

# Presentation of a clinical protocol for breastfeeding in rooming-in care

## Apresentação de um protocolo clínico direcionado ao aleitamento materno no alojamento conjunto

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### ABSTRACT

**Purpose:** Present a clinical protocol and indicator measurement system that contribute to monitoring the quality of speech therapy during breastfeeding in rooming-in care. **Methods:** A descriptive study carried out in a University Hospital in the Federal District, Brazil. Until the start of this study, there was no speech therapist responsible for feeding-related care in the rooming-in department. The possibility of practical activities and internships for speech therapy students was identified, but to that end, management action was needed. Thus, a clinical care protocol was designed in two stages: 1) compiling the proposed protocol in line with evidence-based practice; 2) assessment of its content and appearance by professionals involved in mother and child care. **Results:** The Mother and Child Speech Therapy Protocol (MCSTP; PASMI in Portuguese) consisted of the following: checking admission data on the medical chart; anamnesis; screening speech-language; assessing speech-language; providing speech-language guidance and generating quality indicators. These actions were described based on references and operational definitions. Average agreement in the expert assessment phase was 0.889. The judges' recommendations were accepted when supported by scientific evidence. **Conclusion:** The use of standardized care methods could ensure better speech-language care for mothers and babies and improve speech therapy training. Further research is needed to assess the effectiveness of the MCSTP in the target population.

**Keywords:** Speech-language; Rooming-in; Protocols; Validation studies; Breastfeeding

### RESUMO

**Objetivo:** Apresentar um protocolo clínico e um sistema de medição de indicadores que auxilie no monitoramento de qualidade da assistência fonoaudiológica ao aleitamento materno em alojamento conjunto. **Métodos:** Trata-se de um estudo descritivo, realizado em um hospital-escola do Distrito Federal. Até o momento inicial deste estudo, não havia um fonoaudiólogo no alojamento conjunto responsável pelo atendimento direcionado à alimentação. Foi identificada a possibilidade de atividades práticas e de estágio para os alunos do curso de Fonoaudiologia, mas para que isso fosse realizado, ações gerenciais eram necessárias. Iniciou-se a elaboração de um protocolo clínico assistencial, desenvolvido em duas etapas: 1) proposição do protocolo – utilizando-se a prática baseada em evidência; 2) avaliação do conteúdo e aparência do protocolo por profissionais envolvidos no cuidado materno-infantil. **Resultados:** O Protocolo Fonoaudiológico de Assistência à Saúde Materno-Infantil (PASMI) foi composto por: verificação dos dados de internação no prontuário; anamnese; triagem fonoaudiológica; avaliação fonoaudiológica; intervenção fonoaudiológica; orientação fonoaudiológica e geração de indicadores de qualidade. As ações foram descritas citando-se as referências de base e definições operacionais. A fase de avaliação por especialistas apresentou escore médio de concordância de 0,889. As considerações emitidas pelos juízes foram acatadas quando mostraram embasamento científico. **Conclusão:** A utilização de métodos padronizados poderá permitir a melhor assistência às condições de saúde fonoaudiológica do binômio mãe-bebê, assim como melhor formação de fonoaudiólogos. Novos estudos devem ser realizados, buscando verificar a efetividade do PASMI frente à população envolvida.

**Palavras-chave:** Fonoaudiologia; Alojamento conjunto; Protocolos; Estudos de validação; Aleitamento materno

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## INTRODUCTION

Clinical protocols are important because of the need to standardize care; applying these protocols makes teamwork easier and provides updated scientific knowledge<sup>(1)</sup>. Care protocols, that is, defining a specific care situation by describing operational activities and specifying implementation methods and the professionals responsible, can minimize differences in the conduct of healthcare professionals, favor patient and staff safety, allow the creation of process and outcome indicators and improve care quality and the rational use of resources<sup>(2)</sup>.

