implementation in Brazilian hospitals in 2013, with the aim of preventing the appearance of wounds, especially in patients with reduced mobility in bed⁽¹⁰⁾. Skin injuries impact the quality of life of patients and health services, increasing the need for specialized care, the likelihood of infection and other injuries, leading to increased length of hospital stay, resulting in greater pain for

patients, in addition to increased institutional costs⁽¹¹⁾.

It is noted that the hospital under study appears to demonstrate weakness in the application of the protocol, as evidenced by the indicator of Number of patients assessed upon admission to inpatient units, which presented a rate of 0%, which may compromise patient safety and the quality of care. Corroborating this observation, a study that verified nursing records related to PU revealed that, in 100% of cases, the risk assessment for PU was not performed upon admission, resulting in a prevalence of PU of 31.82% and an incidence of 11.36%⁽¹²⁾.

Care practice in the health environment is of fundamental importance, and care planning must be based on obtaining results that aid in the patient's recovery. For this, it is essential that it be carried out in a systematic and standardized manner⁽¹³⁾. In this sense, the establishment of the protocol in the health work process should be

applicable to all patients, especially those at risk, providing care measures for prevention and assessment of skin integrity, ensuring a quality service, with a view to patient safety⁽¹⁴⁾.

Furthermore, prevention guidelines highlight the importance of assessing the risk of PU, given the significant impact of these injuries on both the patient and the health service. This assessment is essential to identify patients at risk and allow the implementation of personalized preventive measures from the beginning⁽¹⁵⁾.

In this research, it was observed that the indicator Number of patients classified according to the risk of PU in the inpatient units showed a tendency of non-implementation throughout the evaluation period, suggesting a possible failure in the accurate identification of patients at high risk. This discrepancy jeopardizes the effectiveness of prevention and treatment strategies, highlighting the urgent need to improve protocols for assessing and monitoring the risk of PU⁽¹⁶⁾.

A study carried out to improve the quality of pressure injury prevention in an ICU showed that the initial quality assessment demonstrated a low level of compliance in preventive practices, with practically all criteria presenting rates below 50% ⁽¹⁷⁾. In this context, the importance of a detailed assessment by the nursing team is highlighted, which allows for the correct classification of each patient's risk and the adoption of individualized care strategies. These strategies include regular postural changes, the use of appropriate support surfaces, and the implementation of specific skin care.

Such measures contribute significantly to the prevention of pressure injuries, promoting a safer environment and care based on quality and patient safety⁽¹⁸⁾.

In turn, preventive care records for pressure injuries play a fundamental role in ensuring the quality of care and protecting patient safety. These records document the measures adopted to prevent the development of PUs and are essential for the continuous evaluation of the effectiveness of the strategies implemented ⁽¹⁹⁾. Regarding this indicator Number of patients with preventive care records for PU, this research identified that, in the first moment of the analysis, the ICUs reached 100% of preventive care records, except for ICU 4, which registered 75% of patients. In the second moment, all ICUs reached 100% of preventive care records. However, in the third moment there was a decrease in these records, reaching a prevalence of 30% (ICU 4). These results are corroborated by a study carried out in an ICU, which highlighted the importance of recording preventive measures, such as actions to hydrate the skin and protect bony prominences in all patients, with and without pressure injuries. The study also revealed that the recording of changes in decubitus was higher among patients without pressure injuries (29.54%). Among the treatment measures, it was observed that care for the injury was recorded in 57.14% of the medical records. These findings highlight the ongoing need to maintain the quality and consistency of preventive care records to ensure the

effectiveness of interventions and patient safety⁽¹²⁾.

Among the most widely used wound assessment instruments, the Braden scale stands out.

This instrument is widely used in hospitals in Brazil due to its ease of use and low cost, and is integrated into the systematization of nursing care. The scale consists of the analysis of six factors: sensory perception, activity, mobility, humidity, nutrition, friction and/or shear. The objective is to assist nurses in their clinical management and assess whether the patient is at risk of developing PU, highlighting the etiological factors involved⁽²⁰⁾.

