



Nursing role in early identification, management and application of protocols in cases of postpartum hemorrhage

The role of nursing in the early detection, management, and implementation of protocols in postpartum hemorrhage cases

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SUMMARY

Introduction: Postpartum hemorrhage (PPH) is one of the leading causes of maternal mortality globally, accounting for approximately 27% of maternal deaths, especially in developing countries, according to the World Health Organization. **Objective:** To analyze the role of nursing in the early identification and management of PPH in obstetric emergency settings. **Methodology:** This is an integrative literature review, with a qualitative and descriptive approach, based on publications indexed in the SciELO, LILACS, BDENF, and PubMed databases, from 2019 to 2024. **Results:** They were organized into three thematic categories: clinical signs identified by nursing (17 articles), procedures adopted in the management of PPH (14 articles), and protocols used and challenges faced in care practice (08 articles). It was evident that the rapid and technical action of nursing, especially through strategies such as continuous monitoring, effective communication, and application of protocols, directly contributes to the reduction of maternal morbidity and mortality.

Conclusion: Training based on realistic simulations and continuous training is essential to qualify the team's response to obstetric emergencies.

Keywords: Emergency; Diagnosis; Protocols; Assistance

ABSTRACT

Introduction: Postpartum hemorrhage (PPH) is one of the leading causes of maternal mortality worldwide, accounting for approximately 27% of maternal deaths, especially in developing countries, according to the World Health Organization. **Objective:** To analyze the role of nursing in the early identification and management of PPH in obstetric emergency contexts.

Methodology: This is an integrative literature review with a qualitative and descriptive approach, based on publications indexed in the SciELO, LILACS, BDENF, and PubMed databases, covering the period from 2019 to 2024. **Results:** The findings were organized into three thematic categories: clinical signs identified by nurses (17 articles), actions taken in the management of PPH (14 articles), and protocols used and challenges faced in care practice (08 articles). It was evidenced that the rapid and technical performance of nurses, especially through strategies such as continuous monitoring, effective communication, and the application of protocols, directly contributes to the reduction of maternal morbidity and mortality.

Conclusion: Training based on realistic simulations and continuous education proves essential for improving the team's response to obstetric emergencies.

Keywords: Urgency; Diagnosis; Protocols; Care.

1. INTRODUCTION

Postpartum hemorrhage (PPH) is defined as cumulative blood loss equal to or greater than 500 mL after vaginal delivery or equal to or greater than 1000 mL after cesarean delivery, in first 24 hours (primary PPH), being classified as secondary when it occurs between 24 hours and up to 12 weeks after delivery. This condition can lead to serious complications, such as hypovolemic shock, organ failure and maternal death (BRASIL, 2023).

The main cause of maternal mortality in the world is PPH, especially in countries in development. It is estimated that this condition is responsible for about 27% of global maternal deaths, most of which are preventable through early interventions and effective (Who, 2022). It can be caused by four factors known as the "4 Ts": tone (uterine atony, main cause), trauma (lacerations in the genital tract), tissue (retention of debris placental) and thrombin (coagulation changes) (Figueiredo *et al.*, 2021).

Faced with this worrying scenario, the work of the nursing team becomes fundamental, since these professionals often represent the first point of contact of pregnant women with health services during obstetric complications (BRAZIL, 2018; Rezende; Montenegro, 2021).

Early identification of this condition and its appropriate management require nursing not only technical knowledge, but also refined clinical skills and decision-making quick decision-making, especially in emergency settings. These professionals are responsible for recognizing important clinical changes, applying care protocols immediate and ensure efficient communication with other team members multidisciplinary, factors that directly influence maternal outcomes (Barros *et al.*, 2020; Sousa; Oliveira, 2019).

Despite the vast scientific production on postpartum hemorrhage, there are still few studies that specifically address the role of nursing in emergency settings obstetric, which justifies this review. In this sense, the present study aims to objective to analyze the role of the nursing team in the early identification and management of postpartum hemorrhage (PPH) in obstetric emergency situations, seeking to identify the

main clinical signs recognized during emergency care, as well as describe the procedures adopted in the face of this complication in emergency services.

