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# The change of decubitus in preventing pressure injury in patients in intensive care

**ABSTRACT** | The aim of this study was to identify the reasons that may be related to the difficulty of changing the position of patients in intensive care. The methodology used was the bibliographic search of articles published between 2013 and 2019, searched at the Nursing VHL and Google Scholar. According to the studies analyzed, the nurse is the professional responsible not only for the care provided, but for the assessment of the risk factors for PI on admission, skin integrity and the results obtained with the actions taken. The patient's decubitus change was the most adopted measure. However, flaws in execution were found due to lack of knowledge, failure to integrate team members, deficient number of staff or no protocol for standardizing the conduct of nursing professionals. It was concluded that the participation of Nurses in the educational programs and the carrying out of actions aimed at the education of the members of their teams are essential so that they can also carry out preventive measures correctly and become health promoters among family members, caregivers or companions and the community, transforming them into co-participants in the process of preventing PIs in the critical patient.

**Keywords:** Pressure Injury; Intensive Care; Prevention.

**RESUMEN** | El objetivo de este estudio fue identificar las razones que pueden estar relacionadas con la dificultad de cambiar la posición de los pacientes en cuidados intensivos. La metodología utilizada fue la búsqueda bibliográfica de artículos publicados entre 2013 y 2019, buscados en Nursing VHL y Google Scholar. Según los estudios analizados, la enfermera es el profesional responsable no solo de la atención brindada, sino también de la evaluación de los factores de riesgo para PL al ingreso, integridad de la piel y los resultados obtenidos con las acciones tomadas. El cambio de decúbito del paciente fue la medida más adoptada. Sin embargo, se encontraron fallas en la ejecución debido a la falta de conocimiento, la falta de integración de los miembros del equipo, el número deficiente del personal o la falta de protocolo para estandarizar la conducta de los profesionales de enfermería. Se concluyó que la participación de las enfermeras en los programas educativos y la realización de acciones dirigidas a la educación de los miembros de sus equipos son esenciales para que también puedan llevar a cabo las medidas preventivas correctamente y convertirse en promotores de salud entre los familiares, cuidadores o compañeros y la comunidad, transformándolos en coparticipes en el proceso de prevención de LP en el paciente crítico.

**Palabras claves:** Lesión por Presión; Terapia Intensiva; Prevención.

**RESUMO** | O objetivo deste estudo consistiu em identificar os motivos que possam estar relacionados à dificuldade da realização da mudança de decúbito de pacientes em terapia intensiva. A metodologia empregada foi a pesquisa bibliográfica de artigos publicados entre 2013 e 2019, buscados na BVS de Enfermagem e no Google Acadêmico. De acordo com os estudos analisados, o Enfermeiro é o profissional responsável não apenas pelos cuidados assistenciais, mas pela avaliação dos fatores de risco de LP na admissão, da integridade da pele e dos resultados obtidos com as ações adotadas. A mudança de decúbito do paciente foi a medida mais adotada. Contudo, foram encontradas falhas na execução por falta de conhecimento, falha de integração entre os membros da equipe, número deficiente de pessoal ou inexistência de protocolo para a padronização das condutas dos profissionais de Enfermagem. Concluiu-se que é fundamental a participação do Enfermeiro nos programas educativos e a realização de ações voltadas para a educação dos membros de suas equipes para que também possam executar as medidas preventivas de forma correta e se tornarem promotores da saúde entre os familiares, cuidadores ou acompanhantes e a comunidade, transformando-os em co-participantes do processo de prevenção de LPs no paciente crítico.

**Palavras-chaves:** Lesão por Pressão; Terapia Intensiva; Prevenção.

## Adriely Duany Cardoso Gonçalves

Nurse. Post-graduated in High Complexity Nursing from the Veiga de Almeida University. RJ / Brazil.

## Ana Lúcia Mota Binda

Nurse. Post-graduated in High Complexity Nursing from the Veiga de Almeida University. RJ / Brazil.

## Eriane Nascimento Pinto

Nurse. PhD in Biosciences. National Cancer Institute. RJ / Brazil.

## Elson Santos de Oliveira

Nurse. PhD student in Nursing and Biosciences at UNIRIO. Adult Intensive Care Center of the National Cancer Institute and COVID 5 Intensive Care Center of the Pedro Ernesto-UERJ University Hospital. Professor of Nursing Graduation at the Veiga de Almeida University; RJ / Brazil.

## Isidoro Binda Netto

Doctor of Science. Associate Professor of Anesthesiology at the Federal University of the State of Rio de Janeiro (UNIRIO). RJ / Brazil.

