Sources of resistance to Kangaroo Mother Care (KMC) implementation in developing countries and proposed solutions.

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Short title

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Key words

Kangaroo Mother Care, resistances to implementation, developing countries
**Abstract**

**Background:** Half of the annual child mortality is either associated or caused by Low Birth Weight (LBW). Research results (including randomized clinical trials) have shown that Kangaroo Mother Care (KMC) (a three component intervention: kangaroo position, kangaroo nutrition and early discharge policy) can decrease morbidity and mortality from LBW. Between 1994 and 2004, 44 teams from 25 developing countries were trained in the delivery of KMC in Bogotá. Not all teams were successful in initiating their own KMC programs, and among those starting, not all replicated the actual validated model. We tried to identify and overcome factors involved in resistance to KMC implementation.

**Methods:** A qualitative study was conducted by email: 17 open-ended questionnaires were applied to coordinators of functioning KMC programs (15 countries), and 15 site-visit reports to places with reported problems in starting their programs were realized. Information was classified according to both, the perceived sources of resistance (health care professionals, mothers and/or family) and involved KMC model component.

**Results:** KMC components have been adapted to local circumstances, patients’ needs and care scenario. The early discharge component (including ambulatory follow-up clinic), despite its favourable impact on hospital costs and risks, experienced more difficulties in implementation. Difficulties arising from both health professionals and mothers/families were often related to local cultural issues.

**Conclusions:** Some of the identified resistance sources were shared by many second generation KMC programs. This information is valuable for public/private organizations willing to implement KMC programs and has never been published before.
Introduction

Low Birth Weight (LBW) frequency in the developing world (10% to 30% of total live deliveries)\(^1\,^2\) constitutes a high burden of illness: about four million newborns are dying each year, 30% related to LBW and prematurity.

Kangaroo Mother Care (KMC) has emerged as a promising modality of care for LBW newborns. Evidence of efficacy and safety of KMC is only available in hospital\(^3\,^4\,^5\,^6\) even though KMC is presently promoted in both hospital and community settings. It has been formally endorsed by WHO, which published a set of KMC practice guidelines in 2003\(^7\)

Despite the fact that there is sound evidence about the effectiveness and safety of KMC a restraining inertia exists, forbidding massive implementation. Many leaders in newborn care have never been exposed to the science/art of KMC. Paediatricians and nurses may have heard about KMC but have no first-hand experience and thus feel unsure about initiating and sustaining KMC programs in their neonatal services.

Description of Kangaroo Mother Care (KMC)

The KMC intervention was devised in 1978 by Professor Edgar Rey in Colombia\(^8\) This original model of delivering KMC has been greatly modified tested by our team since 1989\(^9\) including in a randomized controlled trial\(^3\,^4\) The current KMC model is hospital-based and comprises three components:
a) **Kangaroo Position**: infants dressed only with a diaper, socks and a baby cap, are maintained in continuous (24 hours/day) skin to skin contact, placed between mothers’ breasts in a vertical or semi-vertical position, and underneath mothers’ clothes. The baby is carried by the mother, but the father or other suitable person may assume the role of kangaroo position provider. Kangaroo position should be maintained until the infant is able to regulate temperature, usually around 37 weeks of post-conception age. Quite frequently the baby itself will signal when he regulates temperature by expressing unease with permanent skin to skin contact.

b) **Kangaroo Feeding Policy**: consists of exclusive or almost exclusive breastfeeding direct from the mother’s breast whenever possible. Breast milk can be administered by means of gavages or by cup. If weight-gain is not adequate, breast milk can be supplemented with a high calorie artificial formula when available and without interfering with breast feeding. Babies must be fed regularly day and night. The goal is an expected weight gain of about 15 g/kg/d. Breast milk administration will begin at the NICU by tube as soon as possible. The mother will be encouraged to extract and store her breast milk.

c) **Kangaroo discharge and follow-up policies**: infants, regardless of actual weight or gestational age, become candidates to discharge in kangaroo position as soon as they are medically stable and have completed a successful in-hospital adaptation to kangaroo position. In addition, they should be able to suck, swallow and breathe co-ordinately. The mother or other kangaroo position provider must be able and willing to comply with the program recommendations, including strict attendance to follow up visits. After discharge infants are monitored daily to twice a week until they
regain their birth weight and thrive at a rate close to 15g per Kg per day. If close follow up cannot be assured, the mother-infant dyad can stay at a kangaroo mother care ward (KMC ward) while the infant develops a satisfactory growth rate. Afterwards they can be discharged provided a weekly check up can be guaranteed.

