

# Nursing challenges and interventions in the care of postpartum women after cesarean section with surgical site infection

Desafíos e intervenciones de enfermería en el cuidado de la puérpera después de cesárea con infección del sitio quirúrgico

Desafios e intervenções de enfermagem no cuidado de puérperas após cesárea com infecção do sítio cirúrgico

Luciana Boechat Ribeiro Hardoim<sup>1\*</sup>

ORCID: 0009-0003-6952-462X Fernanda Borges de Aguiar<sup>1</sup> ORCID: 0009-0007-0094-7789 Nair Viana Nunes Pires<sup>1</sup> ORCID: 0009-0004-3274-8440 Sandra Conceição Ribeiro Chicharo<sup>1</sup> ORCID: 0000-0002-1487-0088 Cissa do Espírito Santo Rezende Correa Cardoso<sup>1</sup>

ORCID: 0000-0001-7485-260X

<sup>1</sup>Universidade Estácio de Sá. Rio de Janeiro, Brazil.

#### How to cite this article:

Hardoim LBR, Aguiar FB, Pires NVN, Chicharo SCR, Cardoso CESRC. Nursing challenges and interventions in the care of postpartum women after cesarean section with surgical site infection. Glob Acad Nurs. 2024;5(Sup.1):e451. https://dx.doi.org/10.5935/2675-5602.20200451

# \*Corresponding author:

lucianaboechatrh@hotmail.com

Submission: 11-10-2024 Approval: 12-01-2024

#### Abstract

The general objective is to emphasize the occurrences and obstacles encountered regarding surgical site infections after cesarean sections, and the specific objectives are to analyze the relationship between the occurrence of cesarean sections and the indicators of these infections; to contextualize this type of infection as Healthcare-Associated Infections, and to determine the duties of nurses in the recovery of surgical site infections in puerperal women. This is a qualitative and descriptive research of integrative literature review, with searches in the databases: BDENF, LILACS and CVSP - Regional (BVS), MEDLINE, Capes Periodicals, and Google Scholar. After using the respective descriptors, seven articles related to the theme were found. In addition, protocols and care guidelines from the Ministry of Health and the World Health Organization were consulted, corroborating the discussion. The need to reduce cesarean section rates in Brazil was identified, resulting in a consequent decrease in these infections. Nurses are essential in preventing and recovering surgical site infections, through direct assistance to patients throughout the in-hospital and outpatient period through Primary Care.

**Descriptors:** Cesarean Section; Postpartum Woman; Surgical Site Infection; Nursing Care; Post-Operative Assistance.

#### Resumén

El objetivo general es resaltar las ocurrencias y obstáculos encontrados en relación a las infecciones del sitio quirúrgico después de las cesáreas, y los objetivos específicos son analizar la relación entre la ocurrencia de cesáreas y los indicadores de estas infecciones; contextualizar este tipo de infecciones como Infecciones Asociadas a la Atención Médica y; Determinar las funciones de enfermería en la recuperación de infecciones del sitio quirúrgico en mujeres posparto. Se trata de una revisión de literatura integradora, descriptiva y cualitativa, con búsquedas en las siguientes bases de datos: BDENF, LILACS y CVSP – Regional (BVS), MEDLINE, Capes Journals y Google Scholar. Luego de utilizar los respectivos descriptores se encontraron siete artículos relacionados con la temática. Además, se consultaron protocolos y directrices de asistencia del Ministerio de Salud y de la Organización Mundial de la Salud, que sustentan la discusión. Se identificó la necesidad de reducir las tasas de cesáreas en Brasil, para que haya una consecuente reducción de esas infecciones. Las enfermeras son esenciales en la prevención y recuperación de las infecciones del sitio quirúrgico, a través de la asistencia directa a los pacientes durante todo el período hospitalario y ambulatorio a través de Atención Primaria.

**Descriptores:** Cesárea; Mujer Pós-Parto; Infección del Sitio Quirúrgico; Cuidados de Enfermeira; Asistencia Postoperatoria.

#### Resumo

Apresenta-se como objetivo geral enfatizar as ocorrências e obstáculos encontrados referente às infecções de sítio cirúrgico após cesáreas, e como objetivos específicos analisar a relação de ocorrência de cesáreas com os indicadores dessas infecções; contextualizar este tipo de infecção enquanto Infecções Relacionadas à Assistência à Saúde e; determinar as atribuições do enfermeiro na recuperação das infecções de sítio cirúrgico em puérperas. Trata-se de uma pesquisa qualitativa e descritiva de revisão integrativa da literatura, com buscas nas bases de dados: BDENF, LILACS e CVSP - Regional (BVS), MEDLINE, Periódicos Capes e Google Acadêmico. Após utilização dos respectivos descritores, foram encontrados sete artigos que relacionam-se com a temática. Além disso, foram consultados protocolos e diretrizes assistenciais do Ministério da Saúde e da Organização Mundial da Saúde, que corroboram para a discussão. Identificou-se a necessidade de redução das taxas de cesárea no Brasil, para que haja consequente diminuição dessas infecções. O enfermeiro é fundamental na prevenção e recuperação das infecções de sítio cirúrgico, por meio da assistência direta ao paciente em todo período intra-hospitalar e ambulatorial por meio da Atenção Básica.