## INTRODUCTION

Pressure ulcer, currently called pressure injury (PI) after the new nomenclature was established by the National Pressure Ulcer Advisory Panel (NPUAP) in April 2016<sup>(1)</sup>, it is characterized by tissue damage caused by long-term contact with bony prominences with rigid surfaces, such as mattresses, chairs and stretchers, which, in turn, will result in decreased blood flow causing malnutrition in the compressed region, anoxia and necrosis of the tissue<sup>(2)</sup>.

The compression of the body region

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for a long period causes an ischemic process, reducing blood flow to the capillaries that surround the tissue and the surroundings and, consequently, hinder or prevent the arrival of oxygen and nutrients. In addition to local ischemia, therefore, it has as result: hypoxia, edema formation, hardening the affected area, increased local temperature due to the installation of an inflammatory process, the appearance of redness or skin erythema and finally, apoptosis or cell death and tissue necrosis<sup>(3)</sup>.

Although pressure on the most prominent regions of the body or with a small amount of subcutaneous tissue - eg, calcaneus, hips, malleoli, shoulder blades and sacra-coccygeal region - against a rigid surface is considered an important risk factor for the appearance of LPs, shear forces are also pointed out when the patient slides from the bed, deforming and destroying the tissue; and friction, when the patient is often dragged to move in the bed out of the bed<sup>(3)</sup>.

Of multicausal origin, PIs develop due to intrinsic factors (edema, mental and nutritional status, advanced age, incontinence, impaired sensory innervation, hydration, hypotension, associated morbidities or pathologies, excessive involuntary motor skills, level of consciousness, reduced tissue perfusion, muscle tone); or extrinsic to the patient (pressure, friction, shear, immobilization and skin moisture). Thus, preventive actions require the participation of a multidisciplinary team composed of nutritionists, physiotherapists, nursing professionals, among others<sup>(4,5)</sup>.

In view of these factors, the patients at greatest risk of developing PIs are those who are malnourished when they present more prominent bones; elderly people due to increased skin fragility, reduced elasticity and less resistance to traction and shear forces; with chronic diseases such as diabetes mellitus and vascular diseases due to changes in blood circulation and, consequently, in tissue perfusion; hospitalized due to

major surgery, trauma or physical disability; or who use some anesthetics or need to be sedated, altering sensory perception<sup>(6)</sup>.

The Braden Scale comprises an important assessment tool that analyzes 6 factors: sensory perception, humidity, activity, mobility, nutrition and friction and shear. For each factor, there are scores from 1 to 4. The sum of the points determines the patient's PI risk rating, which varies from 4 to 23. The higher the score, the lower the PI risk. Thus, the patient is not at risk when the sum is 19 to 23 points. For low risk, the sum varies from 15 to 18 points; moderate, from 13 to 14 points; high, from 10 to 12 points; and extremely high, from 6 to 9 points. Although it is useful, training is needed for the correct risk classification of the patient, as it can become subjective and interfere with the conduct adopted by nursing professionals<sup>(7)</sup>.

There is also the Waterlow Scale, most used in the United Kingdom. The factors considered in the assessment are height, weight, age, sex, appetite, continence, neurological deficit, tissue malnutrition, medication in use, mobility, skin type, major surgery, and trauma. The patient is considered at risk when the score is higher than 10. When above 15 and 20 points, the patient is considered to be at high risk and very high risk, respectively<sup>(8,9)</sup>.

Intensive Care Units (ICUs) are units where patients considered critical remain, that is, those with a high chance of failure or instability of various physiological systems, therefore requiring detailed control and care more frequently, together with measures more complex and/or invasive therapies. Among these patients are precisely those who are surgical, traumatized or with diseases that require the patient to remain in bed for longer to recover their health, in addition to those who are physically disabled due to old age or motor disability<sup>(7)</sup>.

In the four ICUs of a state reference hospital located in Natal, Rio

Grande do Norte, the prevalence of PIs ranged from 44.4% to 87.5%, resulting in an average rate of 69%<sup>(10)</sup>. In an Adult ICU in Campinas, São Paulo, the incidence was 34.78%, a percentage also considered high. In addition, there were patients who developed more than one lesion<sup>(11)</sup>.

However, PIs are preventable complications. For this reason, the development of PIs in health institutions has been interpreted as an important factor in indicating the quality of services provided<sup>(4)</sup>. The quality indicators allow the monitoring of activities identifying the specific issues of the results achieved and those expected, within a health organization, which should be the subject of a review to improve quality. Indicators can be related to structure, process or results<sup>(12,13)</sup>.

The structure deals with more stable characteristics, including information on material resources (such as facilities and equipment), human resources (number and qualification) and organizational structure (operating criteria, evaluation systems, protocols, among others). When it comes to the process, it aims to analyze how health professionals carry out their activities, act in conducting care and interacting with patients. Anyway, the result turns to the study of the effects and consequences of interventions, using rates, indicators, health parameters and client satisfaction<sup>(13)</sup>.