**Methods**

Between 1994 and 2004, the Bogotá KMC research team has been disseminating the model by different means, including the direct training of 44 health care teams from health care facilities in 25 developing countries. Not all these trained teams were successful in initiating a KMC program, and among those starting it, not all of them replicated the validated model. It was necessary to identify and try to overcome factors associated with resistance to KMC implementation.

That information was gathered in a qualitative study conducted by email. a) an open-ended questionnaire applied to 17 coordinators of those KMC programs that had started and were functioning (17 Teams from 15 countries), and b) site-visit reports to those places with problems in starting the KMC program (15 visits between 1994 and 2004).

Four broad determinants for resistance were identified and data were classified according to these determinants:

1. KMC component against which the resistance emerged (position, nutrition, early discharge, the intervention as a whole)
2. Source of the resistance (health care team, mothers, family, others)
3. Concern: Direct concerns or adduced scientific reasons, cultural reasons, intervention too demanding, etc.
4. Frequency and location of a given factor.
The intention of the analysis was not only to identify and count the factors seemingly involved in resistance to implementation of KMC, but to try to understand (rather than predicting or explaining) the circumstances and motivations behind the factors that may hamper a wide and successful deployment of KMC. This understanding has been the basis for proposing strategies to overcome resistances to a wider dissemination of KMC. As part of the process of understanding resistances, concerns for objecting a given component of KMC were characterized as “direct arguments” and “adduced arguments” with a different underlying reason.

Types of adduced arguments included misconceptions (judgements formed based on stereotypes and usually not taking into account evidences), and arguments based on inappropriate information about KMC (distorted information, insufficient or absence of information). The approach to overcoming resistances arising from direct arguments should be different from the methods to address adduced argumentation (culturally acquired prejudices and believes).

**Results and discussion**

Results are presented according to involved determinant.

**1. Resistance to the overall KMC intervention**

1.1 KMC is judged as sub-standard care because is perceived as the “poor man’s alternative” for developing countries.

**Source:** Health care professionals
**Description:** This is a usual reaction to an intervention commonly presented as a low cost technology, therefore appropriate only for the poor.

**Frequency:** is almost universal in the first encounter between competent and well-intended health care professionals from developing countries and kangaroo trainers. This resistance can be regarded as an adduced argument, a prejudice, a judgement formed without considering the evidence.

**Proposed strategy to address the argument:** This issue dissolves when it is addressed openly. Distribution of material (photographs, articles, videos, studies underway) to health care professionals at any appropriate scenario (meetings KMC training, site visits, etc.) is a good approach. The essence is to illustrate that, on one hand, KMC is based on sound scientific principles and has been properly evaluated; and on the other, that it is also used in developed countries. The increased deployment of KMC in developed countries is making this issue easier to solve.

**1.2 Staff believes that KMC represents extra work**

**Source:** Health care professionals

**Description:** Kangaroo rules deal with implementation and monitoring of kangaroo position, kangaroo nutrition, early discharge from the hospital and a strict follow up at least until term but ideally extending up to one year. Complying with these demands (which are aimed not only to provide good quality health care but to encourage a culture of self-evaluation and quality improvement) is perceived as an extra work load not only quantitatively but qualitatively. It implies long and detailed consultations (including psychomotor and neuromoteur development assessment), interviews with mothers, efforts to contact not compliers, etc. to these professionals who already have overloaded schedules.
Do really KMC represent an extra work load?

To respond it is necessary to consider the different stages that have to be completed while providing KMC.