In the hospital under study, the Braden and Braden Q scales are the agreed instrument for assessing the risk of PU in patients. Through the indicator Number of patients with pressure injuries, the predominance of PU was observed in nine of the ten sectors studied, with prevalence rates reaching up to 28.6% and recorded in all ICUs. This fact can be justified based on the severity of these patients' conditions, who are generally submitted to an induced coma and are on mechanical ventilation, using drains, probes and restricted to bed. An analysis performed to assess the risk of pressure injury revealed a prevalence of 13.5% (n=7) of cases. Based on the application of the Braden Scale, it was observed that 44.2% (n=23) of the patients were classified as having no risk, 21.2% (n=11) presented low risk, 9.6% (n=5) moderate risk, 21.2% (n=11) high risk and 3.8% (n=2)

were identified as having a very high risk for developing pressure injury⁽²¹⁾.

The application of PU prevention indicators is not observed homogeneously in all the sectors studied, since the predominance of the absence of assessment is identified in the inpatient/mixed units and, on the other hand, observed in the ICUs, suggesting a better established routine in these places. The absence of a standardized approach in all areas of the hospital implies failures in patient care and highlights the need to apply strategies to include the protocol in the work process⁽²²⁾.

It is worth noting that the NSP was implemented in the hospital under study in 2015, and only in 2022 did the hospital adhere to a project to strengthen quality and patient safety actions with the inclusion of care and administrative professionals to support the NSP. Even with the established actions, there is still a lack of uniformity between the sectors regarding the implementation of the PU prevention protocol. In line with this statement, a study that evaluated the potential and challenges of the NSP demonstrated that the centers face a series of difficulties in implementing actions aimed at patient safety in the hospital environment, among them the implementation and monitoring of effective protocols that guarantee patient safety and quality of care⁽²³⁾.

The data from this study also indicate the ongoing need for action in the prevention and management of PUs in all sectors of the hospital, especially in inpatient/mixed units, with the aim of reducing the incidence of these injuries and

improving the quality of care provided to patients. In turn, the knowledge of health professionals regarding the prevention protocol and risk assessment for the development of PU results in the formation of a qualified team and offers a solid basis for the care provided. Adherence to the protocol allows the identification of patients with a greater probability of developing PU, allowing the adoption of preventive measures to avoid the physical and emotional exhaustion of patients. This proactive approach aims to provide safe care and minimize the negative effects of pressure injuries⁽²⁴⁾.

In this context, the nurse becomes essential to ensure the implementation and application of the PU prevention protocol. Through health management, the nurse implements relevant strategies to establish adapted forms of care, taking into account the main trends and demands of their work process. These strategies are based on essential tools, including care protocols that facilitate care planning, support instruments that contribute to the quality of patient care, as they allow the systematization and standardization of nursing practice⁽²⁵⁾.

Thus, innovation in the nurse's work process, in terms of care management, especially in the articulation of new strategies, especially in the prevention and treatment of PUs, promotes humanized care for the patient. The protocol used by the nurse will result in safe management of their work process and will also promote qualified care practice⁽²⁶⁾. Implementing a

uniform protocol and promoting ongoing education for health professionals are essential steps to ensure that pressure injury prevention is effective in all inpatient units. In addition, standardizing practices can reduce complications and improve clinical outcomes for patients⁽²⁷⁾.

A limitation of the study is the incompleteness of information in the medical records and the reduced reporting of adverse events. On the other hand, the analysis was conducted in three stages, which allowed a comprehensive assessment of the implementation of the protocol in the inpatient sectors. It is recommended that future research address strategies to intensify the reporting of adverse events, improve the quality of data recorded in the medical records, and identify how the protocol is constructed and implementation and monitoring strategies are carried out.

CONCLUSION

This study shows that the PU prevention protocol still lacks effective implementation and greater adherence in the healthcare team's work process. The indicators point to the inefficiency of the PU prevention protocol implementation, which requires that management, the NSP and institutional leaders work towards a new strategy for implementing the protocol in inpatient units. The lack of a consistent and integrated practice is reflected in the occurrence rates of these injuries, indicating the urgent need for ongoing training of professionals, reinforcement of the supervision of adopted practices and greater

awareness among the team regarding the importance of prevention. In addition, it is necessary to implement monitoring and evaluation tools for the protocols in order to contribute to improving the effectiveness of preventive measures, ensuring the safety and quality of care provided to patients.