The prevention of PIs can be achieved through different strategies adopted by nurses, such as: nutritional support; topical treatment; control of skin moisture; and the change in decubitus or decubitus of relatively simple execution and that does not involve hospital expenses, making it convenient to adopt it as part of the care routine throughout the patient's hospitalization period<sup>(14)</sup>.

Several technologies have been created to reduce the risk of developing these injuries. The use of alternating air mattresses, viscoelastic cushions, prevention protocols are examples of some of the

light and hard technologies employed by Nursing. The literature recommends changing the patient's position with the minimum interval every two hours. However, in the daily life experienced by the authors, this interval is not performed for different reasons, for example, worsening hemodynamic instability, mechanical restraint, failure of nursing care, among others. Although technological resources exist that relieve the pressure mainly on the bony prominences, the decubitus change is considered of great importance and effectiveness, but also a measure totally dependent on the human action<sup>(15,16)</sup>.

The execution of the decubitus change can be influenced by the patient's own factors (atelectasis, postoperative plastic surgery, use of vasoactive amines, delirium, among others), the structure (types of mattresses available, workload, professional qualification, protocols assistance, among others) and the process (applicability of risk assessment scales, adaptations made for the implementation of prevention measures). It is understood that these factors reflect the result indicators, especially in the incidence of PIs in the sacral region, caused by the need or not of the patient to remain in the supine position most of the time<sup>(16)</sup>.

The nurse has a prominent role in the management of care, as he is responsible for assessing the risk and from this establish the preventive measures that should be used, as well as the supervision of the care provided. Therefore, it is the health professional who is most in contact with the patient, providing service almost 24 hours a day<sup>(4)</sup>.

In view of this problem, the object of this study is the applicability of the decubitus change by Nursing in intensive care. The guiding question is: What are the challenges faced by Nursing in the applicability of the decubitus change in intensive care? Thus, the main objective of the study is to identify the reasons that may be related to the difficulty

of changing the position of patients in intensive care.

**METHODOLOGY**

The adopted methodology was the type of integrative review, allowing the analysis of knowledge and its effects in practice<sup>(17)</sup>. The review was also carried out using the double-blind system for searching for articles. Thus, the process of selection, inclusion and exclusion of articles carried out by the author was compared with the findings of the reviewer to validate this search. As for the approach, the study is characterized as qualitative.

Data collection was carried out between October 2018 and July 2019. The problem to be investigated is: What are the challenges faced by Nursing in the applicability of decubitus change in intensive care?

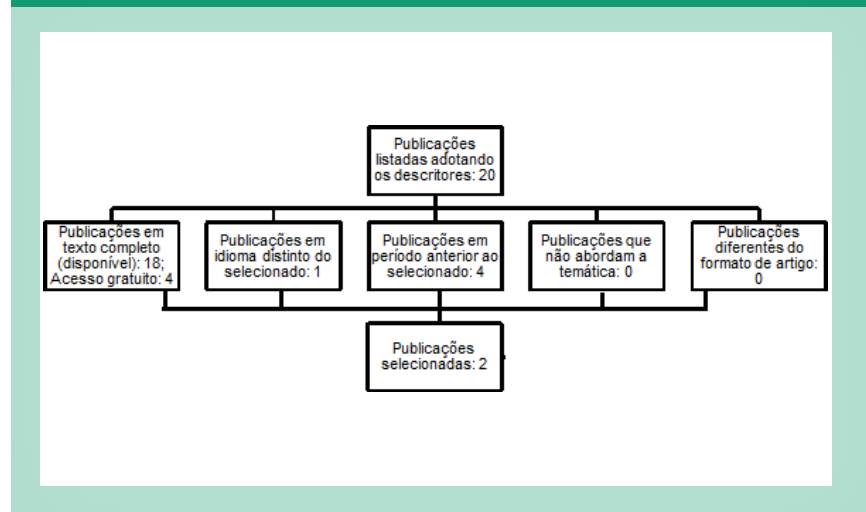
The central questioning or research problem arose through the description of the components that are related to the problem of the high incidence of pressure injuries in patients hospitalized in intensive care. Therefore, there are the initials: P - Patients hospitalized in intensive care, considered at risk or not of developing pressure injuries, having or

not having pressure injuries at the time of hospital admission or at the beginning of the study; I - Change of decubitus by nursing professionals to prevent pressure injuries in critically ill patients; C - Comparison between the frequency of decubitus changes performed or reported by nursing professionals, checking the difference and similarity between them and their main reasons; O - Verification of knowledge about the appropriate decubitus change or its adoption in accordance with the literature for the prevention of pressure injuries or the reduction of its incidence in intensive care patients.

