

Nursing care for newborns in different scenarios: an integrative review of the literature

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ABSTRACT

Objective: To identify nursing care for newborns. **Method:** an integrative review with Ganong's methodological framework, which used the keywords "neonatal nursing", "nursing care" and "newborns", interspersed with the Boolean operator "and", in the Cinahl, Pubmed, Scopus, Web of databases Science and Medline databases, between 2015 and 2017. The inclusion criterion was mediated by the guiding question structured from the acronym PICO: What is the state of the art of humanized neonatal nursing care performed in different care settings? After selecting the articles (n=16), the Measuring Study Quality instrument was applied to assess the methodological quality of the articles, through double checking and it was decided to include a total of 10 articles in the sample. **Results:** Of the analyzed publications, 60% are national, the international ones are from the USA, Netherlands, Italy and Indonesia, and most of them (80%) are related to the care of premature newborns. They talk about care related to: respiratory support, safe sleep practice, minimal handling, reduction of sensory and environmental stimuli, comfort, positioning, body hygiene, weighing, and prevention of skin lesions. **Conclusion:** the publications focus on the production of knowledge for the qualification of professionals in the Neonatal Intensive Care Unit (NICU), with a focus on premature infants. There was a gap in research on neonatal care in the Delivery Room, Joint Accommodation, in the Kangaroo Intermediate Care Unit (UCINCa) and in Primary Health Care.

Keywords: Newborn; Neonatal Nursing; Nursing care; Review; Technology; Evidence-Based Nursing.

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INTRODUCTION

The World Health Organization (WHO) recommends the classification of the newborn according to the gestational age at birth, namely: at term, they are those born from 37 to 41 weeks, the post-term are the ones with gestational age at birth equal to or greater than 42 weeks. While premature births are before 37 weeks, which are sub-classified as extremely premature, less than 28 weeks, very premature, between 28 to 31 weeks and 6 days, and moderate premature, after 32 weeks of gestational age ⁽¹⁾.

Humanized care in the scope of neonatology is not only centered on newborns, but also on their family. For the neonatal population, family-centered care is essential to guarantee the care quality, the shortest hospital stay, to reduce morbidity and mortality, as well as to improve the prognosis ⁽²⁾.

The Nursing team in the approach to neonatal health develops humanized care when it proposes interventions centered on the family, with a view to achieving comprehensive care. On the other hand, nurses are committed to caring for the newborns, prioritizing attitudes of zeal and

safety that come from themselves and their team, in the different care scenarios focused on their care ⁽³⁾.

Thus, according to Ordinance No. 1 459, of June 24, 2011, which establishes the Rede Cegonha within the scope of the Unified health system – Sistema Único de Saúde SUS, the contexts of public health care that make up assistance to the newborn are: the delivery room, where the mother-baby binomial is attended during childbirth, and the joint accommodation, to which newborns are sent after birth with good vitality and remains in the company of their mother, until the moment of hospital discharge. In case of any complication, the recommendation of admission to a Neonatal Unit is evaluated, so that they receive semi-critical or intensive care.

The first stage of the Kangaroo Method is represented by the Neonatal Unit, in which highly complex care is offered to neonatal patients in serious conditions or at risk of death. This scenario must have a multiprofessional team to welcome and assist newborns and their families whenever necessary, in addition to cutting-edge technological support to carry out diagnosis and treatment necessary for the maintenance

of life ⁽⁴⁻⁵⁾.

However, in the face of situations of intermediate complexity, newborns are transferred to a Conventional Intermediate Care Unit (UCINCo). In this care setting, newborns are discharged or referred to the NICU, who need observation after 72 hours ⁽⁴⁾.

The second stage of the Kangaroo Method consists of care provided at an intermediate unit, the Kangaroo Intermediate Care Unit (UCINCa), which assists patients from both UCINCo and the NICU after clinical improvement. It is carried out with skin-to-skin contact, the family's preparation to care for the newborn with low birth weight before hospital discharge. Thus, it promotes the formation of the bond between newborns and their family, breastfeeding, enabling the family and/or the person responsible for home care ⁽⁵⁾.