The conduct recommended in care protocols should be clear and precise regarding the expected outcomes in order to make them easier to understand and implement by professionals. Clinical guidelines should be compiled based on scientific evidence, according to their levels of recommendation and the quality, quantity and consistency of the reviewed studies<sup>(3)</sup>. Standard operating protocols should also describe the peer review format, implementation strategies and expected outcomes or results. Additionally, the team involved should take part in each stage of the process, assessing and validating the procedures when necessary<sup>(4)</sup>.

Measuring quality and quantity in the outcome indicators, results, processes and structure of health care services and programs as well as their influences and repercussions on the environment is vital to planning, organizing, coordinating and controlling the activities carried out<sup>(5,6)</sup>.

Rooming-in is the hospital practice whereby the baby remains with the mother during hospitalization and both receive all the necessary healthcare and guidance<sup>(7,8)</sup>. One of the benefits of this system is in terms of health education, since the practice requires not only less space and personnel, but provides high educational content<sup>(9)</sup>.

Speech therapists can perform a number of services in rooming-in, including providing guidance on breastfeeding and speech-language aspects. The goal is to benefit the baby and family and favor earlier discharge from the hospital, thereby reducing costs<sup>(10,11)</sup>. As an everyday element of healthcare, evaluating this service is important in order to identify weaknesses and opportunities for improvement<sup>(12)</sup>.

In the field of health care, best practices can contribute to controlling deterioration and qualifying the care provided and should be based on scientific evidence as well as the assumptions that guide health care and the National Health System (SUS)<sup>(12)</sup>. This encourages evidence-based critical thinking in healthcare professionals regarding their work process<sup>(13)</sup>. As such, the present study aimed to present a clinical protocol and indicator measurement system that contribute to monitoring the quality of speech therapy during breastfeeding in rooming-in care. The goal was to contribute to the strategic management of speech-language services by providing a more structured management framework based on recognized techniques.

## METHOD

This is a descriptive study conducted from March 2017 to July 2018 at a public university hospital in the Brazilian Federal District and approved by the Research Ethics Committee of the University of Brasília's Ceilândia Campus (protocol no. 2.642.964).

At the institution in question, rooming-in is part of the Mother and Baby Unit, which also includes the Neonatal Intensive Care Unit (NICU), obstetric emergency center and milk bank. According to its 2018 management report, an average of 1,097 deliveries are performed per month, approximately 400 of which are high risk.

Until the start of this study, there was no speech therapist responsible for feeding-related care in the rooming-in department or any processes resulting from speech-language practices. The possibility of practical activities and internships for speech-language students was identified, but to that end, management action was needed. Thus, a clinical care protocol was compiled in two stages. The first involved the proposed protocol, namely the Mother and Child Speech Therapy Protocol (MCSTP / PASMI in Portuguese), and the second, expert assessment of its content and appearance.

In compiling the protocol, an extensive nonsystematic literature review was performed to relate the object of study with its context by analyzing scientific sources on the subject in major databases (Medline, Cochrane Library, SciELO, Web of Science). The aim was to study the theory and practices developed in Brazil and abroad to compile a theoretical framework for the model. The main objective of this study was to systematize the feeding-related activities that speech therapists can and should perform in rooming-in. To that end, a theoretical foundation was sought for each activity identified (anamnesis, screening, assessment, intervention and management of data related to speech-language care) by analyzing recent studies and proposals<sup>(14-21)</sup>.

The initial version of the protocol was analyzed by 20 professionals involved in mother and baby care. The experts were selected by intentional sampling, based on the following inclusion criteria: having at least five years' experience in neonatal care, being specialized in their field and having participated in neonatology events in the last five years.

Ten agreed to take part in the study: pediatricians (30%), speech therapists (40%) and nurses (30%), only one of whom was male. All the experts had completed or were studying a specialty, with an average age of 36 years ( $\pm 9.38$ ), average time since graduation of eight years ( $\pm 6.45$ ) and experience in maternity hospitals and milk banks. Professionals from different fields were chosen because of the importance of multidisciplinary teams. The fact that speech therapists are not part of the medical and nursing teams at the hospital studied cannot be considered, and as such, we deemed that those not from this field could contribute to the stages of compiling the protocol.

The experts were asked to assess the scope, relevance and representativeness of the protocol, as well as the content of its operational definitions.