The inclusion criteria established were: available in full free of charge; Portuguese or English languages; field or case studies; studies involving human beings; and time frame from 2013 to 2018-2019 (last 5 years). The exclusion criteria were: studies published before 2013; studies published in another language; literary review studies; in vitro and animal studies.

The search was carried out through the Nursing Virtual Health Library (VHL). The flowchart, below (Figure 1), shows the steps taken to select the articles searched in the VHL, adopting the inclusion and exclusion criteria previously described.

**Figure 1. Flowchart of search and selection of studies in the VHL. Rio de Janeiro, RJ, Brazil, 2018-2019**



Given these findings, it was decided to perform a similar search on Google Scholar to increase the number of selected articles. The same descriptors and inclusion and exclusion criteria were adopted. Articles published

in scientific journals were selected in the order they appeared to verify compliance with the topic, considering a list of 20 publications.

Therefore, the analysis of the results was based on 13 articles, 11 in Portu-

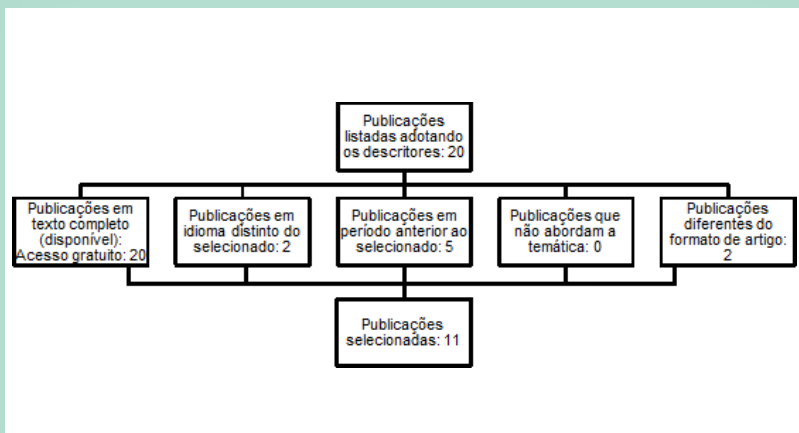
guese (Google Scholar) and 02 in English (VHL).

The analysis of the collected data was done by reading the abstracts, objectives, methods and the main results to check for possible convergences and divergences between the authors regarding the practice of changing the patient's decubitus position by nurses to prevent pressure injuries in the critical patients, in addition to the effects on the occurrence of these injuries, when data were available, in order to enable the discussion of results and comparison with that recommended by the literature.

**RESULTS**

Thirteen case or field studies searched in the Nursing VHL (N = 02) and in Google Scholar (N = 11) were reviewed. The main findings of each study are described in Chart 1, below.

**Figure 2. Flowchart for searching and selecting studies on Google Scholar. Rio de Janeiro, RJ, Brazil, 2018-2019**



**Chart 1. Main findings in the selected articles. Rio de Janeiro, RJ, Brazil, 2018-2019**

Autor(es) (ano)	Assunto/ Amostra	Resultados	Conclusões
Swafford, Culpepper e Dunn (2016)	Eficácia de um programa de prevenção de LPs adquiridas em hospital por em uma UTI adulta, visando a redução de pelo menos 50% em 12 meses. Componentes do programa: escala de Braden, protocolo revisado de cuidados com a pele, reposicionadores fluidizados e curativos com gel de silicone.	A incidência de LPs foi reduzida em 69%. O potencial de redução de custos resultante dessa diminuição da incidência foi de aproximadamente 1 milhão de dólares dentro do período avaliado.	O programa de prevenção de LP adotado se mostrou eficaz na redução da incidência de LPs na UTI investigada. A educação e motivação da equipe e o incentivo à proatividade dos Enfermeiros foram fundamentais para a detecção dos pacientes com risco de LP e a adoção do protocolo.
Davis e Kotowski (2015)	Influência do design de 4 leitos sobre fricção / deslizamento e compressão do tronco. N = 12 indivíduos saudáveis simulando pacientes em coma.	O deslizamento do corpo do paciente no leito e a compressão sobre o tronco foi significativamente maior na elevação da cabeceira a 30° e 45° e no retorno a 0° em 3 modelos de leito, exceto naquele com um mecanismo na região da cabeça e do tronco que se alongava junto com o levantamento da cabeceira e um contorno automático do joelho que também se levantava com a cabeceira.	O design da cama afetou quantidade de deslizamento e compressão do tronco, sendo maiores nos leitos com desenhos de pivô de secção de cabeça simples, que não têm a capacidade de deslizar para trás ou se alongar, aumentando o risco de LPs.