Outpatient follow-up consists of the third stage proposed by the Kangaroo Method, which occurs after hospital discharge and may be linked to a high-risk outpatient clinic or Primary Health Care (PHC). All care scenarios aim at the humanization of care, through family-centered care ⁽⁵⁾, which consists of a care

philosophy that values the family as the main care unit.

In Europe, the humanization of neonatal care is fundamentally based on the rights of newborns with projects such as the "Child-Friendly Health Care Initiative", which was created in the United Kingdom, in collaboration with the United Nations International Children's Emergency Fund (UNICEF) and the World Health Organization (WHO), in 2000. This is an initiative that aims to reduce the suffering of newborns and their families through the practice of 12 standards: services designed especially for newborns and their families, empowering is about the care that will be provided, among others ⁽²⁾.

On the other hand, in the United States the humanization of neonatal care is centered on comprehensive family care and promoted with the "Family-Centered Rounds", groups carried out at the bedside. They aim at the construction, by the interdisciplinary team and the family, of a plan for the management of newborns ⁽²⁾.

In developing countries, with social disparities, the humanization of care is implemented through government programs, as an example of Brazil: the National

Program for the Humanization of Hospital Care (NPHHC) and the National Humanization Policy - HumanizaSUS. They aim to improve health care in general, and as government programs, consider the rights of the child, adolescent and family, which appear in the Federal Constitution and the Statute of the Child and Adolescent (SCA)⁽⁶⁾. The SCA, in its Art. 7, presents the child's right to health and the protection of life, through public policies that allow birth and healthy development⁽⁷⁾.

In view of the growing needs of hospitalizations and qualified attention to the health of newborns, supporting the strategies respecting the uniqueness of newborns, applying family-centered care, becomes essential for the improvement of nursing care. These strategies enable the qualification of health professionals, services and systems, with a positive impact on reducing morbidity and mortality in early childhood. It is concluded that the synthesis of scientific evidence can strengthen and substantiate nursing interventions to those of newborns, in different scenarios of health care. Therefore, the aim of this study was to identify nursing care for the newborn, in the different care settings.

METHOD

This is an integrative review based on Ganong's methodological framework (1887), in the recommended steps: 1) Elaboration of the research question; 2) Sampling; 3) Representation of the characteristics of the primary studies; 4) Analysis of the findings; 5) Interpretation of results; and 6) Presentation of the review⁽⁸⁾. The recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)⁽⁹⁾ were also applied.

At first, the research problem was structured using the following question: What are the neonatal nursing care performed in different care settings? This research question was developed according to the acronym PICO: P (population) - newborns; I (intervention) - nursing care; Co (context) in the different care settings⁽¹⁰⁾.

Data collection took place from January to March 2018, with the search strategy composed of the keywords "neonatal nursing", "nursing care", and "newborn", interspersed with the Boolean operator AND, in the databases: US National Library of Medicine (Pubmed), SciVerse Scopus, Medical

Literature Analysis and Retrieval System Online (Medline), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Web of Science. Descriptors were obtained from Medical Subject Headings (MeSH).

The criteria for the inclusion of primary studies were: articles in English, Portuguese and Spanish, focused on the newborn population, and published between 2015 and 2017. We opted for this time frame due to the intention of bringing together the most current knowledge, applied to nursing care for newborns, and who answered the research question. The exclusion criteria were: editorials from magazines, letters to the editor, abstracts in annals, revisions, and studies that addressed specific neonatal diseases with deepening in other professional categories.

The articles were selected by two independent reviewers, and during the selection process, there was no disagreement between them, and it was not necessary to include a third reviewer. Then, for the careful analysis of the methodological quality of the selected studies, the instrument proposed by Downs and Black (1998), named Checklist for

Measuring Study Quality⁽¹¹⁾, was applied. It consists of a total of 27 items, eight of which were not applied to the selected studies due to assessing the methodological quality of experimental studies, which are not included in the selection. Thus, 19 items were applied for analysis, and the responses recorded to the questions in the checklist were 'yes', 'no' and 'unable to determine'.

The primary studies included in the sample of this integrative review had scores above 14 points, that is, 70% of the checklist was answered positively, with 'yes'. The application of this instrument⁽¹¹⁾ in the last stage of article selection led to the exclusion of six studies, which did not have satisfactory methodological quality. The detailed process for the selection of primary studies is shown in Figure 1.