2. MATERIAL AND METHOD

This study is an integrative literature review, of a qualitative nature and with a descriptive approach, based on scientific productions that address the performance of nursing in the early identification and management of postpartum hemorrhage in contexts of obstetric emergency. This type of review allows for the collection and synthesis of research results previous ones, promoting a comprehensive understanding of the topic.

The bibliographic survey was carried out in widely used electronic databases recognized in the health field, such as the Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS), Database in Nursing (BDENF) and PubMed. To search for studies, descriptors were used controlled combined with the Boolean operators “AND” and “OR” in order to expand and to refine the results. The descriptors used were: “Urgency,” “Diagnosis,” and “Protocols.” and “Assistance”.

Inclusion criteria were adopted to select the studies: available publications in full, with free access, published in the last five years (from 2019 to 2024), written in Portuguese, English or Spanish, and that specifically address the performance of nursing in the face of postpartum hemorrhage in emergency and urgent care settings. On the other hand, On the other hand, duplicate articles, simple abstracts, letters to the editor, theses and dissertations, as well as studies whose focus was not directly related to the theme proposal or that were restricted to the medical perspective.

After applying the selection criteria, those who met the criteria established were read in full and critically analyzed. The main findings were organized into thematic categories, allowing a more structured approach to discussion. The categories defined were: (1) clinical signs and early recognition of postpartum hemorrhage; (2) nursing procedures in the management of obstetric emergencies; and (3) protocols used and challenges faced in healthcare practice.

3. RESULTS AND DISCUSSION

From the verification of the combined literature of the descriptors and the analysis of the studies selected, three main thematic categories were identified and organized, with the following frequency of occurrence: clinical signs and early recognition of post-operative hemorrhage childbirth (17 articles), nursing conduct in the management of obstetric emergencies (14 articles) and protocols used and challenges faced in healthcare practice (08 articles). This categorization allowed the discussion to be structured in a clear and objective way, highlighting the aspects most recurrent in the scientific literature on nursing performance in the face of hemorrhage postpartum in emergency settings.

3.1 CLINICAL SIGNS OF POSTPARTUM HEMORRHAGE IDENTIFIED BY NURSING TEAM

Early recognition of PPH is based on the observation of clinical signs that indicate hemodynamic instability. According to Oliveira *et al.* (2023), tachycardia (>100 bpm) and hypotension (systolic BP <90 mmHg) are important indicators of blood loss significant. In addition, increased respiratory rate, pale skin, cold sweats, dizziness and mental confusion may precede hypovolemic shock.

Table 1 presented allows for the early identification of clinical signs and adequate classification of the degree of shock, essential aspects to prevent the progression of the condition for coagulopathy, metabolic acidosis, and organ failure. The nursing team plays a fundamental role in the continuous monitoring of the patient, in identifying changes in vital signs and immediate communication with the multidisciplinary team. (BRAZIL, 2022)

Table 1 – Degree of shock and clinical signs in postpartum hemorrhage. Brazil. 2022.

Degree of Shock	Estimated Blood Loss	Clinical Signs
Grade I (mild)	< 15% (< 750 mL)	Normal blood pressure, HR < 100 bpm, peripheral pulse present, without changes in mental status.
Degree II (moderate)	15–30% (750–1,500 mL)	Tachycardia (>100 bpm), relative hypotension, cold skin, sweating, mild anxiety.
Grade III (severe)	30–40% (1,500–2,000 mL)	Hypotension, tachycardia (>120 bpm), tachypnea, confusion mental, oliguria.
Grade IV (very serious)	> 40% (> 2,000 mL)	Marked hypotension, cold extremities, pallor intense, confusion or unconsciousness, anuria.

Source: Pan American Health Organization 2018. Adapted by the author.