<p>Mendonça et al. (2018)</p>	<p>Ações de enfermagem para prevenção de LP e sua ocorrência em CTIs. N = 104 enfermeiros de 2 hospitais de ensino de Campo Grande, Mato Grosso do Sul</p>	<p>A ocorrência média de LP era de 49% nos 2 hospitais. Ações preventivas: inspeção da pele, aplicação de cobertura hidrocoloide em região sacral, higienização externa, troca de fixação do cateter orotraqueal e/ou cateter nasoenteral, elevação da cabeceira a 30° e mudança de posicionamento a cada 2 horas (a mais praticada e fortemente relacionada à ausência da LP).</p>	<p>A elaboração e implementação de protocolos, o acompanhamento dos registros e dos grupos de maior risco orientaram a prescrição das ações preventivas adequadas para LP.</p>
<p>Sanches et al. (2018)</p>	<p>Adesão da equipe de Enfermagem ao protocolo de LP e segurança do paciente em UTIs. N = 945 pacientes com 18 anos ou mais internados em 6 UTIs do Hospital de Base de São José do Rio Preto, São Paulo.</p>	<p>LP presente em apenas 5,29% dos pacientes durante a internação conforme checklist à beira do leito; O avanço da idade foi tido como variável dependente do desenvolvimento de LP e sua maior incidência; A mudança de decúbito não foi correlacionada com o aumento das LPs, confirmando a eficácia da medida preventiva e a boa adesão pelos profissionais de Enfermagem. As UTIs possuem o relógio de mudança de decúbito, indicando em qual posição o paciente deve estar naquela determinada hora do dia.</p>	<p>Constatou-se a adesão da equipe de Enfermagem ao protocolo pelo baixo índice de LP em relação a outros estudos. A associação apenas com a idade reflete a segurança dos pacientes quanto à medida de prevenção da LP (mudança de decúbito) e sua eficácia pela baixa incidência.</p>
<p>Vasconcelos e Caliri (2017)</p>	<p>Ações dos profissionais de Enfermagem, antes e após utilização de protocolo de prevenção de LP em UTI hospital de ensino em João Pessoa, Paraíba.</p>	<p>Após uso do protocolo, observou-se maior frequência das ações: - Avaliação do risco para LP na admissão e nos dias subsequentes; - Observação e proteção de proeminências ósseas e aplicação de hidratante; - Mudança de decúbito. A frequência não foi descrita, mas foi baseada na condição clínica do paciente, respeitando ainda a hemodinâmica para elevação da cabeceira entre 30° e 45° e evitar pneumonia associada à ventilação mecânica. Mas houve ausência de registro em 15% dos prontuários, dificultando a comunicação entre os profissionais sobre a integridade da pele.</p>	<p>Houve aumento na frequência de ações preventivas após uso do protocolo. A ferramenta é essencial para adoção das recomendações baseadas em evidências científicas pelos profissionais.</p>
<p>Olkoski e Assis (2016)</p>	<p>Efetividade de uma campanha para prevenção de LP em um hospital de ensino de Curitiba.</p>	<p>mudança de decúbito a cada 3 horas; lateralização com angulação menor que 90°; elevação de cabeceira abaixo de 45°; elevação de calcâneos com apoio sob as panturrilhas. Itens com queda ou que merecem atenção: orelhas livres de pressão, fixação adequada de cateteres e drenos. Itens com pequeno aumento da adesão: uso de travesseiros de espuma sob a cabeça e de colchões especiais.</p>	<p>A campanha foi considerada efetiva, porém é necessária uma abordagem contínua e sistemática para o aumento da adesão em outras medidas preventivas e de auxílio à prevenção.</p>
<p>Pereira, Ludvich e Omizzolo (2016)</p>	<p>Ações de Enfermagem em uma UTI de hospital da serra catariense; N = 12 profissionais de Enfermagem; Categorias de análise: - Conhecimento profissional; - Classificação de risco dos pacientes; - Notificação das LPs.</p>	<p>- Conhecimento profissional: mudança de decúbito a cada 2 horas (principal ação realizada), uso de colchão pneumático e de hidratante (hidrocoloide, ácido graxo, óleo de girassol), uso de coxins; - Classificação de risco: escala de Braden (na internação) e colagem de adesivo colorido nos pés da cama; - Notificação de LPs: muitos profissionais (auxiliar e técnico de Enfermagem, principalmente) não conheciam o formulário para notificação de eventos adversos.</p>	<p>A alta prevalência e incidência de LP. Necessidade de uso da Escala de Braden no momento da admissão e esclarecimento quanto ao preenchimento do formulário por todos da equipe e não somente pelo Enfermeiro.</p>