In-hospital KMC (which is basically the adaptation to KMC and preparation for discharge) is an intervention that requires skills, time and commitment, and is more resource consuming at the beginning, because of education and training of mothers, and in the mothers’ building of confidence in their own skills to cope with the infants’ demands. Later, mothers will safely assume most of the routine care activities.

In preparation for discharge, health care staff not only needs to deal with parents’ anxiety, but they also have to prepare both infant and family for discharge. In that sense, in-hospital KMC does not necessarily represent an additional workload, but a different (perhaps better) way of performing tasks that are already a normal component of good quality in-hospital neonatal care.

Post discharge KMC activities are different according to the discharge policy prevalent in the considered institution. Infants can be discharged home or can be transferred to a KMC ward, together with their mothers. Irrespective from being at the KMC ward or at a KMC early discharge clinic, mothers and infants are monitored by health care staff. It is also necessary to remark that the main provider for the basic needs of the infant and the first line monitoring “system” of the infant health status is the mother, and she progressively relieves health care personnel of many of their routine activities with the
infant. This transference of responsibility to parents happens efficiently and without jeopardizing the infant.

The workload during this period is not new, but takes place instead of the in-patient “minimal care” level offered to stable LBW infants who remain in hospitals while able to regulate temperature and until they reach a pre-defined discharge criteria.

Subsequent follow up for KMC infants is demanding and time consuming, but should not be quantitative or qualitatively different from a good quality follow-up clinic for LBW infants.

**Frequency:** This barrier is presents in almost all places in both developed and developing countries although with different intensities.

**Type of Argument:** This is a rational direct argument, based on real facts.

**Proposed strategy to address the argument:** Given that this barrier is founded in real facts, it should be addressed with evidences, facts and practical demonstrations: the main effort should be placed in demonstrating (during a pilot implementation, or by inviting health care personnel as observers to a well established KMC program), that a well trained mother helps and easies the workload for health care staff. “Kangaroo” parents are the best allies that a motivated and well trained neonatal care professional can have. In addition, this issue was solved more quickly in the centers offering continuous kangaroo position (24 hours a day). At the end, health professionals will identify the extra workload implied in providing KMC as an investment that renders direct, indirect and intangible benefits that make worth the extra effort.
2. Resistance to Kangaroo Position

2.1 Direct skin to skin contact (KMC position between a naked baby and the Kangaroo position provider (usually the mother) is regarded as “unusual” or even “improper”.

Source: Cultural reactions from professionals, mothers and their families with respect to a technology that forces them to make important changes in their induced views and habits regarding the care of babies.

Description: this close and intimate contact between baby and carer may not be perceived as appropriate in cultures where physical contact is restricted to other very specific situations. In addition, positioning the child on the chest is also not the usual way of carrying infants; in many cultures they are carried attached to the back of the mother. Carrying permanently an infant in skin-to-skin contact is something that mothers do not want other people to notice, and people might considered shocking or offensive. These problems can arise in different forms in several cultural environments or conservative segments of the society.

Frequency: This problem is almost nonexistent in societies where physical expression of feelings is acceptable or even promoted, and where public expressions of emotion with physical contact are appropriate.

Type of Argument: Is a real direct argument, culturally determined.

Proposed strategy to address the argument: Given that is culturally rooted, there is not a universal answer, and at each place the resistances should be addressed from within the local system of believes. Definitively, the answer should emerge from local teams, with the help of social scientists. As a general strategy, an effort to identify culturally acceptable devices to help caring the infant in kangaroo position should be carried out. Using them facilitates the acceptance of the kangaroo position. When the resistance to
this unusual way of carrying the infant is finally overcome, both fathers and mothers usually experiment a true pleasure, and are willing to share this positive experience with others. These testimonies from families that are carrying successfully their infants in kangaroo position are very powerful to help new candidates to overcome this resistance.

2.2 Mother privacy and modesty.

Source: both mothers and health care staff feel and express discomfort or even open resistance when mothers have to be exposed to strangers while learning the Kangaroo Position and/or to breast fed the infants. In some cultures, the exposure of naked skin such as when a mother is breast feeding is regarded as improper or even is openly rejected.