After providing written informed consent, the participants were emailed an assessment form and the initial version of the MCSTP (protocol + operational definitions).

The assessment form contained 19 questions divided into blocks and arranged on a Likert scale, and is presented in full in Annex 1.

The data were organized onto electronic spreadsheets and exported into statistical *software* (R v3.4). The Content Validity Index (CVI) was used to measure the proportion or percentage of experts who agreed on certain aspects of the protocol and its items. The acceptable agreement rate was defined as 75% or higher.

## RESULTS

The initial version of the protocol consisted of the following actions: checking admission data on the patient’s medical chart; anamnesis; speech-language screening (UNICEF Breastfeeding Assessment Protocol<sup>(15)</sup>); specific speech-language assessment (Preterm Oral Feeding Readiness Assessment Scale<sup>(16)</sup> and Protocol for Clinical Assessment of Pediatric Dysphagia - PAD-PED<sup>(17)</sup>); speech-language intervention; speech-language guidance and quality indicator generation. All the above actions were described in detail, citing baseline references and the content of operational definitions.

Table 1 shows the experts’ findings and CVI of each statement on the instrument used to analyze the care protocol. Mean agreement between experts was 0.889, indicating acceptable agreement.

The following three aspects of the initial protocol obtained a lower-than-expected CVI: “The protocol is suitable for speech therapists in general” (CVI = 0.70); The information is scientifically accurate” (CVI = 0.70) and “The writing style corresponds to the level of knowledge of professionals” (CVI = 0.70). In these cases, the considerations of each expert were taken into account and accepted when supported by scientific evidence. The following changes were suggested: including an additional screening protocol (Neonatal Tongue Screening Protocol<sup>(14)</sup>), removing one of the assessment protocols (Preterm Oral Feeding Readiness Assessment Scale<sup>(16)</sup>), and reducing the number of clinical quality indicators.

Thus, the final version of the MCSTP is described in detail in Appendix 1.

## DISCUSSION

This study presented a clinical protocol and indicator measurement system that contributes to speech-language care during rooming-in and the management of health services that

involve care associated with teaching practices. Compiling an instrument involves objectively, scientifically and comprehensively documenting information that makes it possible to identify diagnostics and then determine actions to ensure high-quality care<sup>(3,4)</sup>.

Devising procedures is considered an important strategy since the culture of patient safety in health facilities is a significant step in achieving quality health care<sup>(22)</sup>. Standardization is considered the most important management tool, and the related routines and procedures are viewed as the foundation of organizational safety<sup>(23)</sup>. Indicators are management instruments that guide excellence in care and the tools that healthcare professionals use to assess an activity, monitor aspects related to a certain reality and evaluate what happens to patients, indicating the efficiency and efficacy of organizational processes and outcomes<sup>(24,25)</sup>. Internationally, the use of indicators to measure hospital performance has become standard practice in recent years<sup>(25)</sup>. These points were taken into account in the present study, particularly because the service discussed could also be provided by students in training.

It is well known that rules and procedures are never a comprehensive safety solution. However, protocols are legal instruments compiled according to evidence-based practices that offer the best standardized and specific care options available<sup>(23)</sup>.

After the protocol was compiled, it was assessed by experts to ensure its quality, legitimacy and credibility<sup>(26)</sup>. This is based on the need for analysis by expert adjudicators in the field who determine whether the content is correct and relevant to its purpose<sup>(27)</sup>. In the present study, their critical assessment contributed to improving the instrument. The changes made were essential in adjusting the protocol and its future use as a public health instrument, contributing to advancing research in the field of neonatal speech therapy.