Descritores: Cesárea; Puérpera; Infecção do Sítio Cirúrgico; Cuidados de Enfermagem; Assistência Pós-Operatória.



Nursing challenges and interventions in the care of postpartum women after cesarean section with surgical site infection

### Introduction

The cesarean section involves removing the fetus through incisional diaeresis of the abdominal and uterine walls. In Brazil, cesarean sections are among the most performed birth methods, with high rates within health indicators. In 2021, considering the number of live births, 57% of births were performed by cesarean section, and this rate is even higher in the supplementary health sector, reaching 81.76%<sup>1</sup>.

Women who undergo cesarean sections face greater obstacles in their post-surgery and recovery, due to the high degree of complexity of the surgery and healing of the surgical incision, compared to women who deliver vaginally. According to the evaluation of data provided by the Ministry of Health, in Health Information from TABNET/DATASUS, in the option of live births in the State of Rio de Janeiro for 2023, there are 106,389 by cesarean section and 69,616 by vaginal delivery<sup>2</sup>.

Because it is a surgical procedure, a cesarean section increases the risk of some complications. As a result of the increase in the number of procedures, the risk of postoperative problems in the puerperal period also increases, such as surgical site infections (SSIs), which are infections that arise after surgery and, in many cases, can lead to the puerperal woman possibly needing to return to the health unit for rehospitalization, making her recovery process even more challenging.

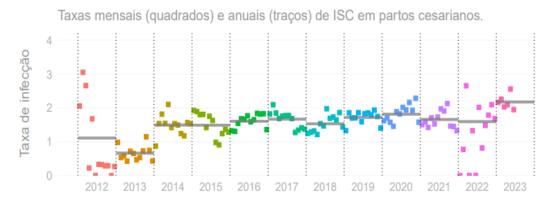
The National Program for the Prevention and Control of Healthcare-Related Infections (PNPCIRAS)

Hardoim LBR, Aguiar FB, Pires NVN, Chicharo SCR, Cardoso CESRC provides the appropriate concept for Healthcare-Related Infection (HAI), which is determined by the presence of characteristic signs of infection after the patient is hospitalized for a healthcare procedure, with its clinical manifestation after the procedure is performed, while hospitalized, or after discharge. HAIs are classified as incidents in the provision of healthcare services, which can contribute to harmful and even lethal outcomes for the patient<sup>3</sup>.

Surgical Site Infections can compromise the surgical incision, tissue, organs, or cavities manipulated during surgery, and are classified according to the affected tissue, as follows: superficial incisional, which involves the skin and subcutaneous tissue; deep incisional, which affects the fascia and muscles; and organ/space, which occurs when the infection spreads to deeper areas, in internal organs and cavity spaces manipulated during surgery<sup>4</sup>.

Factors such as age, presence of chronic diseases, and gender of the patient are classified as non-modifiable and may increase the risk of triggering an SSI. However, several modifiable factors have a significant impact on the development of postoperative infections<sup>5</sup>. Inadequate skin preparation before the surgical procedure, failure to perform aseptic techniques during the procedure or when handling the surgical wound, and the use of contaminated solutions for wound hygiene are aspects that highlight the importance of rigorous and appropriate infection control practices for preventing HAIs.

Graph 1. Monthly rates, represented by squares, and annual rates, represented by dashes, of the occurrence of SSI in cesarean deliveries. Rio de Janeiro, RJ, Brazil, Jan/2012-Jun/2023



Source: National Health Surveillance Agency<sup>6:34</sup>.

Translation note: Column: Monthly (squares) and annual (dash) rates of SSI in cesarean deliveries. Line: Infection rate.

The graph above reiterates the annual growth of infections in cesarean sections, corroborating the idea and extreme urgency of preventing, reconsidering, and minimizing the progression of this rate<sup>6</sup>. In this prevention of Healthcare-Related Infections, more specifically regarding Surgical Site Infections, all members of the interdisciplinary and multidisciplinary team must fight for this cause, especially the Nursing team, as they represent almost 60% of the healthcare professional staff<sup>7</sup>, having an influential, prevalent and effective role in direct patient care.