Description: Caring out the training and educational activities involved in KMC in an open, collective scenario is very powerful: it allows for an easy interaction between health care providers, seasoned and skilled kangaroo families, and kangaroo mothers in the early stages of training and adaptation to KMC. Fearful and unconfident mothers are enmeshed in a warm, caring supportive and stimulating environment. Nevertheless, there is not a lot of room for privacy and can be intimidating for the modesty of some mothers. Especially when the father is actively participating, mothers in most cultures can feel uncomfortable to expose themselves during breastfeeding or kangaroo positioning.

Frequency: Although vary widely in intensity, this source of resistance is almost universal.

Type of Argument: this is a real, direct argument.

Proposed strategy to address the argument: provisions should be made to respect modesty and intimacy, for instance appropriate hospital gowns for mothers that when
they need to breast feed and to place the infant in kangaroo position should not get their torso completely nude; a private room or at least a screen can help develop the needed intimacy. For many mothers, interacting with female health care personnel is easier and more comfortable.

2.3 Newborn cap (bonnet) and socks:

Source: predominantly health care professionals

Description: In warm or hot climates, most people, particularly health care staff has the unfounded believe that the high environmental temperature is enough to prevent excessive heat loss while in kangaroo position. Therefore they regard the use of cap and socks as exaggerate and inappropriate.

Frequency: Is frequently found in low income countries with hot weather.

Type of Argument: Is an adduced argument, a misconception based on imperfect knowledge of the newborn physiology.

Proposed strategy to address the argument: the knowledge about the physiology of temperature regulation and prevention of hypothermia in premature infants is well established. The issue is solved usually by sharing this knowledge with the health care staff. In some places it is necessary to demonstrate a decrease in rates of hypothermia after introducing the universal use of warm baby bonnets. An appropriate hat (small cap that stays in place without the need to tie it to the head or neck) should be used.

2.3 Diaper

Source: All society components. There are societies where, for cultural, religious and/or economical reasons, diapers are not used at all, and the traditional solutions to handle excreta are inappropriate for a mother who carries her infants on top of her bare chest.
Description: KMC simply cannot be carried out if the infant’s excretions are not properly handled. Handling infant’s excreta varies from disposable sanitized diapers in high income countries to cloth diapers with variable sealing to solutions without diaper and with almost free dispersion of excreta. In some cultures even talking about this topic is taboo. In these circumstances, mothers plainly reject carrying the infant in kangaroo position.

Frequency: is restricted to specific countries and cultures.

Type of Argument: direct argument based in real facts, difficult to modify.

Proposed strategy to address the argument: Despite the usual taboos surrounding this issue, an effort of addressing it openly and with a sensitive but unambiguous language, should be made. Unless a culturally and economically acceptable solution that offers enough sealing to allow mothers to feel comfortable while providing kangaroo position is found, all other efforts to implement a KMC will fail. If the solution found implies some form or adaptation of cloth diapers, the problem of cleaning and drying used diapers should be solved.

The development of support and educational materials is very useful. In particular good practical descriptions of how to handle diapering directed to both parents and health professionals can have a significant impact. Demonstration projects, such as developing KMC in centers of excellence in which these issues are addressed and feasible solutions are found are instrumental in the process of wide successful implementation.

2.4. Health care personnel not pursuing continuous (24 hours a day) kangaroo position when indicated

Source: health care personnel.
Description: Frequently health care personnel initiating kangaroo mother care programs are unconvinced of the need for providing continuous kangaroo position. There is a variety of reasons:

- Some infants kept only a few hours a day in kangaroo position may still grow properly. This happens usually in term or near term LBW infants, even with severe IUGR (Weight under 1500 g). In true immature infants who are unable to properly regulate temperature, non continuous kangaroo position usually leads to poor growth and even to hypothermia and complications including hypoglycaemia, apnoea spells, etc. When the prevalence of IURG in a given health facility is high, health care staff get the misleading impression that continuous kangaroo position may not be necessary.