RESULTS

The sample of this integrative review was composed of 10 primary studies, of which 4⁽¹³⁻¹⁶⁾ were published in 2017, 2⁽¹⁷⁻¹⁸⁾ in 2016, and 4⁽¹⁹⁻²²⁾ in 2015. Brazil had the highest number of

publications, totaling 6^(13,17-21), the other studies were published in the following countries: United States of America ⁽²²⁾, Netherlands⁽¹⁴⁾, Italy⁽¹⁵⁾ and Indonesia (16). Regarding the language of publication, 5^(13,16-21) studies were identified in Portuguese and 5 in English ^(13-17,22). The authors of all the articles analyzed were nurses⁽¹³⁻²²⁾ who work in higher education schools, departments and hospitals.

As for the research designs, 7 studies^(13-17,21,22) had a quantitative approach and 3^(18, 20, 21) qualitative approach. Chart 1 presents the characteristics of each primary study according to the study design, level of evidence, participants, care setting, nursing care, and the main results. Each study was identified by a letter followed by its reference.

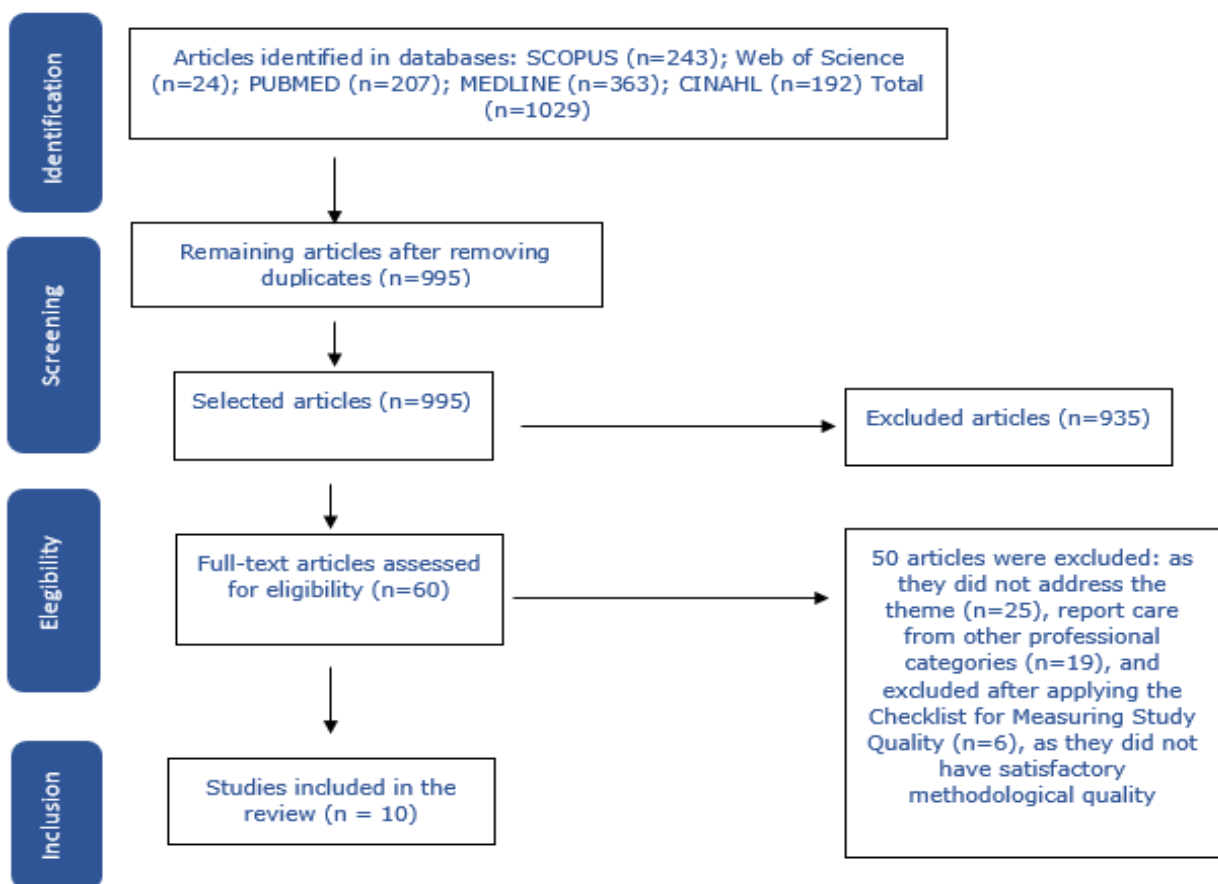


Figure 1 - Flowchart for the selection of primary studies included in the sample of this integrative review, according to the recommendations of PRISMA(9). Parana, Brazil, 2018.