A common observation among the experts was in regard to the length of the protocol, since the two speech-language assessment instruments made it extensive and hampered clinical practice. As a result, the Preterm Oral Feeding Readiness Assessment Scale<sup>(16)</sup> was excluded because it does not assess

**Table 1.** Scores attributed by the expert adjudicators for each statement and the CVI of each item

Item/statement	A	B	C	D	E	F	G	H	I	J	CVI
1.1	1	3	2	1	1	1	2	2	1	1	0.9
1.2	1	3	2	1	1	1	1	2	2	1	0.9
1.3	1	3	2	2	1	2	2	3	2	1	0.8
1.4	2	3	3	2	1	2	2	2	2	2	0.8
1.5	2	3	2	2	1	1	2	3	2	2	0.8
2.1	2	4	2	1	1	2	3	3	2	2	0.7
2.2	2	2	1	1	1	2	2	2	2	2	1
2.3	2	3	2	2	2	3	2	2	2	3	0.7
2.4	2	2	1	2	1	2	2	2	2	2	1
2.5	1	1	1	2	1	2	2	2	2	2	1
2.6	1	3	2	2	1	2	2	3	2	3	0.7
2.7	1	1	1	2	1	2	3	3	2	2	0.8
2.8	2	1	1	2	1	2	2	2	2	2	1
2.9	2	1	1	2	1	2	2	2	2	2	1
3.1	2	2	2	2	1	1	2	2	1	1	1
3.2	2	3	2	1	1	1	2	2	2	2	0.9
3.3	1	1	2	2	1	1	2	2	1	1	1
3.4	2	2	1	1	1	1	2	2	2	1	1
3.5	2	4	2	1	1	1	2	2	2	2	0.9

**Subtitle:** 1 = Objectives; 2 = Layout and presentation; 3 = Relevance; letters = experts; CVI = Content Validity Index

the newborn in a feeding situation. Additionally, the Neonatal Tongue Screening Protocol<sup>(14)</sup> was included, in line with Law 13.002 of June 20, 2014, which makes this protocol mandatory.

The proposed changes were essential to validating and adjusting the protocol and expanding its use as a public health instrument, thereby contributing to advancing research in the field of neonatal speech therapy and improving the effectiveness of practices aimed at this population.

Applying the proposed protocol would allow dynamic systematized strategies to be developed that favor health promotion, maintenance and recovery in mothers and babies. The rooming-in system warrants special attention from healthcare professionals involved in mother and infant care, who are motivated by the mother-baby bond and guiding mothers on caring for their children<sup>(28)</sup>. Health education and promotion in rooming-in care involve creating ideal conditions and supervision by healthcare professionals to establish the mother-baby bond through stimuli, knowledge and guidance and make mothers' experience in the maternity hospital easier<sup>(29)</sup>.

Another important factor is the need to train health care professionals, particularly speech therapists and nurses, to carry out the new care model satisfactorily. However, it should be noted that simply compiling an instrument is not enough to guarantee the desired quality. The commitment of healthcare professionals is also essential and can be obtained through motivation and by describing competences.

## CONCLUSION

The MCSTP obtained an acceptable level of expert agreement. The use of standardized care methods could ensure better speech-language care for mothers and babies and improve speech therapy training. Further research is needed to assess the effectiveness of the MCSTP in the target population.

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**Annex 1.** Assessment form for the Mother and Child Speech Therapy Protocol - MCSTP (experts)**INSTRUCTIONS**

Please read the MCSTP carefully and attribute one of the scores below for each item:

Score

Totally adequate

2- Adequate

3- Somewhat adequate

4- Inadequate

When attributing scores of 3 or 4, please explain why you did so for that particular item. There are no right or wrong answers; what matters is your opinion. Please answer all the items.