REFERENCES

1. Associação Brasileira de Estomaterapia; Associação Brasileira de Enfermagem em Dermatologia. Consenso NPUAP 2016: Classificação das lesões por pressão adaptado culturalmente para o Brasil [Internet]. São Paulo: SOBEST; SOBENDE; 2016 [citado 2024 fev 19]. Disponível em: https://sobest.com.br/wp-content/uploads/2020/10/CONSENSO-NPUAP-2016_traducao-SOBEST-SOBENDE.pdf
2. Brito MPS, Almeida RS, Vasconcelos EEC, Frazão CT, Bragato AGC, Andrade OV, et al. Notificação de eventos adversos na lesão por pressão em pacientes internados na UTI. *Rev Contemp* [Internet]. 2024 jan 31 [citado 2025 abr 14];4(1):4584-92.doi: <https://doi.org/10.56083/RCV4N1-252>
3. Ministério da Saúde (BR). Gabinete do Ministro. Portaria nº 529, de 1º de abril de 2013. Institui o Programa Nacional de Segurança do Paciente (PNSP) [Internet]. Brasília-DF: Ministério da Saúde; 2013 [citado 2024 jun 7]. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0529_01_04_2013.html
4. Ministério da Saúde (BR). Documento de referência para o Programa Nacional de Segurança do Paciente. Brasília: Ministério da Saúde; 2014. 40 p. [citado 2024 jun 17]. Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/documento_referencia_programa_nacional_seguranca.pdf
5. Brasil. Ministério da Saúde. Agência Nacional de Vigilância Sanitária. Resolução - RDC nº 36, de 25 de julho de 2013. Institui ações para a segurança do paciente em serviços de saúde e dá outras providências [Internet]. Brasília: Anvisa; 2013 [citado 2024 jun 17]. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/anvisa/2013/rdc0036_25_07_2013.html
6. Ministério da Saúde (BR). Agência Nacional de Vigilância Sanitária. Nota técnica GVIMS/GGTES/Anvisa nº 05/2023 [Internet]. Brasília-DF: Ministério da Saúde; 2023 ago 28 [citado 2024 jun 7]. Disponível em: <https://www.gov.br/anvisa/pt-br/centraisdeconteudo/publicacoes/servicosdesaude/notas-tecnicas/notas-tecnicas-vigentes/nota-tecnica-gvims-ggtes-anvisa-no-05-2023-praticas-de-seguranca-do-paciente-em-servicos-de-saude-prevencao-de-lesao-por-pressao>
7. Nascimento FC, Sousa FKP, Aquino LMR, Pereira AS, Coelho YMM, Nunes JG, et al. Impactos sociais e econômicos das lesões por pressão em unidades de terapia intensiva: uma análise narrativa. *OLEL* [Internet]. 2024 fev 21 [citado 2025 abr 14];22(2):e3375. doi: <https://doi.org/10.55905/oelv22n2-181>
8. Fundação de Amparo à Pesquisa e Inovação no Espírito Santo (Fapes). Vitória: Fapes; 2023 [citado 2023 maio 19]. Disponível em: <https://fapes.es.gov.br/Not%C3%ADcia/mais-de-50-projetos-de-pesquisa-cientifica-tecnologica-e-de-inovacao-sao-selecionados-no-edital-mulheres-na-ciencia-ii>
9. Conselho Nacional de Saúde (BR). Resolução nº 466, de 12 de dezembro de 2012 [Internet]. Brasília: CNS; 2012 [citado 2023 maio 19]. Disponível em: <https://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf>
10. Ministério da Saúde (BR). Agência Nacional de Vigilância Sanitária; Fiocruz. Anexo 2 - Protocolo para prevenção de úlcera por pressão [Internet]. Brasília (DF): Ministério da Saúde; 2013 [citado 2024 jun 7]. Disponível em: <https://www.gov.br/saude/pt->

br/composicao/saes/dahu/pnsp/protocolos-basicos/protocolo-ulcera-por-pressao.pdf/view