It is clear that, in this complex context of health, prevention, and care for SSIs, health professionals need to be technically and scientifically trained, using care protocols recommended by the Ministry of Health, to minimize risks, prevent infections and, when they occur, be able to look at women holistically, being aware of the importance of monitoring them throughout the pregnancy-puerperal cycle. Immediately after birth, it is common for them to provide immediate care to the newborn, but the mother needs to be the protagonist, and the nurse must identify her individual needs in her recovery process, as a way of ensuring good quality care.

In view of this, despite the content on HAIs being a topic addressed in several healthcare sectors around the world, the present study is justified by the need for constant improvement and development of quality in the actions of nursing professionals who deal directly with the process of caring for a patient, especially in cases of surgical site infections after cesarean section.

This research aimed to clarify the guiding question: "What are the main challenges encountered in the care of postpartum women with surgical site infections and what nursing interventions can mitigate the damage and assist in the patient's recovery?". The general objective of this research is to highlight the occurrences and obstacles encountered regarding surgical site infections in the postoperative period of cesarean sections. The specific objectives are to analyze the relationship between the occurrence of cesarean sections and the indicators of surgical site infections; to contextualize SSIs as HAIs and the harm to health, and to determine the nurse's duties in the recovery from surgical site infections in women in the postpartum stage.

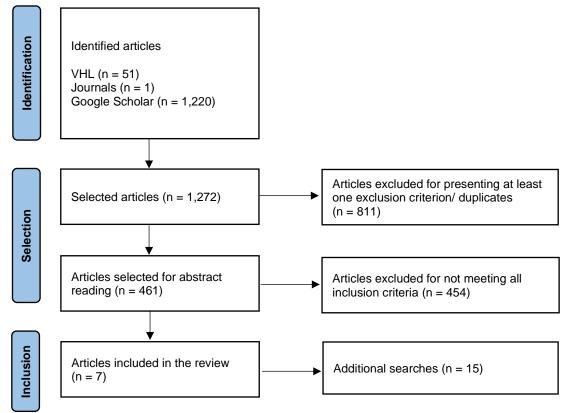
## Methodology

This is a qualitative and descriptive integrative literature review study, approached according to the PCC

Hardoim LBR, Aguiar FB, Pires NVN, Chicharo SCR, Cardoso CESRC strategy (population, concept, and context), where P postpartum women with post-cesarean surgical site infection, C - nursing challenges and interventions, and C scenarios where there is nursing care. It was carried out within the databases: Latin American and Caribbean Literature in Health Sciences (LILACS), through the Virtual Health Library (BVS), Periodicals (CAPES), and Google Scholar.

Based on the research question, to corroborate the study cohesively, the descriptors were selected - defined through the DeCS platform and by reading each scope note - and the Boolean operators "AND" and "OR", in this order, "cesarean section OR puerperal AND surgical site infection AND nursing care OR postoperative care". The inclusion criteria used were studies with a year of publication within the 5-year time frame (2019-2024) and articles only in Portuguese, resulting in 461 articles found. The exclusion criteria were paid articles, as well as those that were not related to the topic and were published before 2018. In addition, it was necessary to conduct additional searches in protocols and care guidelines. It is worth mentioning that the integrative review is a methodology that enables the consolidation of knowledge and the integration of the applicability of results and relevant studies in practice, allowing the inclusion of experimental and nonexperimental studies, which facilitates the understanding of the analyses performed<sup>8</sup>.





Thematic Content Analysis served as the basis for formulating and developing the research, enabling the selection and organization of articles related to the theme, as well as the exclusion of works that do not meet the inclusion criteria. Through Pre-analysis, the first stage of the method, there was familiarization with the content and definition of the objective of the analysis. In the second stage, known as Material Exploration, the classification into



categories and coding of the data obtained was made possible. Finally, in the third stage, called Treatment of Results and Interpretation, the relationship of the themes found with the objectives of the research was assessed, as well as the interpretation and synthesis of the data presented in all the content analyzed<sup>9</sup>.

### Results

Seven articles were selected that address the issue of surgical site infections in postpartum women, which are listed in Chart 1.