ITEM	INSTRUCTION	STATEMENT	Score	Reason
				Remarks
OBJECTIVES	The goals or purposes to be achieved by using the care protocol	1.1 The information/content is consistent with the needs of mothers and babies during hospitalization.		
		1.2 The information/content is important to the quality of care provided to mothers and babies.		
		1.3 Invites and/or encourages changes in the behavior and attitude of speech therapists and of the multidisciplinary team in relation to speech therapists.		
		1.4 Can be circulated in scientific literature about the field		
		1.5 The protocol meets the objectives of the institutions that provide rooming-in and those of the department itself.		
LAYOUT AND PRESENTATION	How the protocol is presented, including its general organization, layout, presentation strategy, coherence and format	2.1 The protocol is suitable for speech therapists in general		
		2.2 The information is presented clearly and objectively.		
		2.3 The information is scientifically accurate.		
		2.4 There is a logical order to the proposed content.		
		2.5 The information is well structured and grammatically correct.		
		2.6 The writing style corresponds to the level of knowledge of professionals.		
		2.7 The topics and the length of the title are appropriate.		
		2.8 The illustrations are expressive and sufficient.		
		2.9 The number of pages is adequate.		
RELEVANCE	Characteristics that assess the degree of significance of the material presented.	3.1 The topic portrays key aspects that need to be addressed		
		3.2 The protocol systematizes speech therapy practices for rooming-in care in different maternity hospitals.		
		3.3 The protocol proposes knowledge construction.		
		3.4 The protocol addresses important issues for speech therapists and other professionals involved.		
		3.5 The protocol is suitable for use by any speech therapist in the unit.		
GENERAL COMMENTS AND SUGGESTIONS	Important: Comments and suggestions on nonconformity and possible adjustments will be considered provided they are supported by the scientific literature.	-	-	

## Appendix 1. Mother and Child Speech Therapy Protocol - MCSTP

MOTHER AND CHILD SPEECH THERAPY PROTOCOL - MCSTP	
STAGE	DESCRIPTION
ANALYSIS OF ADMISSION INFORMATION ON THE PATIENT CHART	The minimum data required are:
	- date of birth;
	- gestational age and corrected age;
	- mother's age;
	- type of delivery;
	- birth weight;
	- current weight;
	- use of tracheostomy or feeding tubes;
	- diagnosis of: neurological, respiratory, gastrointestinal and cardiovascular disorders, facial deformities or syndromes that prevent oral feeding.
ANAMNESIS	Questions for the mothers/caregivers that encompass at least:
	- number of children;
	- previous breastfeeding experience;
	- breastfeeding guidance during prenatal care;
	- breastfeeding guidance during postnatal care;
	- breast status;
	- difficulties experienced to date.
SCREENING	The instrument should include:
	- Neonatal Tongue Screening Protocol <sup>(14)</sup> ;
	- UNICEF Breastfeeding Assessment Tool <sup>(15)</sup> .
	If abnormalities are identified (flaws in the Neonatal Tongue Screening Protocol and/or a poor or regular score on the UNICEF Protocol), mother and baby should be referred for specific speech-language assessment.
	If no abnormalities are identified, speech therapy guidance should be provided and discharge approved.
SPECIFIC SPEECH-LANGUAGE ASSESSMENT	The following standardized protocol should be used for clinical assessment of infant feeding function:
	- "Protocol for Clinical Assessment of Pediatric Dysphagia" (PAD-PED) <sup>(17)</sup> .
	Newborns that receive a score of one on the protocol – normal swallowing – will be deemed eligible for oral feeding. In this case, speech therapy guidance will be provided and discharge approved.
	Newborns that receive a score of two on the protocol – normal swallowing – will be deemed eligible for oral feeding, with some postural changes and/or myofunctional training likely needed.
	For scores of three (moderate to severe dysphagia) or four (severe dysphagia), oral feeding will be suspended and an alternative recommended.
	For scores of 2 to 4, newborns should be referred for speech therapy intervention.
SPEECH THERAPY GUIDANCE	The main objective is to ensure the effectiveness of breastfeeding and provide the necessary conditions for the mother/family to continue breastfeeding after discharge from the hospital.
	In this stage, the norms of the Brazilian Ministry of Health's "Promoting Breastfeeding" series <sup>(18)</sup> should be followed, as well as specific information about the relationship between breastfeeding and speech-language health <sup>(19,20)</sup> , addressing issues such as:
	- orofacial motor skills – development;
	- language – development;
	- hearing – development.
SPEECH THERAPY INTERVENTION	Behavior by the mother that interferes in the breastfeeding process and orofacial disorders should be addressed using specific techniques. This stage will follow the findings identified in the literature review <sup>(20,21)</sup> , which stipulate the use of direct, indirect and feeding management techniques.
	Possible techniques that could be used in this stage are described below and should be applied in accordance with the needs of each individual case.
	- Advise the mother/caregiver of orofacial disorders and associated risks and the objectives of speech therapy, in order to promote active participation in the treatment process: use of figures, videos and specific programs (3D simulators) to visualize the functioning of facial muscles and the physiology of suckling.
	- Stimulating the rooting and sucking reflexes: 1) Elicit the rooting reflex by touching the newborn's (NB) perioral region with your little finger; 2) Once rooting occurs, stimulate the sucking reflex: place your little finger into the NB's mouth and press down lightly on the tongue or palate. The tongue should curl around the finger and pass the lower gum, initiating the sucking movement; 3) Gently squeeze the breast and latch the baby onto it once the milk ejection reflex has been activated.
	- Adjust intraoral pressure: 1) Place your little finger inside the NB's mouth with the palm of your hand facing up. Press the palate for 3 seconds, then turn and lower the finger, sliding it across the surface of the tongue, then touch the palate again; 2) Stimulate non-nutritive sucking.

