

RECOMMENDATIONS FOR THE KANGAROO MOTHER CARE PROGRAMS DURING THE COVID-19 PANDEMIC IN COLOMBIA

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1. Introduction

Kangaroo Mother Care programs (KMCP) are the most important Colombian contribution to the world in neonatology, it is the key strategy in the ambulatory management of premature or Low Birth weight (LBW) newborns in Colombia. Within this philosophy, a commitment is needed in the Covid-19 contingency to establish recommendations or guidelines that guarantee the KMCP continuity, opportunity, and the safety of the premature and LBW newborn and its family.

The KMCP also promotes a favourable environment of protection, stimulation, empowerment, bonding and love between the fragile baby and the mother and the family that favours an adequate development and growth. It offers support and security tools to parents and family members, in order to minimize the emotional impacts experienced in situations of stress and ignorance that may affect the health of their children during the pandemic.

This document provides a tool for the health professionals who work in the KMCP, and allows sharing experiences to achieve the best management and monitoring approach of this vulnerable population, according to the local, national and global context.

It is the second edition of the recommendations, modifications to the first edition are based on a survey done in 40 KMC programs

The early discharge from hospital with the premature or low birth weight infant in kangaroo position with breastfeeding reduces hospitalization time and severe infections, improves the rate of breastfeeding and empowers the mothers in the care of their child. Without a doubt, the mother-child bond from the moment of birth is vital and the initial attachment according to a “zero separation” policy is a fundamental part of the maternal-perinatal route. It must not be forgotten that, in this period of pandemic, only in very specific cases, an initial separation between the mother and her child can be necessary to reduce the risk of generating infections.

These recommendations consider the protection of health professionals, patients and their family, bearing in mind that more than 50% of COVID-19 cases are asymptomatic, and permanent protection measures will minimize risks and allow to continue with timely attention in the different institutions.

2. Birth

The different care scenarios of the newborn from the moment of birth will be considered, to ensure adequate care and minimize any risk of contagion.

2.1 Healthy Mother (asymptomatic, without suspected infection or close contact with SARS-COV2) and stable asymptomatic premature or LBW newborn

Management: The following scenarios are considered:

- Joint accommodation, breastfeeding, immediate skin-to-skin contact and guaranteed discharge to a Kangaroo Mother Care Program (KMCP) for close follow up.

- Hospitalization for immaturity or instability according to institutional protocols with KMC adaptation to breastfeeding and skin to skin contact according to the KMC technical guidelines of the Ministry of Health of Colombia.

Biosecurity measures for personnel: during delivery care, N95 mask, glasses or mask, gloves, leggings and an anti-fluid gown or surgical gown. During care in joint accommodation, hand washing and conventional mask.

Biosecurity measures for the mother: conventional mask from the moment she enters the delivery room and during her hospital stay and hand washes.

2.2 Asymptomatic mother* with suspected or confirmed infection with SARS-COV2 and asymptomatic newborn:

The following aspects are considered:

- Asymptomatic and stable late preterm or low birth weight (LBW) newborns.
- Signed informed consent (see Annex 1) must be made by the mother and a caregiver, with detailed information on the risks of horizontal transmission and benefits for skin-to-skin contact interventions and direct or extracted breastfeeding (based on evidence available to date).

Management: Three scenarios are considered:

- **Joint post-partum accommodation** in a single room, with skin-to-skin contact and consensual breastfeeding with the family, in drops isolation regime between mother and child, up to a negative RT-PCR of the mother, crib two meters from the bed of the mother when the child is not in skin-to-skin contact or breastfed. These neonates will undergo daily clinical follow-up recorded in the medical record, kangaroo adaptation, and control of biosecurity measures. The staff (at least the nursing assistant) who is in charge of the care of the mother COVID+ or suspected COVID with her baby should provide exclusive care to these patients.
- **Home management:** If the newborn is not hospitalized and if the mother signs the consent for joint accommodation with isolation measures at home, the discharge will be given with all the indications of protection for the mother, the baby and the family.
- **Hospitalization:** If the mother cannot respect the terms of the quarantine and a healthy caregiver is not available, the child is hospitalized and isolated in the neonatal unit.