Chart 1 – Characterization of the primary studies included in the sample of this integrative review. Parana, Brazil, 2018.

Id.	Study design	E.L	Participants	Care Scenario	Nursing Care	Main results
A ⁽¹³⁾	Observational	3.e	12 newborns	Neonatal Intermediate Care Unit (UCINCo)	Handling for procedures	The manipulation of newborns by the nursing team and its influence on sleep were evaluated. In 24 hours, there were, on average, 176.4 manipulations for: hygiene and comfort (change of decubitus), monitoring (repositioning of electrodes), therapeutics/diagnosis (administration of medications by gastric tube), and feeding (administration of diet by enteral tube). It was evident that there was no influence of the manipulations on the newborns' sleep for 24 hours. The study does not relate family to care.
B ⁽¹⁴⁾	Randomized Clinical Trial	1.c	15 newborns	Neonatal Intensive Care Unit (NICU)	Ventilatory positioning and support	The prone position was effective in improving the oxygenation status of premature infants in CPAP. It has been proven that this position can be applied as part of neonatal nursing care. The study does not relate family to care.
C ⁽¹⁵⁾	Observational	3.e	11 newborns	NICU	Winding and use of nests	Premature infants up to 35 weeks of corrected gestational age experienced stress during weighing and bathing. They showed a visible improvement after nursing care, bathing cloths and nesting were applied. The study does not relate family to care.
D ⁽¹⁶⁾	Observational	3.e	136 newborns	NICU	Ventilatory support	The training of the multiprofessional team and the implementation of guidelines for manual oxygen titration improved oxygen saturation in premature infants. The newborns remained for a longer time with the desired saturation, and less time and frequency of periods of frequent hyperoxemia. The duration of hypoxemia and hyperoxemia during apnea, as well as bradycardia and cyanosis, were shorter. The study does not relate family to care.
E ⁽¹⁷⁾	Observational	3.e	10 newborns	UCINCo	Positioning for sleep	The frequency of awakening was higher when the premature newborns were in the supine position, when compared to the prone or lateralized position (to the right or left). In the prone position, there was less frequency of awakenings, allowing more time for sleep. However, few nurses have placed newborns in this position. The study does not relate family to care.

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F ⁽¹⁸⁾	Descriptive	3	34 nursing professionals	NICU	Care related to comfort, protection and well-being	The precautions described were: pain assessment, reduction of sensory and environmental stimuli for sleep protection, rotation of the oximeter, attention to temperature leaving the newborn wrapped, positioning without raising the lower limbs, minimal handling, hand hygiene, comfort inside the incubator, warm hands before contact, moments of conversation and affection. In addition, the insertion of the family during hospitalization and participation in care, as a source of bond, improved communication between staff and family and security for the mother.
G ⁽¹⁹⁾	Observational	3.e	13 newborns	UCIN Co	Reduction of sensory and environmental stimuli	The total sleep time in moments without environmental management was, on average, 696.4 minutes and, with management, 168.5 minutes. Premature infants slept on average 70.2% in the periods with intervention and 58% without the management of the nursing team. The study did not relate family to care.
H ⁽²⁰⁾	Descriptive	3	14 nursing professionals	NICU	Prevention of skin lesions	Nursing professionals recognize the specificities of the skin of the hospitalized newborn, highlighting important and necessary care for the prevention of skin injuries, through the maintenance of thermal regulation, hygiene care, skin hydration and handling. The study did not relate family to care.
I ⁽²¹⁾	Analytical observational	3.e	5 nurses specialist in neonatology or pediatrics	NICU	Positioning	Neonates placed in dorsal, lateral or ventral decubitus, using nests, comfort rollers, swaddling, fabric diapers, bands and other materials. The prescription was in charge of nursing and physiotherapy, with the NICU team responsible for execution. The importance of guidance to parents on the positioning of the newborn to sleep at home was highlighted.
J ⁽²²⁾	Experimental	2.c	395 newborns	NICU	Safe sleep practices	Safe sleep practices can be integrated into the routine of caring for premature babies. The supine position, flat cradle without tilting, without positioning devices, and without toys or blankets stood out. They conclude that by modeling the practice of safe sleep, prior to hospital discharge, families will be able to improve adherence at home and there will be a reduction in the risk of sleep-related morbidity.