ID	Title	Year	Author	Objective	Results
1	Infecção de sítio cirúrgico em puérperas pós-parto cesáreo: uma revisão integrativa	2024	Goulart.	Discuss the relationship between cesarean section and the occurrence of surgical site infections in postpartum women and the implementation of care.	The present study found that the occurrence of SSIs is related to inadequate handling of the surgical site, linked to socioeconomic factors and the lack of effective adherence to prevention and safety measures by health professionals when caring for these women.
2	Assistência de enfermagem a puérpera com infecção do sítio cirúrgico na atenção primária: revisão integrativa	2022	Araújo, <i>et al</i> .	Gather content in electronic libraries on the role of the nurse in identifying site infection and in surgical wound care.	The study highlighted that nursing care is essential for postpartum women with surgical site infections, helping to reduce risks.
3	Assistência puerperal e a construção de um fluxograma para consulta de enfermagem	2020	Silva, <i>et al.</i>	Identify the main complaints and problems presented by women in the postpartum period during the nursing consultation and prepare a care flowchart.	Some of the postpartum women evaluated reported not having received guidance on the postpartum period. Many of the women presented difficulties inherent in the care provided to the newborn or in their own care. All the women practiced breastfeeding and reported difficulties in breastfeeding.
4	Cuidados de enfermagem na prevenção da infecção puerperal em parto cesárea: Análise complementar	2021	Andrade, <i>et al.</i>	Assess the role of nurses in Preventing Puerperal Infection Associated with Cesarean Section.	The research explored SAE as the most effective tool for nursing care in the face of puerperal infections, through prevention, control, and reduction of harm associated with SSIs.
5	Associação entre infecção de sítio cirúrgico pós-cesariana e idade materna	2021	Zuge, et al.	Analyze the association between post-cesarean surgical site infection and maternal age.	The study showed an overall infection rate in postpartum women of 4.6%, rising to 5.3% in women over 35 years of age. Significant differences were observed in pain, hypersensitivity, and hyperemia at the surgical incision.
6	Infecção do sítio cirúrgico após cesariana em uma maternidade de Manaus, Brasil: a importância do uso racional da antibioticoterapia	2021	Petrucio, <i>et al.</i>	Describe the epidemiological and microbiological profile of postpartum women diagnosed with infection after cesarean section, characterizing surgical site infections and treatment.	During the study, 81 patients were diagnosed with surgical site infection. The patients had low levels of education and monthly income, and most were single. Some of them had emergency cesarean sections and did not use prophylactic antibiotics.
7	Infecção puerperal: fatores de risco e a importância da assistência humanizada em enfermagem	2019	Batista <i>, et al.</i>	Identify the main risk factors for puerperal infection.	The study found that cesarean delivery is the greatest risk factor for puerperal infection. Quality prenatal care, along with appropriate procedures during surgery and recovery, combined with nursing care, can prevent these infections.

Chart 1. Articles selected for the review. Rio de Janeiro, RJ, Brazil, 2024								
	Vear	Author	Objective					

As shown in Chart 1, 14.2% of the articles were published in 2019, 14.2% were published in 2020, 42.85% were published in 2021, 14.2% were published in 2022 and 14.2% were published in 2024. Regarding the methodological approach of this study, both qualitative and quantitative can be inferred. Qualitative integrative reviews were conducted in 2024, 2022, one article from 2021, and 2019, to reinforce existing knowledge on the subject and recognize relevant topics in the literature. In 2020 and 2021, cohort studies were conducted, with the applicability of the quantitative method, which enabled the analysis of numerical data through the evaluation of clinical cases in São Paulo, Santa Catarina, and Manaus to explore specific data in the regional context. This combination of methods enabled a multidimensional analysis of the topic.

The analysis of the studies allowed the identification of the main research variables related to the challenges and nursing interventions in the care of



postpartum women after cesarean section with surgical site infection. In this sense, the occurrence of surgical site infections after cesarean sections, nursing care in the prevention of infections associated with health care, and the presence of comorbidities and quality prenatal care were found as independent variables. The dependent variables identified were the length of hospital stay, susceptibility to infections resulting from surgery, and lack of information about their health by professionals. Although the topic of 'cesarean section' is much debated, there is still a shortage of quality studies on postpartum care after surgery, especially concerning the actions of nurses in this humanized care, that is, articles that more fully integrate post-cesarean nursing care with the surgical environment and the postoperative period.

## Discussion

After an in-depth analysis of the selected and categorized articles, the following thematic categories were established.

# Occurrence of cesarean sections with indicators of SSI detection

Indicators are tools used to measure, monitor, and describe the health situation of a population, through attributes understood as physical, emotional, spiritual, environmental, mental and social well-being<sup>10</sup>. About cesarean sections and SSIs, they help determine the quality of care, contributing factors, and the effectiveness of interventions.

The study shows that, although there are currently protocols and care guidelines on combating and preventing HAIs and SSIs, the health system still lacks effective future approaches, given the high rate of infections in procedures and cesarean sections performed without the correct clinical indication. Professionals should be qualified, and units should promote awareness-raising and training actions to promote greater patient safety<sup>11</sup>.

From the analysis of the research and its results, it was possible to identify that the factors that most contribute to the high incidence of SSI are related to health care, such as skin preparation before surgery, failure in the aseptic technique or antibiotic prophylaxis not performed at the time and in the indicated dose<sup>12</sup>.