The shock index (SI), defined as the ratio of heart rate to blood pressure systolic blood pressure is a clinical parameter used to assess the severity of the condition early on. blood loss, especially in cases of postpartum hemorrhage (BRAZIL, 2018). Values normal SI values are between 0.5 and 0.7 in pregnant women in the immediate postpartum period; however, values equal to or greater than 0.9 may indicate significant hypovolemia, requiring immediate intervention (Duarte; Andrade; Costa, 2020). The adoption of the shock index as rapid screening tool by the nursing team has proven effective in detecting early detection of maternal hemodynamic deterioration, contributing to the timely management of PPH and reduction of maternal mortality (Ferraz *et al.*, 2022).

The relevant aspect to be considered is the continuous monitoring of vital signs. tachycardia and hypotension are often the first indications of shock hypovolemic. The nursing staff should make frequent recordings every 15 minutes in the first hours after birth and quickly identify any deterioration in the condition patient's hemodynamic status. (Guedes *et al.*, 2022).

An early clinical sign that is often underestimated is the reduction in urine output, observed due to decreased urinary output in an indwelling catheter or absence of spontaneous urination. This change may indicate renal hypoperfusion secondary to hypovolemia. The nurse should strictly record urinary volume and report any significant drop to your doctor responsible (Souza *et al.*, 2021).

Lima *et al.* (2022) highlight that the quantitative measurement of bleeding is still faces difficulties, since visual assessment is imprecise and can underestimate up to 30% of the actual loss. Therefore, the use of standardized blood measuring devices (such as collectors and scales) is recommended to improve accuracy.

Additionally, evaluation of the uterus is vital; uterine atony, which occurs in up to 70% of cases of HPP, is manifested by the absence of firm contraction to the touch, being a sign that nursing must promptly identify (Gomes *et al.*, 2021; Almeida *et al.*, 2021). The early detection also includes inspection of the genital tract for lacerations, hematomas or placental retention, less frequent but relevant causes for the differential diagnosis (Martins *et al.*, 2022).

3.2 CONDUCT ADOPTED BY THE NURSING TEAM

In obstetric emergency care, the nursing team plays a key role essential in the recognition and initial care of postpartum hemorrhage (PPH), especially in emergency services, health units and maternity hospitals with basic infrastructure. The first approach involves a rapid clinical evaluation of the patient, checking for signs vital signs, state of consciousness, respiratory pattern and presence of visible bleeding. This initial screening allows you to classify the severity of the condition and immediately activate support necessary (BRAZIL, 2018).

Table 2 presents an adapted protocol from the Federal District, proposed to guide the initial conduct of the nurse in cases of obstetric emergency. According to Federal Law No. 7,498/1986, Art. 11, the emergency nurse can act in cases of obstetric emergency as long as it is not recurrent in the health unit. This means that the nurse general practitioner is legally authorized to provide obstetric care when there is no specialized professional present, especially in urgent/emergency situations. The performance of the emergency nurse in the PPH scenario must follow protocol parameters institutional according to COFEN Resolution No. 736/2024.

Table 2 - Postpartum Hemorrhage Healthcare Protocol, SES-DF, 2023.

Initial Nurse Approaches to Postpartum Hemorrhage	
1	Catheterization of 02 caliber accesses (jelco 14 or 16)
2	Start rapid infusion of crystalloid solution (sodium chloride 0.9% solution for injection, 500ml bag or vial) ml or Ringer's solution (Na, K, Ca chlorides) injectable solution (500 mL bag or vial)
3	Start Tranexamic Acid injection solution 50 mg/ml 5 mL vial with 1 g IV in 10 minutes
4	Oxygen therapy with a facial mask at 8-10 liters/minute
5	Elevation of lower limbs (or Trendelenburg position)
6	Continuous maternal monitoring
7	Indwelling bladder catheterization: <ul style="list-style-type: none"> • Bladder emptying for necessary maneuvers; • Monitoring of diuresis.
8	Collection of exams: Complete blood count; TAP, aPTT; Sodium, potassium, ionizable calcium; Fibrinogen.
9	Prevent hypothermia

Source: SES-DF Ordinance No. 488 of December 14, 2023. Adapted by the author

If postpartum bleeding is suspected, the above table helps with the nursing team's performance: establish large-caliber venous access with solutions



crystalloids for volume replacement, according to institutional protocols. Even if not prescribing emergency medications, the professional can prepare and administer previously prescribed medications, such as oxytocin or misoprostol, paying attention to their adverse effects and clinical response. This rapid action contributes to hemodynamic stabilization of the patient while awaiting medical intervention (Souza *et al.*, 2021).