Notes: Id. = Identification; E.L. = Evidence Level.

Sources: References from 13 to 21(check at the end of the article).

Nursing performance in good newborn care practices was the focus of the results of all primary studies in this integrative review, which relate the fundamental importance of nursing performance, qualified in neonatal care, as part of the multiprofessional team. Although most studies^(13-17,19-20) do not relate the care provided with family coverage, it was understood in their discussions that the scenarios in which they were carried out apply the family-centered care philosophy, since they make insertion of the family in care.

DISCUSSION

Among the main nursing care for newborns discussed in the selected scientific literature, minimal handling^(13,17,19,22), positioning^(14,17,21), ventilatory support quality^(14,16), the use of cloths and nests for bathing and weighing⁽¹⁵⁾, the prevention of skin lesions⁽²⁰⁾, as well as the entire context of care related to comfort, protection and well-being⁽¹⁸⁾ were observed.

Providing quality sleep through safe sleep practices such as the supine position, the use of the flat crib without inclination and nest, without positioning devices, toys or blankets, enables the regulation of homeostasis and stimulates neurodevelopment. The sleep cycle qualifies the treatment and prognosis of the newborns, preventing neurological complications^(23,24).

Thus, worrying about making the NICU environment conducive to the preservation of sleep through safe sleeping practices, previously mentioned^(17, 19) can be considered a relevant long-term nursing care. The members of the nursing team present themselves as the main actors in the care interventions carried out to maintain the life of the newborn⁽¹³⁾. The nurses' conduct can influence the entire multidisciplinary team, as well as their families to continue in the home environment⁽²²⁾.

The ventral position, also known as prone, contributes to the reduction of awakening, providing a longer sleep time⁽¹⁷⁾. In addition to contributing to the sleep quality, this care also provides: improved digestion by enteral diet, reduces stress and pain⁽²⁴⁾, improves oxygenation,

especially for premature newborns using non-invasive ventilation⁽¹⁷⁾. This is a practice used in the different scenarios of care for newborns, being routinely introjected in nursing care. However, its adverse effects need to be considered, given the possibility of decreased cerebral oxygenation and the increased risk for Sudden Death Syndrome⁽²⁴⁾.

Regarding ventilatory support, in addition to the concern with proper positioning ⁽¹⁴⁾, for the improvement of pulmonary ventilation, the importance of implementing guidelines for the control of oxygen supply ⁽¹⁶⁾, is also discussed, in order to reduce hypoxemia. It is noteworthy that premature newborns with low birth weight need ventilatory support for a long time, due to pulmonary immaturity, and the oxygen offered promotes respiratory stress that results in pulmonary pathologies ^(16-22, 25), such as Bronchopulmonary dysplasia.

Bathing and weighing are nursing care that are present in the different scenarios of care for the newborn. When performed in the first 24 hours of life, they can cause neonatal stress⁽¹⁵⁾, due to the thermal and cardiorespiratory changes identified by the reduction of oxygenation.

Bathing is a cultural process, which has the benefits of cleansing the body, stimulating blood circulation to the skin and subcutaneous tissue, in addition to comfort and well-being⁽²⁶⁾. Its performance respecting the newborns' clinical criteria justifies a humanized care model.

In the prevention of adverse effects caused in relation to bathing, the implementation of other forms of skin hygiene is considered, such as the use of wet wipes and longer intervals of time⁽²⁷⁾. Likewise, during the weighing procedure, attention should be paid to minimal manipulation related to the newborn's clinical condition, the winding before placing it on the scale, to reduce thermal stress and preserve neurological protection, use of a digital scale to increase the speed and reliability of the procedure, and the support of the newborn's head with one of the professional's hands during mobilization⁽²⁸⁾.