11. Nunes de Sousa JE, Santiago RF, Silva Sousa BC, Alves Alencar Pereira LM, Oliveira Bastos A, dos Santos Silva A, et al. Escalas utilizadas para mensurar o risco de lesão por pressão em pacientes hospitalizados: uma revisão. *Rev Enferm Atual In Derme* [Internet]. 2023 maio 23 [citado 2025 abr 14];97(2):e023059. Disponível em: <https://doi.org/10.31011/reaid-2023-v.97-n.2-art.1573>
12. Almeida GHD, Dantas GH de O, Bernardo Nóbrega LM, Morais JLP de, Souza APMA de, Santos IB da C, et al. Registros de enfermagem sobre lesão por pressão em uma unidade de terapia intensiva. *Rev Enferm Atual In Derme* [Internet]. 2023 ago 15 [citado 2025 abr 14];97(3):e023148. Disponível em: <https://doi.org/10.31011/reaid-2023-v.97-n.3-art.1927>
13. Barbosa FC, Campos KFC, Silva PRM, Vieira A, Gondim IO, Orlando CR de P, et al. Planejamento em saúde: definição e conceito. *CLCS* [Internet]. 2024 dez 27 [citado 2025 abr 15];17(13):e14036. Disponível em: <https://doi.org/10.55905/revconv.17n.13-456>
14. Braga IA, Miranda RS, Sanches MA de M, Passos LBS, de Paula Júnior NF, Andrade CLF. Implantação de protocolo de prevenção de lesão por pressão em hospital universitário de grande porte. *ARE* [Internet]. 2025 mar 5 [citado 2025 abr 16];7(3):10390-404. doi: <https://doi.org/10.56238/arev7n3-017>
15. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel, Pan Pacific Pressure Injury Alliance. Prevenção e tratamento de úlceras/lesões por pressão: guia de consulta rápida. Haesler E, editor. EPUAP/NPIAP/PPPIA; 2019.
16. Jesus DDS de, Rodrigues AS, Neves KC do, Santos LCA dos, Ribeiro WA, Fassarella BPA, et al. Ações de enfermagem na prevenção e tratamento de lesões por pressão em unidade de terapia intensiva. *Res Soc Dev* [Internet]. 2023 jan 1 [citado 2025 abr 30];12(1):e6312139331. Disponível em: <https://doi.org/10.33448/rsd-v12i1.39331>
17. Martins SLL de A, Cabral MAL, Fernandes FCG de M, Policarpo HSPA, Fonseca JF da, Leal NTB, et al. Improvement in the quality of pressure injury prevention in an intensive care unit. *Texto Contexto Enferm* [Internet]. 2024 [citado 2025 abr 30];33:e20230396. Disponível em: <https://doi.org/10.1590/1980-265X-TCE-2023-0396n>
18. Montenegro FMB, Silva GP da, Costa Neto JF da, Moura SGF, Ramos ALBP, Nogueira E da R, et al. Assistência de enfermagem na prevenção e tratamento de lesões por pressão na unidade de terapia intensiva: novas tecnologias na prática assistencial. *Rev CPAQV* [Internet]. 2025 fev 16 [citado 2025 abr 30];17(1):14. Disponível em: <https://doi.org/10.36692/V17N1-36R>
19. Baretta C, Ascari RA, Leal SMC, Silva OM, Dallacosta FM. Validação da estrutura de curso sobre avaliação e registro de lesão por pressão para enfermeiros. *Rev Enferm Atual In Derme* [Internet]. 2023 set 30 [citado 2025 maio 1];97(3):e023145. Disponível em: <https://doi.org/10.31011/reaid-2023-v.97-n.3-art.1594>
20. Diniz CAS, Delboni MCC, Zemolin CM, Barbisan F. Percepção de enfermeiros quanto à aplicabilidade da Escala de Braden em pessoas idosas hospitalizadas. *REAS* [Internet]. 2024 nov 30 [citado 2025 maio 1];24(11):e17975. Disponível em: <https://doi.org/10.25248/reas.e17975.2024>
21. Nóbrega Mota Eulálio RB, Gomes Ferreira L, Leitão Cruz A, Cavalcante Silveira G, dos Santos Bezerra NK, da Silva PS, et al. Avaliação do risco de lesão por pressão em idosos institucionalizados. *Rev Enferm Atual In Derme* [Internet]. 2025 mar 12 [citado 2025 maio 8];99(1):e025021. Disponível em: <https://doi.org/10.31011/reaid-2025-v.99-n.1-art.2439>