Another relevant conduct concerns the organization of the environment and resources. The nurse must ensure that the bed is functional, with equipment such as an oximeter, heart monitor and oxygen cylinders ready for use. Additionally, you must provide the collection of urgent laboratory tests, such as blood count, coagulogram and blood typing, and notify the blood bank if necessary. These actions are essential to optimize the care and avoid delays in interventions (Fonseca *et al.*, 2020).

Additionally, it is responsible for non-pharmacological measures, such as positioning the patient in dorsal decubitus with lower limbs elevated, maintain body temperature appropriate and apply cold compresses to the lower abdomen, according to care guidelines. These procedures, although simple, can reduce blood loss and improve perfusion tissue in situations of instability (Rezende; Dias, 2022).

Efficient communication with the multidisciplinary team is essential. The nurse must objectively report the clinical picture, using the SBAR protocol, which organizes the information in four elements: Situation, Brief History, Assessment, Recommendation and accompany the patient until transfer to centers of greater complexity, if necessary. Literature shows that communication failures are critical factors in emergencies obstetrics, which reinforces the importance of this skill (Guedes *et al.*, 2022; Hale *et al.*, 2019).

3.3 PROTOCOLS USED AND CHALLENGES FACED IN PRACTICE

ASSISTANCE

The management of postpartum hemorrhage (PPH) is guided by national protocols and international standards that guide clinical conduct in emergency situations. Among the main documents used in Brazil, the most notable are the Clinical Management Protocol for HPP Ministry of Health (2022), which establishes procedures such as immediate administration of uterotonics, use of tranexamic acid, volume replacement with crystalloid solutions and blood transfusion, and SES-DF Ordinance No. 488/2023, which presents the “Care Protocol to Health – Postpartum Hemorrhage”, with specific flowcharts for the nurse’s work in emergency situations.

Despite the availability of these protocols, several challenges hinder their implementation in healthcare practice. The literature highlights the lack of practical training of the nursing team, the absence of periodic clinical simulations, the shortage of supplies and understaffing of professionals in the units (Oliveira *et al.*, 2021; Guedes *et al.*, 2022).

When it comes to training, studies show that the most effective training is those based on realistic simulations, in which emergency scenarios are recreated obstetrics using mannequins, clinical algorithms and assessment of response time team (Silva *et al.*, 2023). In addition, practical face-to-face training with case studies and interactive online courses have also shown a positive impact on the standardization of conduct and in reducing errors during care (Carvalho *et al.*, 2020). However, these strategies are still underutilized in many SUS units.

Another recurring obstacle involves the unavailability of essential medicines, such as oxytocin and misoprostol, as well as supplies such as large-caliber Jelcos, infusion devices and collection bags to estimate bleeding. The lack of these resources compromises directly affect the team's immediate response capacity, especially in places with limited infrastructure (BRAZIL, 2018; WORLD HEALTH ORGANIZATION, 2012).

Finally, organizational issues such as the lack of continuous supervision of the application of protocols, the weakness of managerial support and the institutional culture little focused on continuing education hinder the consolidation of evidence-based practices. Given Furthermore, it becomes essential to implement continuous training programs with an emphasis on obstetric emergencies, accompanied by periodic practical evaluation and reinforcement of the use of institutional protocols, as a strategy to reduce maternal morbidity and mortality due to PPH.