## Appendix 1. Continued...

MOTHER AND CHILD SPEECH THERAPY PROTOCOL - MCSTP	
STAGE	DESCRIPTION
SPEECH THERAPY INTERVENTION	- <u>Adjust the lip seal</u> : 1) Manually reposition the lips if inverted; 2) Press down and move your finger toward the NB's ear and then down toward the lips, making a "C". Repeat on the other side; 3) Place your index finger in the corner of the NB's upper lip, press down and make circular movements from one side of the mouth to the other. Repeat in the opposite direction on the lower lip; 4) Place your index finger below the NB's nose on the upper lip, maintaining pressure and stretching the upper lip downwards to close the mouth. Repeat the procedure for the lower lip, stretching it upwards to close the mouth.
	- <u>Eliminate biting</u> : 1) Stimulate the rooting reflex and facilitate proper latching; 2) During breastfeeding, help contain the jaw by supporting it with your index or middle finger, encouraging the NB to open his/her mouth so that the tongue protrudes on sucking; 3) Place your index finger at the center of the upper gum and move it slowly and firmly toward the bottom of the mouth. Return to the center and repeat in the opposite direction and on the lower gum.
	- <u>Adjust the position of a rear resting tongue</u> : 1) Stimulate the sucking reflex using a gloved little finger and move the tongue forwards.
	- <u>Assess breastfeeding efficiency and sucking/breathing/swallowing coordination</u> : 1) Perform cervical auscultation concomitantly to breastfeeding, placing the pediatric stethoscope in the area of the NB's larynx; 2) Observe the sucking rhythm and swallowing flow, paying particular attention to breathing pauses.
	- <u>Assist in maintaining behavioral readiness (alert) for breastfeeding</u> : 1) When the newborn is sleeping, wake him/her to encourage alertness, remove any clothing and manipulate the arms and legs, touching the palms of the hands and soles of the feet; 2) When the NB is irritable or crying, help soothe him/her using a holding technique, folding the arms across the chest and placing the baby in lateral decubitus. When necessary, bring the NB's hands close to his/her face/mouth; 3) Use taste stimulation (preferable the mother's breastmilk) on your gloved little finger or the mother's nipple, placing into the baby's mouth to wake or soothe him/her (when irritable or crying), encouraging alertness.
	- <u>Promote correct latching</u> : 1) Correctly position mother and baby (the mother should be relaxed and comfortably positioned, the head of the NB in line with his/her trunk, belly to belly); 2) Trigger the rooting reflex by touching the nipple to the baby's perioral region; 3) Wait for the baby's mouth to open before latching; 4) Check for an everted lower lip; 5) Most of the areola should be in the baby's mouth; 6) Check that the airways are not obstructed; 7) The mother should not feel any pain and there should be no clicking sounds.
	- <u>Prevent breast disorders</u> : 1) Monitor correct latching; 2) Do not offer the breast when full or engorged; 3) Keep the breasts dry; 4) Allow the baby to feed on demand; 5) Use a breast pump when needs; 6) Do not apply hot water bottles, hot compresses or hot shower water; 7) Seek professional help; 8) Avoid applying creams, oils or ointments to the nipples. Switch to your own milk.
	- <u>Provide guidance for parents regarding posture, supply, consistency and utensils</u> : 1) Test different consistencies, utensils and postures when offering food, observing physiopathological changes, in order to reduce the risk of laryngeal penetration and/or laryngotracheal aspiration and optimize swallowing efficiency, shortening preparation time oral transit time; 2) Demonstrate the proper use of tested utensils suited to the oral motor skills of each child.