22. Santos EO dos, Takashi MH. Implantação dos protocolos de segurança do paciente em unidade de terapia intensiva: revisão integrativa. *Rev Inic Cient* [Internet]. 2023 abr 20 [citado 2025 maio 8];12(2):260-76. Disponível em: <https://doi.org/10.36239/revisa.v12.n2.p260a276>
23. Portugal FB, Coslop S, Costa MSC, Wandekoken KD. Núcleos de segurança do paciente no estado do Espírito Santo, Brasil: potencialidades e desafios. *Rev Enf Contemp* [Internet]. 2024 mar 20 [citado 2025 maio 8];13:e5453. Disponível em: <https://doi.org/10.17267/2317-3378rec.2024.e5453>
24. Lima EFB, Lima VSB. A importância do cuidado da lesão por pressão pelo profissional de enfermagem qualificado em um hospital particular do Sertão Pernambucano. *RMS* [Internet]. 2024 fev 21 [citado 2025 maio 8];6(1):122-30. Disponível em: <https://doi.org/10.37115/rms.v6i1.716>
25. Miranda ESS, Chaves NML, Barroso LPS, Santos VRC, Sousa RF, Costa NSS, et al. O papel do enfermeiro na prevenção de lesões por pressão em UTI adulto. *REAS* [Internet]. 2024 mar 26 [citado 2025 maio 8];24(3):e16479. Disponível em: <https://doi.org/10.25248/reas.e16479.2024>
26. Oliveira HF de, Oliveira ASFSR de, Silva RA da, Azevedo SL de, Souza CDSB, Souza CJ de, et al. Gerenciamento do cuidado de enfermagem a paciente com lesão por pressão na Unidade de Terapia Intensiva. *Glob Acad Nurs* [Internet]. 2023 out 31 [citado 2025 maio 8];4(Sup.1):e350. Disponível em: <https://doi.org/10.5935/2675-5602.20200350>
27. Rodrigues AI, de Vecchi SR, Lopes EO, da Rosa VHJ. Cuidados de enfermagem na prevenção de lesões por pressão em unidade de terapia intensiva (UTI). *OLEL* [Internet]. 2023 dez 13 [citado 2025 maio

8];21(12):25388-403. Disponível em: <https://doi.org/10.55905/oelv21n12-105>

Funding and Acknowledgements

This study was funded by the Espírito Santo Research and Innovation Support Foundation (FAPES), FAPES call for proposals no. 14/2022, valid from December 2022 to November 2023, to whom we express our sincere gratitude for the essential support in carrying out this research. FAPES funding was crucial for the development and analysis of the data, enabling the investigation of topics of great relevance to public health in the state. We thank them for their trust and for their continued support for science and innovation, which contributed significantly to the execution and success of this work.

Authorship criteria (authors' contributions)

Alves CA, Oliveira MFV, Costa RC, Santos AS: 1. contributed substantially to the conception and/or planning of the study;

Alves CA, Oliveira MFV, Costa RC, Santos AS: 2. in obtaining, analyzing and/or interpreting the data;

Alves CA, Oliveira MFV, Costa RC, Morais A, Nicole AG, Bubach S, Poton WL, Santos AS: 3. as well as in the writing and/or critical review and final approval of the published version.

Declaration of conflict of interests

Nothing to declare.

Scientific Editor: Francisco Mayron Morais Soares. Orcid: <https://orcid.org/0000-0001-7316-2519>