4. FINAL CONSIDERATIONS

This integrative review demonstrated that the nursing team plays a key role fundamental in the early identification and management of postpartum hemorrhage (PPH), through continuous monitoring of clinical signs, application of emergency procedures and effective communication with the multidisciplinary team. According to the World Health Organization (2022), PPH is responsible for approximately 27% of maternal deaths in developing countries. development, which reinforces the urgency of qualified technical nursing work in these critical scenarios.

Despite this importance, the literature shows that failures in recognition timely and immediate management of PPH are often associated with a lack of training practice and the absence of standardized protocols. Among the training strategies, the following stand out how more effective are training based on realistic simulations, which promote decision-making in a controlled environment, in addition to face-to-face courses with clinical scenarios integrated and interactive online training. These methods have demonstrated better performance in clinical response time, in the correct application of protocols and in the reduction of errors assistance (Carvalho *et al.*, 2020; Silva *et al.*, 2023).

Furthermore, structural and organizational barriers such as material shortages and undersized teams still represent obstacles to effective assistance. Given addition, the systematic adoption of continuing education programs with an emphasis on situations critical, such as obstetric emergencies, associated with the standardization of protocols institutional, constitutes an essential strategy to improve clinical outcomes and reduce maternal mortality.

This study reinforces the value of obstetric nursing and highlights the need of constant investments in practical training, applied research and improvement of conditions work, especially in units that provide emergency obstetric care.

5. REFERENCES

ALMEIDA, RM et al. Continuing education in obstetric nursing: impact on quality of care for postpartum hemorrhage. *Brazilian Journal of Nursing*, v. 74, n. 3, 2021.

BARROS, AA et al. Nursing care in postpartum hemorrhage: a challenge to maternal safety. *Journal of Contemporary Nursing*, v. 9, n. 2, p. 123–129, 2020.

BRAZIL. Federal Council of Nursing. *COFEN Resolution No. 736, of January 17, 2024*. Official Gazette of the Union: section 1, Brasília, DF, January 23, 2024. p. 74. Available at: https://www.cofen.gov.br/resolucao-cofen-no-736-de-17-de-janeiro-de-2024_112957.html.

Accessed on: July 13, 2025.

BRAZIL. Federal District. State Department of Health. *Ordinance No. 488, of December 14 2023*. Official Gazette of the Federal District: section 1, no. 235, p. 11, December 18, 2023. Available at:

https://www.sinj.df.gov.br/sinj/Norma/5403c6f9da084b44b6ffcc517451a4fc/Portaria_488_14_12_2023.html. Accessed on: July 13, 2025.

BRAZIL. *Law No. 7,498 of June 25, 1986.* Provides for the regulation of the exercise of Nursing. Official Gazette of the Union: section 1, Brasília, DF, June 26, 1986. Available at: https://www.planalto.gov.br/ccivil_03/leis/l7498.htm. Accessed on: July 13, 2025.

BRAZIL. Ministry of Health. *National guidelines for natural childbirth care.* Brasília: Ministry of Health, 2018. Available in: https://bvsmms.saude.gov.br/bvs/publicacoes/diretrizes_assistencia_parto_normal.pdf. Access on: July 19, 2025.

BRAZIL. Ministry of Health. *Low-risk prenatal care.* Brasília: Ministry of Health, 2018. Available in: https://bvsmms.saude.gov.br/bvs/publicacoes/atencao_pre_natal_baixo_risco.pdf. Accessed at: July 11, 2025.

BRAZIL. Ministry of Health. *High-Risk Pregnancy Manual: care multidisciplinary.* 3rd ed. Brasília: Ministry of Health, 2023. Available at: https://bvsmms.saude.gov.br/bvs/publicacoes/manual_gestacao_alto_risco.pdf. Accessed on: 18 Jul. 2025.

BRAZIL. Ministry of Health. *Women's health care protocols: conditions and acute and chronic complications.* Brasília: Ministry of Health, 2018.

CARVALHO, DP et al. Continuing education and realistic simulation in the management of obstetric emergencies. *Brazilian Journal of Nursing*, v. 73, suppl. 5, e20190142, 2020. DOI: <https://doi.org/10.1590/0034-7167-2019-0142>.