	- <u>Optimize the intraoral sensory response in conditions of intraoral hypersensitivity</u> : 1) Apply sensory stimulation using tactile stimuli, initially in areas of the body other than the face, such as the hands and feet; 2) Use different textures and temperatures; 3) Next, perform the same tactile stimulation on the face; 4) Playful activities should be used throughout stimulation, including visual and auditory stimuli; 5) Perform intraoral stimulation using tactile, thermal and/or taste stimuli, starting at the front of the mouth and moving towards the back depending on the baby's receptiveness; 6) Apply intraoral touch pressure, lowering the number of repetitions, strength and depth.
	- <u>Optimize the intraoral sensory response in conditions of intraoral hypersensitivity</u> : 1) Perform sensory stimulation using tactile stimuli in different areas of the body, such as the hands, feet and face. Stimuli can provide a wealth of sensory information; 2) Perform intraoral stimulation using different flavors, temperatures and textures, preferring stronger stimuli such as citrus flavors, cold temperature and unique textures; 3) Apply intraoral touch pressure, lowering the number of repetitions, strength and depth.
	- <u>Shorten oral transit time</u> : 1) Optimize sensory responsiveness, as previously described; 2) Adjust food consistencies; 3) Practice offering food.
	- <u>Reduce or eliminate clinical signs that suggest laryngeal penetration and/or laryngotracheal aspiration before swallowing</u> : 1) Correct body posture when offering food, particularly in the neck regions; 2) Adjust food consistencies.
	- <u>Reduce or eliminate clinical signs that suggest laryngeal penetration and/or laryngotracheal aspiration before swallowing</u> : 1) Adjust food consistencies; 2) Promote sequential swallowing.
- <u>Increase the frequency of saliva swallowing</u> : 1) Perform digital stimulation of the oral vestibule; 2) Use an elastic bandage in the region of suprahyoid muscles (specific training is required for this technique).	
QUALITY INDICATORS	Quality indicators should be used to monitor application of the care protocol. The proposed indicators were adapted from a study <sup>(30)</sup> that compiled indicators to manage swallowing rehabilitation outcomes in inpatient units (IUs) and adult ICUs. These include:
	PROCESS
	- Care provided per patient: Total number of sessions/ no. of patients treated;
	- Assessment rate per inpatient unit (IU) (rooming-in and kangaroo care): No. of assessments per IU/total no. of assessments
- Speech therapy assessment index: Total assessments/ no. of hospitalizations (hospital admissions)	

## Appendix 1. Continued...

MOTHER AND CHILD SPEECH THERAPY PROTOCOL - MCSTP	
STAGE	DESCRIPTION
QUALITY INDICATORS	RESULTS
	- Index of exclusively breastfed newborns at discharge: Total number of newborns treated/ number of exclusively breastfed newborns at discharge
	- Breast disorder rate: Total number of patients treated/ number of patients with breast disorders
	- Rate of newborns with lingual frenulum disorders: Total number of newborns treated/ number of newborns treated with lingual frenulum disorders
REMARKS	- Rate of exclusively breastfed newborns with lingual frenulum disorders: Total number of newborns with lingual frenulum disorders/ number of exclusively breastfed newborns
	- No bottles, intermediate silicone nipples or any other instrument not approved by the standards of the Baby Friendly Hospital Initiative (BFHI) will be used in BFHI-registered facilities.
	- All cases will be discussed with the multidisciplinary team (pediatricians, nurses and nursing technicians) in order to standardize conduct, ensure continuity of care and provide the best possible experience for mother and baby during the hospital stay.