Cruz et al. (2015)	Percepção de Enfermeiros quanto à prevenção de LPs em um Hospital Universitário em Petrolina, Pernambuco. N = 8 Enfermeiros.	A maioria desconhecia a existência de um protocolo de prevenção no hospital ou quando era conhecido, as medidas preventivas não eram adotadas conforme o documento. A mudança de decúbito era adotada por todos os profissionais, mas somente um afirmou executá-la a cada 2 horas. Outro relatou cobrar a ajuda do técnico de Enfermagem para o respeito aos intervalos. Todavia, houve falta de padronização e sistematização das medidas preventivas adotadas devido ao conhecimento diferente entre eles. Uns adotavam o protocolo, outros colocavam em prática o que foi aprendido no curso de graduação ou em outros ofertados por empresas/fabricantes de curativos.	Necessidade de disseminação do conhecimento sobre a existência de protocolo de prevenção e sistematização das ações.
Mattos et al. (2015)	Ações de prevenção de LP em UTI e impactos da educação de profissionais de Enfermagem e acompanhantes acerca das medidas preventivas.	No pré-teste (antes das intervenções educativas), as ações preventivas eram executadas principalmente pelos acompanhantes (97,06%), seguido de técnicos de Enfermagem (57,9%) e Enfermeiros (33,33%). A mudança de decúbito era a principal medida adotada, mas sem periodicidade. Auxiliares de prevenção corretos eram usados como travesseiros e coxins. Mas também aqueles considerados inadequados (boias de plástico, luva d'água, colchões plásticos de água e de ar não pneumáticos). No pós-teste houve aumento significativo dos acertos relacionados às perguntas sobre prevenção, mas as técnicas errôneas de prevenção ainda eram adotadas, pois de 180 profissionais de saúde, somente 46 participaram de todas as palestras educativas.	Necessidade de ações educativas voltadas para a uniformização do conhecimento sobre prevenção de LP e adoção das medidas preventivas corretamente e de forma sistematizada
Albuquerque et al. (2014)	Conhecimento sobre prevenção de LP em CTIs de 4 hospitais de João Pessoa, Paraíba. N = 40 Enfermeiros.	As respostas certas sobre prevenção variaram de 25% a 100%. Itens com menos acertos (abaixo de 50%): reposicionamento do paciente sentado a cada 2 horas ou do paciente imóvel no leito a cada 3 horas; rodas d'água não auxiliam na prevenção; imobilidade, incontinência, nutrição inadequada e alteração do nível de consciência como fatores de risco; protetores de calcâneos não são recomendados; não massagear áreas de proeminência ou hiperemiadas; não elevar a cabeça acima de 30°. Itens com mais acertos (100%): avaliação de risco de LP na admissão; mudança de decúbito em intervalos determinados para cada paciente; mobilização e transferência do paciente feita por duas ou mais pessoas; proeminências ósseas não devem estar em contato entre si.	Discrepância entre conhecimentos sobre prevenção e as ações realizadas.



<p>Oliveira, Santos e Almeida (2014)</p>	<p>Ações de Enfermagem em uma UTI de Hospital Público de Montes Claros, Minas Gerais. N = 22 profissionais de Enfermagem.</p>	<p>Ações preventivas realizadas pela equipe de Enfermagem: 100% - mudança de decúbito a cada 2 ou 3 horas, uso de colchão especial, de curativos para proteger proeminências ósseas, uso de hidratantes na pele seca ou em áreas ressecadas, verificação de áreas susceptíveis da pele dos pacientes em risco de desenvolver LP, controle de umidade no leito, roupas de cama bem esticadas, calcêneos livres de pressão com auxílio de travesseiro na região posterior da perna; 72,72% - massagem nas áreas de proeminência ou hiperemiadas; 68,19% - elevação da cabeceira (desses, 13,33% a realiza corretamente); 63,64% - uso de quadro demonstrativo de áreas de risco de LP (36,36% não a usam ou conhecem).</p>	<p>Necessidade de implantação de um protocolo de prevenção de LPs.</p>
<p>Dantas et al. (2013)</p>	<p>Atuação de Enfermeiros de UTIs na prevenção da LP do Hospital Universitário Onofre Lopes, em Natal, Rio Grande do Norte. N = 13 Enfermeiros.</p>	<p>Ações realizadas: avaliação de risco, mudança de posicionamento, higiene e hidratação da pele (ácidos graxos e hidratante), lençóis esticados, uso de colchão de ar, aplicação de placas de hidrocoloide nas proeminências ósseas e debates entre os membros da equipe sobre as medidas adotadas. Mas não há padronização dos cuidados por falta de material ou de adesão a outras medidas de fácil execução, tais como: posicionamento com ângulo de 30° em quaisquer rotações que permaneça; uso de superfícies de apoio para alívio da pressão das proeminências ósseas; exercício e mobilidade do paciente (passiva ou ativa); uso de técnicas de mobilização adequadas para evitar fricção e cisalhamento.</p>	<p>Necessidade de desenvolvimento de protocolo de prevenção e capacitação dos profissionais para a realização dos cuidados de forma padronizada e uniformização da assistência.</p>

Note: LP - pressure injury; ICU - intensive care unit; ICU - intensive care center.