Biosecurity measures for personnel: N95 face mask, glasses and masks, disposable surgical gown, leggings, gloves. Routine disinfection of surfaces with which the mother has been in contact.

Biosecurity measures for the mother: hand hygiene, conventional mask and separate crib 2 meters from the mother's bed when the child is not in kangaroo position or eating and is in joint accommodation. Routine disinfection of surfaces with which the mother has been in contact.

** The pauci-symptomatic mother for COVID 19 behaves like the asymptomatic mother (Annex 2)*

2.3 Symptomatic mother and/or newborn, confirmed for SARS-COV2 infection:

During the isolation of the mother and her child, video telephone information is a suggested strategy, exclusive to parents.

Management: In case of not having breast milk due to the critical condition of the mother, consider alternatives such as certified bank milk and as a last option substitutes for BF. The following scenario is considered:

- Admission to the Neonatal Unit: for management of the newborn according to the clinical picture. It is recommended that the personnel who are in charge of the RN of a confirmed or suspected COVID mother be dedicated only to these patients.

Biosecurity measures for personnel: N95 face mask, glasses and masks, disposable surgical gown, gloves.

Biosecurity measures for the mother: Visits in the unit will not be allowed while the mother is positive for SARS-COV2.

2.4 Symptomatic mother **, confirmed for SARS-COV2 infection and asymptomatic newborn

Whenever possible, the non-separation of mother and child and breastfeeding should be favoured while the clinical condition of the mother and child allow it.

Feeding with expressed breast milk as an option given the demonstrated benefits. In case of not having breast milk due to the critical state of the mother, consider alternatives such as certified milk from bank milk and as a last option substitutes for BF.

Management: During the isolation of the mother and her child, telephone or video information is a suggested strategy, being exclusively for parents. The following scenarios are considered:

- Admission to the Neonatal Unit: for the isolation of the newborn. It is recommended that the personnel who are in charge of the NBs of the COVID + or suspect mother be dedicated only to these patients.
- Management by a caregiver: When in-hospital care is not possible and there is a trained caregiver, management can be continued at home, until a negative RT-PCR report for the mother's COVID-19 and disappearance of symptoms.

Biosecurity measures for personnel: during the handling in the unit and until the result of the RT-PCR of the newborn, use of N95 face mask, glasses and masks, disposable surgical gown, leggings, gloves.

Biosecurity measures for the caregiver: hand hygiene, surgical mask and aseptic measures during the feeding of the NB.

** For the pauci-symptomatic mother, it is possible to offer joint accommodation in an individual room, with skin-to-skin contact and consensual breastfeeding with the family, in isolation of drops between mother and child, until mother's RT-PCR negative, crib two meters from the mother's bed when the child is not in skin-to-skin contact or breastfed. These neonates will undergo daily clinical follow-up recorded in the medical record, kangaroo adaptation, and control of biosecurity measures. The staff (at least the nursing assistant) who is in charge of the newborns of the COVID+ or suspected mother should provide exclusive care to these patients.

Always remember the virus survival time (Wuhan, China guide):

Air 10 - 15°C 4 hours
Cough drops 25°C 24 hours
Nasal mucus 56°C 30 minutes
Liquids 75 °C 15 minutes
Hands 20 - 30°C <5 minutes
Clothes 10 - 15°C <8 hours
Wood 10 - 15°C 48 hours
Stainless Steel 10 – 15°C 24 hours
Alcohol at 75% Any temperature <5 minutes
Lavandin Any temperature <5 minutes

3. In-hospital Kangaroo adaptation at the URN: Kangaroo position and breastfeeding. The main concern is the separation of the mother and her child with its possible long-term consequences.