- Reported research from affluent settings in which intermittent kangaroo position is successfully employed in infants hospitalized at high technology neonatal units misleads health care personnel from settings with different conditions providing KMC. In affluent settings, when the infant is taken out from the kangaroo position its placed into operating incubator or warmed crib, which may not be the case in other settings. This apparently simple misconception leads to argument that “it has been scientifically shown” that intermittent kangaroo position can be enough, forgetting that an alternative source of neutral thermal environment is necessary for infants not regulating temperature.

Frequency: very frequent, particularly after the initial step towards implementation of a Kangaroo Mother Care programme have been taken.

Type of argument: adduced argument for the reason a), is a bias arising from attributing the same degree of maturity to infants with similar weight but different post-
conceptional ages. For reason b) is arises from an improper application of research results.

**Proposed strategy to address the argument:** Given that the problems are cognitive, strategies should try to change specific pieces of knowledge. A powerful analogy is to ask clinicians for how many hours a day they prescribe that an infant not regulating temperature should be placed in an incubator. Almost all will answer “24 hours a day”. Then they realize that kangaroo position which is using the skin-to-skin contact with the mother as an incubator should be “prescribed” in the same way. Other strategy to address this is to invite carers to closely monitor weight gain (as compared to an appropriate reference curve), and documenting clinical results of the energy savings when in an appropriate continuous neutral thermal environment as the one provided by continuous kangaroo position. These effects are seen not only in preterm infants but also in near term small for gestational age infants. Another argument would be to make them realize that physiologically the infant himself “requests” to be discharged from the kangaroo position when reaching adequate thermal control; mothers usually can provide a very good description of when the infant is ready to leave the kangaroo position: starts to sweat and to not tolerate the skin-to-skin contact; he scratches the skin and tries to crawl out of the kangaroo position. These behaviours remind good observers of what infants do when they do not need incubators anymore.

2.5 *Mother objects maintaining Kangaroo Position 24 Hours a Day.*

**Source:** The mother and to some degree, health care personnel.

**Description:** Mothers, although in general eager to do what is necessary for the benefit of their infants, may find the demands of continuous kangaroo position overwhelming and may decline participating, or in cases when the participate, their compliance with
the 24 hours a day provision of kangaroo position can be suboptimal. In addition, environmental conditions can be discouraging for mothers. Worldwide, most neonatal units do not have the appropriate space and implements for offering a minimum standard of comfort to mothers providing continuous kangaroo position. Kangaroo Mother Care wards in developing countries which house mother-infant dyads while in kangaroo position frequently lack the most basic conveniences for mothers to be able to do KMC 24 hours a day. Chairs are uncomfortable, insufficient in number; sleeping is done lying in horizontal simple beds or in mattresses in the floor, etc. These circumstances not only arise from insufficient resources, but from lack of commitment from clinicians and administrators, who may not be fully convinced the great benefits for the infant of the continuous kangaroo position, therefore they not provide for the minimum requirements to help mothers cope with the demands of 24 hours kangaroo position.

Another scenario is after discharge, when the mother should maintain the infant in skin-to-skin contact at home. Mothers may fear their activity and independence will be severely restricted if they are going to be their infants “incubator” at home. It is difficult to picture how they will be able to sleep and rest, take care of their own hygiene, much less take care of their usual role as housewives.

**Frequency:** Universal although in different degrees.

**Type of Argument:** this concern is a direct argument based in real, valid facts.

**Proposed strategy to address the argument:** To overcome an adverse environment which lacks the most basic conveniences to provide a minimum comfort to mothers kangarooing, first, clinicians and administrators must be convinced of the need for appropriate provision of continuous kangaroo position. Using cognitive and rational
arguments such as the strategies described before, once can gain enough commitment from them to positively modify the environment to ease the mother’s work as kangaroo position provider: comfortable beds in which mothers can lye in a semi-sitting position and have deep and restful sleep while holding the infant in kangaroo position. Appropriate gowns that allow for an easy and unobtrusive frontal access to the infant instead of the standard hospital gowns. Appropriate support devices to hold properly the infant in place and allowing the mother to move freely, use her arms, relax and take care of herself. A simple lycra band around the mother’s torso is usually cheap, widely available and comfortable to both mother and infant. The elasticity of this cloth does not restrain the infant but keeps him in good position. Other culturally appropriate and acceptable devices can be explored.