Furthermore, pregnancy at an advanced age also contributes to the occurrence of infections due to factors such as decreased collagen production, due to the body's aging process itself, as well as some immunoendocrine changes inherent to pregnancy, for example, immunosuppression, which is characterized by decreased levels of IgG - considered a memory antibody, which protects the body against future infections - in the period close to childbirth<sup>13</sup>.

It is important to note that obesity is also a significant predisposing factor for the development of puerperal infections, as it can cause ineffective tissue circulation, favoring the occurrence and accumulation of seromas and hematomas. It has been observed that the presence of subcutaneous tissue greater than two Hardoim LBR, Aguiar FB, Pires NVN, Chicharo SCR, Cardoso CESRC centimeters is related to an increased probability of dehiscence of the surgical wound. Inadequate nutrition, compromised skin hygiene, presence of subcutaneous hematoma, purulent-looking amniotic fluid, and excessive vaginal examinations are also factors that contribute to the occurrence of SSI<sup>14,15</sup>.

According to data from the Ministry of Health, regarding the cost of public health services in Brazil, the average cost of hospital admissions in the SUS between 2000 and 2005, in the obstetric specialty, grew from 329 BRL in 2000 to 446 BRL in 2005, which represents a considerable increase<sup>16</sup>. Os gastos associados à hospitalização para parto cesáreo são afetados pelo aumento das ISC, porque requer o uso de antibióticos endovenosos, que, muitas vezes, resultam em reinternação.

# SSI as HAI and harm to health

HAIs are classified as an incident in the provision of health services, which can contribute to harmful and even lethal outcomes for the patient. And, by definition, through the National Patient Safety Program (PNSP), it is established that an adverse event is one that results in harm to the patient, with the harm being characterized by impairment of the structure or function of the body and/or any effect arising therefrom, including illness, injury, suffering, death, disability or dysfunction, and may therefore be physical, social or psychological<sup>17</sup>.

With the increase in major surgeries, and to reduce adverse events, the World Alliance for Patient Safety was created in October 2004, whose central element is the formulation of Global Challenges for patient safety, which are responsible for raising professional awareness and political commitment with the aim of bringing improvements to safety in health care, reiterating good care practices<sup>18</sup>.

Regarding Global Challenges, the first one can be highlighted, which involves infections associated with healthcare, including safe practices in clinical and surgical procedures, and the second one, which discusses the prevention of surgical site infections, safe anesthesia, safe surgical teams and care indicators to raise standards in health services<sup>18</sup>.

To ensure safe surgery free from healthcareassociated infections, it is essential to prioritize the prevention of SSIs by adopting rigorous care during the surgical phases, since women who undergo cesarean sections face greater risks of postoperative complications, which can prolong the patient's hospitalization. Nursing care is relevant for the prevention of SSIs in surgical procedures, such as: administration of antibiotic prophylaxis 60 minutes before surgery, degerming with 2% chlorhexidine, trichotomy and preoperative bath<sup>7</sup>.

ANVISA's Booklet 4 addresses Healthcare-Related Infection Prevention Measures, stating that the antibiotics of choice should be vancomycin and ciprofloxacin - and it is important to discontinue them after 24 hours - and trichotomy should be performed only when necessary and should not be performed with blades. Other recommendations include blood glucose levels below 180



mg/dL in the pre- and post-operative period, maintenance of normothermia of at least 35.5°C throughout the perioperative period, and use of solutions containing alcohol to prepare the skin, in addition to highlighting the importance of active surveillance for SSI and ongoing education of patients and family members regarding preventive measures<sup>19</sup>.

# Nurses' duties in the recovery of SSI in women in the puerperal stage

The study analyzed reiterates the need for qualifying care and developing protocols and guidelines capable of guiding the work of professionals, in a resolute manner with the aim of meeting the demands related to the occurrence of SSI, adding guidance and health education activities for women monitored by health systems<sup>13</sup>.

To promote and monitor health in the first week after birth, it is recommended that postnatal care be provided by qualified health professionals, either through home visits or, when this is not feasible, through outpatient follow-up. After hospital discharge, at least three postpartum care contacts should occur during the first six weeks after birth. These meetings provide opportunities for clinical practices, psychosocial and emotional support, and routine care for women and newborns in primary care<sup>19,20</sup>.

The Unified Health System (SUS) establishes Primary Care (PC) as its main entry point, ensuring efficient and accessible care to the community. PC is crucial in the early identification of post-cesarean SSI<sup>15</sup>. From the nursing consultation onwards, the nurse plays an essential role in the assessment and identification of complications related to the surgical incision. Early detection allows the nurse to use effective techniques, ensuring that nursing interventions are relevant and of quality.