3.1 General measures for asymptomatic parents (without suspected infection or close contact with SARS-COV2)

- The open neonatal unit for the whole family will be interrupted until the end of the pandemic.
- Only the 24-hour admission of a companion, mother or father will be authorized; grandparents and siblings will not be able to attend.
- Skin-to-skin contact in asymptomatic mothers (without suspicion or COVID -) of hospitalized babies will not be limited, skin-to-skin contact will be individualized. It will be considered the need for this strategy, the maternal condition and the support network available.
- Telephone or virtual information is a suggested strategy for parents and caregivers, as well as information provided in the mother's room (even hospitalized) by the doctor.
- The feeding with breast milk will not be interrupted in any case, the extraction and assisted feeding will only be recommended if the clinical state of the mother or the newborn does not allow breastfeeding or is the wish of the parents.

3.2 General measures for parents with suspected or confirmed SARS-COV19

- While the mother confirmed for COVID19 + is in her quarantine, whether or not she has symptoms, she cannot enter the neonatal unit to visit her newborn. To enter she must show a negative test and if it is positive, it is repeated every 7 days until a negative report.
- An asymptomatic relative without prior contact with the parents can replace the parents by carrying the child in skin-to-skin while they quarantine to avoid the impact of a prolonged hospitalization with total separation.
- In case of not having breast milk due to the critical condition of the mother, consider alternatives such as certified milk from bank milk and as a last option substitutes for BF.
- The personnel who are in charge of the newborn of the COVID + or suspect mother are dedicated only to these patients.

3.3 Minimum biosecurity measures for parents (protocol of each institution)

- The companion must keep a conventional mask.
- When they arrive at the health service, they must follow the instructions of the newborn unit (washing hands with soap before and after leaving the unit and every three hours, remove enamel and accessories, collect hair, etc.)
- Upon returning home, it is recommended to change clothes and shoes, wash hands and face, disinfect clothing and accessories they bring from outside, and other preventive measures.

- Hand washing and all other preventive measures can be part of a written and verbal instruction for companions and their contacts.

3.4 Minimum biosecurity measures for health personnel

According to the protocol of the Ministry of Health, of the institution and the eventuality of contact with aerosol or fluids:

- Hand wash, surgical mask, anti-fluid blouse, gloves, glasses or masks.

4. Outpatient consultation until 40 weeks of gestational age (first phase): Kangaroo mother care program follow-up.

We must ensure the monitoring of this population at risk throughout the pandemic period.

4.1 Periodicity of controls

- The first consultation must be imperatively in the first 48 hours after discharge. They are small babies and kangaroo adaptation (position and nutrition) needs to be controlled and reinforced for greater safety at home.
- The initial controls must be carried out in the KMCP, according to the technical guidelines of the health ministry, but individualizing each case, and can be made less frequent if the evolution of the newborn allows it, according to the concept of the doctor and the nurse, and the possibility to do a follow up by phone or video at home.
- In case of an urgent question, parents are given a 24-hour emergency phone number, 7 days a week, and a triage is carried out by phone call, avoiding the useless and dangerous displacement to the emergency department of a hospital.

4.2 Logistics of the outpatient consultation up to 40 weeks

- If the situation allows it, organize 2 work teams to take turns and thus reduce exposure. Consultation hours may be lengthened to meet attendance hours.
- The first nursing and pediatric consultation should be carried out in person on a regular basis.
- Where the care center allows it, the consultation can be carried out in individualized room, which comply with the qualification standards and which have good ventilation.
- If the consultation area is collective, it must be adapted so that the distance between the patients is 2 meters.
- Pediatricians and nurses can be redistributed in the room to leave a space of 2 meters between each one during the consultation. Large rooms have good ventilation.
- Telephone follow-up of the newborn is considered necessary.
- Implement study authorization methods, procedures and medications during the virtual consultation.
- During the consultation, the cell phone should not be used, once the hands of health professionals and parents have been washed.
- Ophthalmology screening (ROP detection) should NOT be suspended and the professional's minimum biosecurity measures are more demanding: they must have glasses, face shield, N95 mask, gloves and anti-fluid blouse.