DUARTE, G.; ANDRADE, KC; COSTA, ML *Obstetric emergencies: diagnosis and conduct.* São Paulo: Manole, 2020.

FERRAZ, TCM et al. Use of the shock index in the early identification of postpartum hemorrhage: an integrative review. *Brazilian Journal of Nursing*, v. 75, n. 1, p. e20220034, 2022. DOI: <https://doi.org/10.1590/0034-7167-2022-0034>.

FIGUEIREDO, SFP et al. Postpartum hemorrhage: an integrative literature review. *Journal of Nursing and Health Care*, v. 10, n. 2, p. 1–9, 2021. Available at: <https://periodicos.univasf.edu.br/index.php/revas/article/view/1405>. Accessed on: July 11, 2025.

FONSECA, JR et al. Nursing conduct in obstetric emergencies: integrative review. *Brazilian Journal of Nursing*, v. 73, suppl. 5, p. 1–7, 2020. DOI: <http://dx.doi.org/10.33448/rsd-v12i14.43859>.

- GOMES, RS et al.** Recognition of postpartum hemorrhage: nurses' perception obstetrics. *Journal of Maternal and Child Health*, v. 21, n. 1, 2021.
- GUEDES, RM et al.** Nursing team performance in obstetric emergencies: review integrative. *Journal of Nursing and Health*, v. 11, n. 3, p. 1–9, 2022.
- HALE, AR et al.** SBAR: a shared structure for effective team communication. *BMJ Quality & Safety*, vol. 28, no. 9, p. 754–759, 2019. DOI: <https://doi.org/10.1136/bmjqs-2018-008894>.
- LIMA, TJ et al.** Nursing practices in postpartum hemorrhage: a hospital study university. *Current Nursing Journal*, v. 30, 2022.
- MARTINS, DC et al.** Challenges for nursing staff facing PPH in maternity hospitals public. *Collective Health Journal*, v. 32, n. 4, 2022.
- OLIVEIRA, ALC et al.** Nurses' performance in obstetric emergencies: gaps and potentialities. *Current Nursing Journal*, v. 95, p. e021033, 2021.
- OLIVEIRA, MS et al.** Nursing performance in obstetric emergencies: review integrative. *Electronic Journal of Health Collection*, 2023.
- PAHO.** Pan American Health Organization. *Orientation manual for the course of prevention of obstetric management of hemorrhage: Zero Maternal Deaths from Hemorrhage*. Brasilia: PAHO, 2018. Available in: <https://iris.paho.org/bitstream/handle/10665.2/34880/9788579671258-por.pdf>. Accessed on: 05 Jul. 2025.
- WORLD HEALTH ORGANIZATION.** *WHO recommendations for the prevention and treatment of postpartum hemorrhage*. Geneva: WHO, 2012. Available at: <https://www.who.int/publications/i/item/9789241548502>. Accessed on: July 19, 2025.
- REZENDE, JS; DIAS, MM** Obstetric emergencies: priority interventions of nursing. *Current Nursing Journal*, v. 96, p. 65–72, 2022.
- REZENDE, J.; MONTENEGRO, C.A.** *Fundamental obstetrics*. 14th ed. Rio de Janeiro: Guanabara Koogan, 2021.
- SILVA, LM et al.** Simulation as an educational strategy for the management of post-traumatic hemorrhage. childbirth. *Latin American Journal of Nursing*, v. 31, e4034, 2023. DOI: <https://doi.org/10.1590/1518-8345.5562.4034>.
- SOUSA, LM; OLIVEIRA, KS** Nursing performance in obstetric emergencies: integrative review. *Brazilian Journal of Nursing*, v. 72, n. 4, p. 1012–1017, 2019.
- SOUZA, MC et al.** Nursing performance in the administration of uterotonic in cases of HPP. *Electronic Journal of Health Collection*, v. 13, n. 4, p. e9978, 2021.

WORLD HEALTH ORGANIZATION (WHO). *Maternal mortality.* 2022. Available at:
<https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>. Accessed on: July 11,
2025.