Stress permanently affects the newborn's neurobiological, physiological and hormonal systems⁽²⁹⁾, and is also related to pain. For this reason, the nursing team needs to be sensitized and trained in the use of non-pharmacological measures for pain relief and stress control, such as: the

administration of glucose orally before performing painful procedures, the offer of non-nutritive suction, skin-to-skin contact, and use of winding, using tubular mesh and swaddling clothes, and facilitated containment⁽³⁰⁾ that represent humanization in the care offered to the newborn.

Nursing also acts in the care of the skin and implements care to prevent injuries at the time of the bath, such as: skin hydration, thermal control and handling of the fixations of invasive devices⁽²⁰⁾. The newborn's skin is immature, thin and permeable, in addition to having a greater extension of body surface in relation to its weight. It produces less sweat and has less adipose tissue, making them susceptible to heat loss. In the skin of the premature newborn, there is a decrease in electrolytes; water, proteins and, primarily, heat⁽³¹⁾.

A study carried out in Egypt points out that skin lesions were present in 76% of newborns admitted to an NICU, and of these, 41% were transient and benign lesions, such as miliaria and birth spots. Another important data identified is that fungal infections, such as candidiasis, occur due to the association between the immaturity of the skin and the immune system. Preventing injuries and

infections significantly contribute to improving the newborns' overall prognosis⁽³²⁾.

Thermal control of the premature newborn is a challenge. The reduction in body temperature is due to an imbalance between increased heat loss, which is not compensated for by its limited production. Nursing care is related to the prevention of heat loss, through the application of simple techniques such as wrapping the newborn's body and head in plastic right after birth, the use of heated incubators and cribs, exothermic mattresses, and skin-to-skin contact⁽³³⁾.

Furthermore, the promotion of breastfeeding is also a nursing care, and it was not discussed in the primary studies considered here. It provides weight gain and low birth weight in premature, promotes bonding, comfort and pain relief, adequate growth, development and neurodevelopment, in addition to increased survival with improved prognosis and decreased complications and morbidity and mortality⁽³⁴⁾.

Although the specialized care provided to the newborn, especially the premature, involves simple procedures, as

well as complex ones, the multiprofessional team must be alert to provide the newborns' interaction with their family, in order to strengthen the bond between them, and respect them as a subject and not as an object of work⁽³⁴⁾. The reception with clear information about the health status and the family's rights and duties contributes to family-centered care, establishing effective communication, trust and respect. Those are necessary aspects for a democratic relationship that makes evidence-based decision-making feasible⁽³⁵⁾.

It has been shown that primary studies express concern about the qualification of health professionals working in the NICU, to provide care for comfort and protection, especially for premature newborns. The absence of an up-to-date discussion on breastfeeding, vaccination, pain control, and nursing care in different care settings, including accommodation and delivery and appropriate settings for the promotion of care for the newborn and family.

CONCLUSION

Therefore, the application of nursing care to newborns with a focus on safe sleep practice, improvement of ventilatory support, minimal handling, reduction of sensory and environmental stimuli, use of nests and cloths to reduce stress in the bath and weighing, attention to skin hydration and temperature regulation to prevent injuries, stood out in the reduction of adverse events caused by interventions and aim at maintaining the survival of newborns, especially premature and low birth weight infants.

Therefore, the application of the scientific evidence identified about nursing care in the different scenarios of care for the newborn contributes to the development of nursing as a profession. Thus, it was possible to evidence that the studies that make up this review contribute to nursing care for newborns with a focus on individualized and family-centered care, which will reflect in better public health conditions by promoting the reduction of mortality indicators in the neonatal period, especially in the early neonatal period. In addition to positively impacting the reduction of morbidity and quality of life for these children, changing the health context of the community.

It is suggested to carry out further studies in order to provide the qualification of care practice in the neonatal care setting, in other settings, such as in the UCINCo, due to the fact that it is a service advocated by public health policies that follow guidelines for a humanized neonatal care model. Thus, this also happens in the Joint Housing, and in Primary Health Care, due to the recommended emphasis on the care offered is to promote health and prevent diseases in newborns.

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