Once at home, comfort should be assured in the same way as in hospital. In addition help from responsible adults should be available any time to ensure the continuity of the care.

Another simple but highly effective argument for mothers but also for family and health care professionals is to remind them that the infant should be in kangaroo position until he reaches term at the most, and many times a couple of weeks earlier. This simple remark usually helps mothers re-dimensioning their perception of time they should commit to kangarooing, as a reasonable time period which was already “reserved” for completing pregnancy.

2.6 “Authorization” for the mother to commit herself to continuous kangaroo position.

Source: Father, other members of the family
Description: In many cultures women have a large workload at home, where they take care not only of their direct family and their newborn infants and siblings, but of the political family (particularly mothers in law). The partner or the mothers in law do have the authority to decide what the mother should do, where when and how. If these stakeholders are not convinced and involved in providing KMC, the ambulatory care of the infant can be seriously affected. In case of multiple pregnancies, the problem is even worse. In some other cultures mothers usually work while carrying their babies in the back. Holding the infant in kangaroo position interferes with her usual working routines. Husbands, partners and/or political family usually object.

Frequency: Is restricted to specific cultures. In those places where husbands and political family have high control on the wife’s role and use her as a source of labour, this problem is very frequent. In many instances mothers do need formal authorization from mothers in law to be allowed to provide Kangaroo Mother Care to their infants.

Type of Argument: is a direct, real issue, which must be solved before discharge.

Proposed strategy to address the argument: Education, during the adaptation and at the time when the mother is in the KMC ward, can help solving this issue. The most effective way of educating stakeholders such as fathers, grandparents and mothers in law is to train them and involve them directly, particularly holding the infant in kangaroo position. Training the mother in law and the grandmother is fundamental in most cultures

2.7 Participation of the father:

Source: Mother, other members of the family, female health care staff

Description: There are numerous cultural barriers against paternal participation in the care of his low birth weight infant. Women, mothers and female health professionals are
usually the most reluctant to allow fathers participation. Fathers also can feel that providing direct care to the premature infant (feeding, holding, etc.) is the natural role of the mother. Many fathers are willing to be involved in the care of the infant to assure the infants survival, but there is not clarity about the “appropriate” role they can play. Culturally in many places it is understood that the role of the father is to provide for the family and to not “interfere” with the direct care of a newborn infant. Fathers feel more comfortable interacting with much older infants.

**Frequency:** Very frequent irrespective from socio-economic level of the families.

**Type of Argument:** this is not a real biological issue but an adduced argument; it is linked with culturally acquired prejudices and believes. In many instances fathers claim that they can not be involved because they have to work. Nevertheless, they should get involved after work, weekends and during the night (as they should also in not premature infants).

**Proposed strategy to address the argument:** Actual demonstration of fathers “kangarooing” their infants usually help breaking the barriers. It is also needed to explain that any human being can maintain the infant’s temperature using kangaroo position. Once a father witnesses the satisfaction in other fathers holding their baby skin-to-skin and delivering the kangaroo position, he is usually keen to experience himself. Later on, at home they can share with the mother and allow her to take breaks when needed. In addition, having to deliver the kangaroo position makes fathers much more aware of the burden represented by kangarooing. In several kangaroo centers it is a requirement that the father demonstrates proficiency in delivering kangaroo position before transferring the infant to a kangaroo ward or discharged to home. This requirement that at the beginning can be regarded as an imposition rapidly evolves to a pleasant duty. Fathers rapidly gain confidence and change their attitude towards being
actively involved in practical aspects of the care of their fragile infants. During the RCT conducted in Bogotá it was found that fathers who carried their infants in kangaroo position became more sensitive to their infants’ needs and were available at home more often than control fathers (unpublished data).

3. Resistance to Kangaroo Nutrition

3.1 Breastfeeding infant is an extra workload

Training and supporting mothers to breast feed a premature infant is demanding in skill, time and effort. It is perhaps the most important perceived barrier by health care professionals. This issue was already discussed earlier in this paper.