DISCUSSION

The PIs mainly affect patients with impaired mobility and who undergo a long hospital stay, such as those in intensive care. However, injuries are preventable. For this, the actions of the Nurse are fundamental, as it is the health professional who is at the patient's bedside for the longest time, being responsible for the assessment of the risk of LP at the patient's admission, the daily and systematic assessment of the risk factors. risk and skin and care and evaluation of measures adopted for its continuity or change to ensure preventive effectiveness and reduce the incidence of injuries in hospitals<sup>(5,18)</sup>.

To assess the risk of PI, the Braden

scale is among the most used instruments in the field of Nursing. One of the studies analyzed revealed its use only when the patient had been hospitalized<sup>(19)</sup>. The literature recommends its use at the time of admission<sup>(5,7)</sup>. For actions to be early and properly defined, planned and disseminated among nursing professionals, contributing to their correct execution and reducing the risk of development or the incidence of PIs, as noted by authors<sup>(20-22)</sup>.

It was also possible to verify that the prevention campaigns, programs or protocols developed and implemented had a positive influence on the Nursing professionals by allowing knowledge about hospitalized pa-

tients (ex: risk of PI), the correct execution of preventive measures, having as result in a reduction in the incidence of PIs <sup>(2,20,21,23-25)</sup>.

However, the protocols need to be reviewed and implemented on a continuous and permanent basis so that information about preventive measures reaches all nursing professionals, since problems such as low or non-adherence to the prevention protocol due to ignorance of the existence of the even, besides the lack of standardization and uniformity in the execution of the measures<sup>(2,5,14,22,26-28)</sup>. Authors<sup>(14)</sup> they also mentioned as an aggravating factor the non-participation of the educational programs offered by a good part of the profes-

nals, although they had contemplated all the schedules and institutional duty schedules. Therefore, the importance of team motivation and the incentive to proactivity by study was also emphasized<sup>(21)</sup>.

Regarding the change in decubitus, the vast majority of studies analyzed indicated this preventive measure as the most performed<sup>(5,14,19,20,22,23,26,27-29)</sup>, besides being the most related to the absence of PI<sup>(23)</sup>.

This measure aims to interrupt the pressure on the patient's skin, allowing the arrival of blood essential to oxygenation and tissue nutrition. In addition, researchers stated that only the use of auxiliary materials or other preventive measures alone does not prevent the appearance of the injury. For this reason, so much importance is given to changing decubitus<sup>(4,18,30)</sup>.

However, it is essential that the decubitus change is performed every 2 or 3 hours or at intervals established according to the patient's health status, including level of activity and mobility, general medical and skin condition, tissue tolerance<sup>(19,20,23,24,29,5)</sup>, what was not verified in other studies<sup>(14,22,26-28)</sup>.

In this sense, it should be noted that authors<sup>(14)</sup>, when highlighting the use of decubitus clock, so that the intervals were respected. The clock comprises a laminated form attached to the wall above the headboard. Different colors are used to distinguish the times when the patient must be moved.

The elevation of the headboard also needs to be observed during the patient's decubitus change and understood as part of this measure. Several researchers have recommended the 30° angle to prevent the patient's body from sliding over the bed surface and the occurrence of friction and shear that can damage the skin's integrity, especially in regions of bony prominences such as sacrococcygeal<sup>(5,22,27)</sup>.

However, the possibility of lifting up to 45° was pointed out, accor-



Several researchers have recommended the 30° angle to prevent the patient's body from sliding over the bed surface and the occurrence of friction and shear that can damage the skin's integrity, especially in regions of bony prominences such as sacrococcygeal



ding to the patient's hemodynamics, in order to avoid pneumonia associated with mechanical ventilation<sup>(20)</sup> or according to the bed model, with a mechanism for stretching the head and trunk region; and elevation of the automatic contour of the back of the knee that accompanies the lifting of the headboard. Sliding in bed not only increases the risk of PI among patients due to skin damage, but for caregivers/family members or nursing professionals due to the unnecessary increase in the frequency of decubitus change, causing pain and injuries to the spine, mainly to the lumbar region<sup>(31)</sup>.

Nor should one ignore the presence of obstacles to the implementation of preventive measures, such as: the overload of work by the deficient number of professionals; lack of auxiliary materials; low team adherence; and, obviously, the deficit of knowledge and standardized and systematic prevention programs, or their little-publicized existence among nursing professionals for the standardization of knowledge and its implementation in practice, facilitating the organization of work and the distribution of actions according with an order of priority considering the number of personnel on each shift<sup>(14,26-28)</sup>.