4.3 General measures for attending the outpatient control consultation.

- Only 1 companion per patient will attend the consultation with the kangaroo baby, ideally the mother, otherwise the father. This person must be HEALTHY. You will NOT be able to receive in the KMCP any companion if sick.
- Each Program must have a person in charge of communication with the parents the day before the consultation and to detect and monitor respiratory symptoms. In addition, you must conduct educational talks on the coronavirus and the prevention of COVID diffusion in the KMC program, during transportation and at home.
- It is also suggested to implement a triage station or a person in charge of receiving and detecting the patient and companions with fever or respiratory symptoms and in this case reschedule their appointment.
- In case of oxygen dependency of the baby, two healthy companions will be allowed, with the clarification that only one person enters the consultation.
- Grandparents, siblings or companions under 18 and over 60 will not attend.
- If the newborn presents respiratory symptoms, the appointment will be rescheduled for one week, daily monitoring by telephone of the condition of the newborn registered in the medical record, or refer to the emergency department if necessary.
- The mother diagnosed with COVID19:
 - ✓ Should not attend the consultation until the end of the quarantine.
 - ✓ The child should be skin-to-skin with a healthy family member who must have a conventional mask and, if possible, carry expressed breast milk to administer during the consultation.
 - ✓ The KMC program's physician must be informed of the mother's diagnosis.
 - ✓ Parents should be informed of the management protocol of COVID19 at home, the mother isolated in a room, daily shower, use a conventional permanent mask, hand washing before feeding her baby or carrying him in kangaroo position.
 - ✓ The ideal is to have the support of a family member to help to carry the baby in the kangaroo position during the indicated period of isolation and transfer him for feeding every 2 hours with a period of short kangaroo position with the mother and this person will attend the consultation with the baby. This family member must respect the protocol when the mother touches or brings the child to her: surgical mask and hand washing.

4.4 Biosecurity measures for professionals

- Wash your hands frequently with simple or antimicrobial soap and rinse with water before entering the consultation, after each consultation, at least every 3 hours and after leaving the consultation.
- Hand washing in compliance with the 5 moments recommended by WHO
- Dry your hands with paper towels.
- Health personnel should wear their personal protective equipment (surgical mask, goggles, gown and use of gloves if there is exposure to body fluids, feces or breast milk, for example).
- Wear gloves and N95 mask if you are going to perform a procedure that generates aerosols.
- Have a protection kit for health personnel available, in case of emergency resuscitation in the KMC program.
- Use of N95 masks up to 8 hours. In case of shortages, contemplate reuse according to institutional regulations, if its integrity is maintained.

- The nurses performing the kangaroo adaptation should be vigilant and wear gloves for breastfeeding, nutrition and teaching to the mother how to carry the baby in kangaroo position.
- Avoid touching your eyes, nose and mouth, since the hands facilitate transmission.
- Regular disinfection of the tables and chairs in the KMC program during the day with antiseptic according to institutional protocol. The consultation table must be lined with plastic, which allows disinfection with antiseptic after each patient.
- Hand washing should be preferred after consultation, gloves give a false sense of security and may contaminate.
- Disinfection of the equipment used (stethoscope, otoscope, meter, thermometer) between each patient with disposable towels humidified with antiseptic (70% alcohol).
- Practical education in each consultation on hand washing, use of a mask and basic hygiene recommendations.
- Recommend the careful respect of the protection measures to leave and enter your own home.
- Professionals must arrive in street clothes and change clothes in the entrance in the KMC program. The ideal is to change clothes and uniforms every day.
- In the vaccination service: maintain biosecurity measures for aerosols.