COFEN Resolution No. 736/2024 regulates that the Nursing Consultation must be organized and recorded according to the stages of the Nursing Process (NP). This, carried out in the puerperal phase, must also include all stages of the NP, namely: Nursing Assessment, Nursing Diagnosis, Nursing Planning, Implementation and Evolution<sup>21</sup>.

Through physical examination, the nurse, as the holder of technical-scientific knowledge, must be able to identify and understand the physiological mechanisms involved in the surgical wound healing process. The initial assessment should include inspection of the surgical incision, observing the integrity of the sutures and the presence of excessive tension, assessing whether the edges are close together and aligned, and identifying signs of unusual sensitivity at the site, spots, edema, heat, redness, or the presence of secretion of any color or appearance. Inspection of the perilesional area is essential to detect allergic reactions to possible dressings used<sup>12</sup>.

When it is necessary to perform a surgical incision, the nurse must provide guidance on post-operative wound care; cleaning with soap and water, observing possible records and dates of suture removal, healthy eating and the elimination of habits that hinder healing, such as the use of tobacco, alcohol and drugs<sup>22</sup>.

Hardoim LBR, Aguiar FB, Pires NVN, Chicharo SCR, Cardoso CESRC When analyzing the results of studies, low-quality and infrequent notes were found, such as inconclusive data, suggesting a lack of information on the living conditions and sociodemographic profile of women, making it difficult to truly determine the proportion of women who did or did not develop signs and symptoms of surgical site infection<sup>15</sup>. The nurse who acts in this way is practicing negligence, by not doing what should have been done, and incompetence, by lack of knowledge or skill about what needs to be done.

Article 41 of the Code of Ethics for Nursing Professionals, formalized by COFEN Resolution No. 564/2017, reiterates the professional's duty to provide complete and reliable written and verbal information necessary to ensure continuity of care<sup>23</sup>. This regulation certifies compliance with the fifth stage of the Nursing process, comprised of Nursing Evolution, where the nurse must evaluate the results achieved, reviewing all care and interventions performed up to that point with the patient, allowing the professional in the next shift to continue implementing the systematization of nursing care. Therefore, nursing consultation during and after the puerperium aims to reduce maternal morbidity and mortality rates, promote breastfeeding, and provide guidance on family planning and postpartum care for the mother and newborn<sup>22</sup>.

The World Health Organization has presented guidelines for maternal and neonatal care, as well as interventions for health promotion, with the aim of improving the experience and quality of care in the postnatal period. The adoption of these recommendations contributes to humanized and personalized care, supporting efficient referral systems, trained health teams with diverse skills, and the provision of necessary supplements, medications, equipment and infrastructure<sup>20</sup>.

Regarding nursing interventions for surgical incision care after an infection has already set in, the nurse must assess the degree of contamination and severity of the wound, and if necessary collect samples for PCR (C-reactive protein) to identify the type of microorganism present, which helps in choosing dressings and antibiotic therapy, if necessary. The ideal dressing should promote moisture between the wound and the dressing, eliminate exudate, stimulate gas exchange, provide thermal insulation, be impermeable to bacteria, maintain asepsis, and facilitate removal without trauma and pain<sup>19</sup>.

The choice of dressing will depend on the nurse's assessment of the wound's aspects, depending on its degree of contamination, amount of exudate and microorganisms present. The procedure should be performed aseptically, cleaning should be carried out with a sterile 0.9% saline solution, in a jet, to remove exudate, foreign bodies or crusts present in the wound<sup>19</sup>.

In cases where hospitalization is essential and crucial for maintaining the health of the postpartum woman, the assessment of the criteria for hospital discharge should consider both the woman's physical and emotional wellbeing, with the aim of developing skills and confidence to take care of herself, since the home environment influences her ability to take care of herself. Therefore, providing



information at the time of discharge is essential to improve the health outcomes for both mother and baby<sup>20</sup>.

In addition to the guidelines that should be provided by the nurse at the time of hospital discharge, if the puerperal woman or her family still need to perform the dressing at home, it is essential that the patient recognizes herself as an integral part of the care, being a co-responsible member in the maintenance and management of her health. In agreement with this idea, Dorothea Orem's Self-Care Deficit Nursing Theory reinforces the idea that people who participate in their self-care are more likely to improve their health outcomes<sup>5</sup>.

## **Final Considerations**

The research demonstrated that there is a need to reduce cesarean section rates in Brazil, which will consequently reduce surgical site infection rates. The birth process needs to be carried out with the least number of unnecessary medical interventions possible to ensure greater safety for the mother and newborns.

Although the indication for cesarean section has technical and scientific basis in some situations, in cases

Hardoim LBR, Aguiar FB, Pires NVN, Chicharo SCR, Cardoso CESRC involving hospital and surgical procedures, the care protocols and guidelines related to the prevention of HAIs must be followed constantly and insistently.