A strategy that helped organize the work of the ICU teams at a Base Hospital in São José do Rio Preto, São Paulo, was the use of the decubitus clock to indicate in which position the patient should be in certain time of day. The clock was a laminated form attached to the wall just above the bed, serving as an easy-to-see reminder. Different colors were adopted for each time of the change, contributing to the identification of the time when the patient should be repositioned according to the protocol. The effectiveness of the preventive measure was confirmed by the low incidence of PI among patients during hospitalization - 5.29%; N = 50 of 945<sup>(24)</sup>.



Another issue that deserves to be highlighted is the lack of records of the effects obtained with the actions performed for notification of PIs by professionals, mainly nursing assistants and technicians, resulting in a high incidence and prevalence of injuries in the ICU of the investigated hospital<sup>(19)</sup>. According to authors<sup>(5)</sup>, the record of nursing conduct and patient responses is essential for the effective planning of future actions.

In addition, it is worth emphasizing the importance of integration between nurses and family members/caregivers or companions, since these constituted the vast majority of subjects who performed preventive measures in an ICU<sup>(14)</sup>. However, the actions were performed incorrectly or insufficiently. Therefore, socio-educational actions must also be part of the nurses' strategic planning for the prevention of PIs.

The same goes for education actions aimed at teams so that tasks can be distributed among nursing technicians and assistants, for example, contributing to the relief of the overload of tasks of the nurse and the guarantee of the execution of measures in accordance with the standards and time intervals established<sup>(5)</sup>, since only one nurse sought support from the nursing technician to perform the decubitus change at the correct intervals according to the study<sup>(26)</sup>.

In the end, the professionals of the Nursing teams would also be prepared to disseminate knowledge, making family members/caregivers or companions co-participants in the process of preventing PI through instructions and guidelines. Unfortunately, this scenario was not observed in several studies analyzed, as they revealed the unpreparedness of part of the Nursing professionals, causing erroneous prevention measures to still be performed or considered correct - ex: massage in the prominences or hyperemic areas,



In addition,  
it is worth  
emphasizing  
the importance  
of integration  
between nurses  
and family  
members/  
caregivers or  
companions, since  
these constituted  
the vast  
majority of  
subjects who  
performed  
preventive  
measures  
in an ICU



use of lifebuoys, plastic, water gloves, non-pneumatic plastic water and air mattresses<sup>(2,5,14,22,26)</sup>.

## CONCLUSION

Based on this literature review, it was possible to conclude that the nurse plays a fundamental role for the prevention of PI in the intensive care patient, since he is responsible for the assessment of risk factors at the time of admission, daily skin inspection, in addition to other assistance actions, such as humidity control, skin and oral hydration, adequate nutrition and relief of pressure on bone prominences through the use of auxiliary materials, elevation of the headboard and changing position.

The change in decubitus, in turn, is a measure that does not involve costs, but depends, to a great extent, on nursing professionals for its correct execution and at regular intervals. This measure also proved to be the most adopted by nurses. However, its execution must be done respecting the patient's clinical condition and every 3 hours, at most, for it to be efficient.

However, it is necessary for managers to recognize and value the performance of nursing professionals in order to provide them with adequate working conditions so that they can meet the needs of the demand; in addition to planning to hire more professionals when necessary. In other words, managers should keep in mind that when acting in the prevention, care and monitoring of individual and collective health, nursing professionals also contribute to an important reduction in the incidence and prevalence of PI in Brazilian hospitals and public spending on the health.

Nursing can be considered the area that most contributes to the prevention of PIs since professionals are those who are most in contact with pa-

tients. However, the studies analyzed here also revealed insufficient knowledge about the measures or their erroneous execution by nursing professionals as obstacles to the prevention of PI. For this reason, it is convenient to encourage the adoption of a standardized preventive action protocol. Standardization favors the adoption of measures without mismatches of information or confusion among nursing professionals.

However, to ensure the understanding of Nursing professionals about

preventive measures and the protocol implemented for the correct execution of actions, it is advisable for Nurses to participate in educational programs and carry out educational actions and continuous monitoring/evaluation of the teams' work. Therefore, education must also integrate planning to standardize the conduct of professionals and, therefore, reduce the risk of occurrence of PIs, in addition to improving the work of the teams, making it fluid and more organized. In turn, the professionals of the Nursing teams will

be able to act as true health promoters through the education of family members, caregivers or companions and the community, transforming them into co-participants in the process of preventing PIs in the critical patient.

Finally, the decubitus change should be valued and considered as a primary measure since, in fact, it can prevent PIs. With this, it will be possible to decrease the quantity and complexity of the nursing professionals' care actions and, consequently, alleviate the overload of tasks. 🐦

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