4.5 Biosecurity measures for patients and companion

- They must come to the consultation with a mask, collected hair, without jewellery
- The suspected or confirmed mother for COVID-19 is unable to attend the KMC program consultation, the caregiver of the baby will assist.
- Only one companion enters the consultation with the baby.
- Hands should be washed frequently with simple or antimicrobial soap and rinse with water before entering and leaving the consultation,
- They must participate in the hand washing workshop, fulfilling the 5 moments recommended by WHO
- Hands should be dried with paper towels.
- Designate two people in the house to be in charge of the entire care of the newborn kangaroo, considering the care recommendations published in the Ministry of Health.
- The parents in charge must be kept in social isolation, they must not leave the house except for the controls of their kangaroo baby.
- Regarding the masks of the children who come to the consultation, there is a lack of evidence on their safety in home-made manufacturing. It is neither promoted nor prohibited.
- Breast milk feeding will not be interrupted even in cases of mothers confirmed with COVID 19 at home. Parents are involved in deciding the mode of administration and signed consent is considered. There is no published evidence up to date of transmission of SARS-COV2 in breast milk.
- The kangaroo position at home will be maintained in confirmed asymptomatic mothers for COVID19 during quarantine, according to the parents' decision.

5. High-risk Kangaroo follow-up (40 weeks up to at least 12 months of corrected age)

5.1 General measures

- Second-phase controls with the entire multidisciplinary team (pediatrician, nurse, psychologist, optometrist, audiologist, ophthalmologist, etc.) should be restarted slowly (depending on the evolution of the pandemic), prioritizing cases.
- Teleconsultation must be carried out in special and defined cases.
- In-person consultations according to the kangaroo technical guidelines starting with the highest-risk children: Vaccines, children with oxygen, children with a history of chronic pathology such as cardiac malformation, growth (failure to growth), altered neurological development, negligent mothers or any pathology that the pediatrician considers that face-to-face consultation is necessary with the agreement of the parents.

6. Vaccination during the COVID19 pandemic in preterm or low birth weight infants p (phase 1 or phase 2) in a KMC program

- Vaccination in newborns born from asymptomatic mothers (without suspected or negative SARS-COV2 infection) should be carried out in accordance with current national program recommendations and current KMC technical guidelines from the Ministry of Health.
- Vaccination in preterm infants should be done according to chronological age.
- It is recommended to the family to be vaccinated against pertussis and influenza in their health insurer, or the place that corresponds.
- The indication for immunization with Palivizumab is the same as in preterm patients prior to the COVID pandemic, according to the guidelines of the Ministry of Health of the healthy premature (during the epidemic peak, less than 32 weeks, from 33 to 35 weeks with oxygen dependence, all under 6 months).
- The Ministry of Health, during the COVID-19 pandemic, regarding timing in vaccination schedules, recommends:
 - ✓ In the case of a mother confirmed for Coronavirus, the application of vaccines for the newborn is deferred 28 days, after verification of the health status of the infant
 - ✓ If the mother is a contact of a case of Coronavirus, she is asymptomatic and the newborn does not present symptoms, the application of vaccines is deferred once the preventive isolation period of at least 14 days has passed, after verification of the health status of the infant.
 - ✓ In a mother with unknown status for Hepatitis B, or a positive mother for Hepatitis B, with suspicion or confirmation for COVID-19, the Hepatitis B vaccine and immunoglobulin should be applied to the newborn in the first 12 hours according to circular 045 of 2013.
 - ✓ Vaccination against rotavirus: guarantee the application of the first dose before 3 months and 21 days in order to prevent the child from losing the vaccine scheme.
 - ✓ Vaccination against seasonal influenza southern strain: infants between 6 to 23 months should be vaccinated, according to the guidelines for vaccination against seasonal influenza southern strain 20206.
 - ✓ Triple viral vaccination (MMR): boys and girls from the age of one year should receive the triple viral vaccine. In the departments that have presented outbreaks, the zero dose of double viral vaccine (measles and rubella) should be guaranteed between 6 to 11 months, as well as the other vaccines established in the national vaccination scheme in order to reduce the risk of appearance of outbreaks of measles, polio, diphtheria and yellow fever.

KMC programs cannot close during this pandemic period and those that closed should open as soon as possible. KMC programs provide safe care and ambulatory management of high-risk premature or low-birth-weight new-borns, and allow free space in the neonatal units for sick or critical new-borns who may need isolation because the pandemic.

Suggested readings

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