As a limitation of the study, it was found that there is a lack of current protocols and guidelines that discuss the co-responsibility between healthcare professionals and patients in the context of health recovery to engage the client in their self-care and prevention process. Likewise, the lack of studies that identify the main reasons why professionals fail to follow patient safety standards as a way of preventing healthcare-related infections is still prevalent.

Therefore, it is necessary to conduct scientific research aimed at determining the factors that lead to a lack of adequate care by professionals.

In addition, some of the studies highlight the effectiveness of nursing professionals in managing SSIs, proving their importance in preventing and restoring health through the applicability of the Nursing Process, implemented through the Nursing Consultation. By implementing health education practices, nurses guide and encourage women in their individuality and in their care for their newborns, especially in the postoperative period.

# References

- 1. Agência Nacional de Saúde Suplementar (BR). Ficha Técnica IDSS [Internet]. 2024 [acesso em 12 set 2024]. Disponível em: https://www.gov.br/ans/pt-br/acesso-a-informacao/perfil-do-setor/dados-e-indicadoresdosetor/copy\_of\_Ficha\_Tecnica\_IDSS\_ab2023\_atualizada\_em\_abr2024\_retificacaoo\_1.3.pdf
- Ministério da Saúde (BR). TABNET, DATASUS. Nascidos vivos [Internet]. 2024 [acesso em 13 set 2024]. Disponível em: https://datasus.saude.gov.br/nascidos-vivos-desde-1994
- 3. Agência Nacional de Vigilância Sanitária (ANVISA). Programa Nacional de Prevenção e Controle de Infecções Relacionadas à Assistência à Saúde (PNPCIRAS) 2021-2025 [Internet]. Brasília (DF): ANVISA; 2021 [acesso em 13 set 2024]. Disponível em:

https://www.gov.br/anvisa/pt-br/centraisdeconteudo/publicacoes/servicosdesaude/publicacoes/pnpciras\_2021\_2025.pdf
Agência Nacional de Vigilância Sanitária (ANVISA). Nota Técnica n.º 03/2024: Critérios Diagnósticos de IRAS [Internet]. Brasília (DF):

- ANVISA; 2024 [acesso em 13 set 2024]. Disponível em: https://www.gov.br/anvisa/ptbr/centraisdeconteudo/publicacoes/servicosdesaude/notas-tecnicas/notas-tecnicas-vigentes/nota-tecnica-no-03-2024-criteriosdiagnosticos-de-iras/@@download/file
- 5. Potter PA, et al. Fundamentos de Enfermagem. 11 ed. Rio de Janeiro: Guanabara Koogan; 2024.
- 6. Agência Nacional de Vigilância Sanitária (ANVISA). Infecção Relacionada à Assistência à Saúde: Rio de Janeiro [Internet]. Brasília (DF): ANVISA; 2024 [acesso em 13 set 2024]. Disponível em: https://www.gov.br/anvisa/pt-br/assuntos/servicosdesaude/prevencao-econtrole-de-infeccao-e-resistencia-microbiana/copy\_of\_infeccao-relacionada-a-assistencia-a-saude/rio-de-janeiro/@@download/file
- Andrade AFSM, Teles WS, Silva MC, Santos F, Gonzaga GM, Fonseca RG, Torres RC, Debbo A, Azevedo MVC, Silva MHS, Barros AMMS, Santos Junior PCC, Hora AB, Calasans TAS. Cuidados de enfermagem na prevenção da infecção puerperal em parto cesárea: análise complementar. RSD. 2021;10(13):e459101321435. https://doi.org/10.33448/rsd-v10i13.21435
- Souza MT, Silva MS, Carvalho R. Revisão integrativa: o que é e como fazer. Einstein [Internet]. 2010 [acesso em 14 set 2024];8(1 Pt 1):102-6. Disponível em: https://www.scielo.br/j/eins/a/ZQTBkVJZqcWrTT34cXLjtBx/?format=pdf&lang=en
- 9. Bardin L. Análise temática de conteúdo. Lisboa: Edições 70; 2011.
- 10. Organização Pan-Americana da Saúde (OPAS). Indicadores de saúde [Internet]. Washington (DC): OPASS; 2018 [acesso em 20 out 2024]. Disponível em: https://www3.paho.org/hq/joomlatools-files/docman-files/Health\_Indicators-June18-pt.pdf
- Goulart GM. Infecção de sítio cirúrgico em puérperas pós-parto cesáreo: uma Revisão Integrativa. (Trabalho de Conclusão de Curso) Residência. Rio de Janeiro: Instituto Nacional da Saúde da Mulher, da Criança e do Adolescente Fernandes Figueira – FIOCRUZ [Internet]. 2024 [acesso em 15 set 2024]. Disponível em: https://www.arca.fiocruz.br/handle/icict/65779
- 12. Petrucio WS, Nogueira VB, Gentil YFA, Santos AF, Viana JFS. Infecção do sítio cirúrgico após cesariana em uma maternidade de Manaus, Brasil: a importância do uso racional da antibioticoterapia. Feminina [Internet]. 2021 [acesso em 14 set 2024];49(4):37-245. Disponível em: https://docs.bvsalud.org/biblioref/2021/05/1224090/femina-2021-494-p37-245-infeccao-do-sitio-cirurgico-apos-cesar\_ZDeqp66.pdf
- 13. Zuge SS, Gabiatti D, Kloh JK, Brum NC, Silva CB, Aldrighi JD. Associação entre infecção de sítio cirúrgico pós-cesárea e idade materna. Rev enferm UFPE online. 2021;15:e246283 DOI:10.5205/1981-8963.2021.246283
- 14. Batista IS, Leidentz EC, Berlet LJ. Infecção puerperal: fatores de risco e a importância da assistência humanizada em enfermagem. RevisAJES [Internet]. 2019 [acesso em 16 set 2024];2(2). Disponível em: https://www.revista.ajes.edu.br/revistasnoroeste/index.php/revisajes/article/view/15/29



### Nursing challenges and interventions in the care of postpartum women after cesarean section with surgical site infection Hardoim LBR, Aguiar FB, Pires NVN, Chicharo SCR, Cardoso CESRC

- 15. Araújo JS, Abreu WO, Silva JLL. Assistência de enfermagem a puérpera com infecção do sítio cirúrgico na atenção primária: Revisão Integrativa. Revista Pró-UniverSUS. 2022;13(1):80–87. https://doi.org/10.21727/rpu.v13i1.3203
- 16. Ministério da Saúde (BR). Indicadores de dados básicos [Internet]. 2. ed. Brasília (DF): Ministério da Saúde; 2024 [acesso em 26 out 2024]. Disponível em: http://tabnet.datasus.gov.br/tabdata/LivroIDB/2edrev/e11.pdf
- 17. Ministério da Saúde (BR). Portaria GM/MS n.º 529, de 1º de abril de 2013. Institui o Programa Nacional de Segurança do Paciente (PNSP) [Internet]. Brasília (DF): Ministério da Saúde; 2013 [acesso em 26 out 2024]. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0529\_01\_04\_2013.html
- Ministério da Saúde (BR). Segurança do paciente: cirurgias seguras [Internet]. Brasília (DF): Ministério da Saúde; 2009 [acesso em 26 out 2024]. Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/seguranca\_paciente\_cirurgias\_seguras\_guia.pdf
- Agência Nacional de Vigilância Sanitária (ANVISA). Caderno 4: Medidas de Prevenção de Infecção Relacionada à Saúde [Internet]. Brasília (DF): ANVISA; 2017 [acesso em 15 set 2024]. Disponível em: https://www.gov.br/anvisa/ptbr/centraisdeconteudo/publicacoes/servicosdesaude/publicacoes/caderno-4-medidas-de-prevencao-de-infeccao-relacionada-aassistencia-a-saude.pdf/view
- Organização Mundial da Saúde (OMS). Recomendações da OMS sobre cuidados maternos e neonatais para uma experiência pós-natal positiva [Internet]. Genebra: OMS; 2022 [acesso em 26 set 2024]. Disponível em: https://iris.who.int/bitstream/handle/10665/354560/9789240048515-por.pdf
- Conselho Federal de Enfermagem (COFEN). Resolução n.º 736, de 17 de janeiro de 2024. Dispõe sobre a implementação do Processo de Enfermagem em todo contexto socioambiental onde ocorre o cuidado de enfermagem [Internet]. Brasília (DF): COFEN; 2024 [acesso em 25 out 2024]. Disponível em: https://www.cofen.gov.br/resolucao-cofen-no-736-de-17-de-janeiro-de-2024
- 22. Silva LP, Silveira LM, Mendes TJM, Stabile AM. Assistência puerperal e a construção de um fluxograma para consulta de enfermagem. Rev. Bras. Saúde Mater. Infant. 2020;20(1):115-127. http://dx.doi.org/10.1590/1806-93042020000100007
- 23. Conselho Federal de Enfermagem (COFEN). Resolução n.º 564, 06 de novembro de 2017. Aprova novo Código de Ética dos Profissionais de Enfermagem [Internet]. Brasília (DF): COFEN; 2017 [acesso em 26 set 2024]. Disponível em: https://www.cofen.gov.br/resolucao-cofen-no-5642017/