3.2 Lack of feasible alternatives to supplement breast feeding when indicated.

Source: Policy makers, health care personnel, and real economic constrains.

Description: About half of LBW under KMC thrive well during their first weeks of life with exclusive breast feeding (plus vitamins); the remaining half requires some sort of supplementation to sustain an adequate early growth rate. Good quality kangaroo mother care programs pay great attention to early somatic growth, and discover with disappointing frequency that a sizable proportion of infants are not thriving well. Nevertheless, either because severe economic constrains or because of rigid policies, they do not have access alternatives to exclusive breast feeding. A psychological mechanism of defence is negation of the problem, disregarding the risks and consequences of poor postnatal early growth.

Frequency: Can be present in various degrees in any low and middle income country and can vary between regions and social classes within a country.

Type or argument: is based usually on real facts.
Proposed strategy to address the argument: acknowledging that there is a problem is the first needed step. Denial precludes the search for a realistic solution according to local circumstances. A second step is to involve policy makers in the discussion.

3.3 Artificial formula feeding is regarded as a marker of economic wellbeing

Source: Usually mother and family.

Description: mothers or families who feel that can afford “the best for their infants” seem to be willing to give total or partial formula feeding, because they ignore the proven benefits of human milk.

Frequency: fortunately not to frequent, at least in part to the massive universal efforts to promote breast feeding.

Type of argument: Misconception.

Proposed strategy to address the argument: education. It is important to avoid rigid or dogmatic positions with regard to exclusive breast feeding; offering mothers a balanced and sensitive view of this issue.

4. Resistance to early discharge and follow up policies

4.1 Concerns about assuring the infants safety when discharged early to home, despite satisfying the requirements for safely discharging the infant.

Source: Health care personnel, administrators.

Description: There is evidence that when eligibility criteria are closely followed and there is an ambulatory KMC program in place, early discharge home is feasible and safe. This is only possible in urban areas where the mother’s compliance with control visits and opportune access to emergency care can be assured. Health care personnel and administrators are usually not willing to face what they perceive at a source of risk
for their patients, and find easier just to postpone discharge. Nevertheless, this behaviour precludes KMC to alleviate overcrowding and nosocomial infections and decreases its beneficial effects on family empowerment.

**Frequency:** is frequent especially when decision makers have not been exposed to proficient KMC programs which a successful early discharge policy.

**Type of Argument:** Is a prejudice in those cases where the conditions for safe early discharge are present. In those cases where the conditions are not fulfilled it is a real argument.

**Proposed strategy to address the argument:** A solution to start an early discharge from the hospital policy is the establishment of a KMC ward which allows for documenting mothers’ compliance with KMC rules. It also permits training another member of the family and attempting to get the father involved before discharge. Mothers from outside the city or who are unable to return for close controls should remain at a KMC ward until they very close follow up is no longer necessary.

**4.2 High risk follow up policies**

**Source:** Health care personnel, administrators.

**Description:** Good quality follow up programs are not specific for kangaroo infants but for all high risk babies (including KMC babies). In many developing countries there is no tradition to do close, targeted follow up activities for these infants. Even where high risk follow up programs are well established, they are conducted by different health care personnel from those who initially delivered KMC, both at hospital, and immediately after discharge. Maintaining the continuity of care during the first year of life not only refers to access to health care consultations but to be under the surveillance and guidance of the same team that already established a working relationship with the kangaroo infant family.
Frequency: Our team has found this problem almost in every place where we have helped in the implementation of a KMC programme.

Type of Argument: Is more an adduced argument, a problem of attitude and political willingness that a real problem of resources.

Proposed strategy to address the argument: There is not an easy solution to this issue. What can be done is to make decision makers aware of the need to monitor the impact of all those expensive and resource consuming interventions involved in the care of an immature newborn infant. Another powerful line of argumentation is that without close follow up and early intervention of complications all the efforts already invested in the care of these infants can be lost.

**Recommendations**

Before adopting KMC in any kind of setting, a health care facility should examine the following aspects: the local applicability and the local appropriateness: feasibility (human, technical, financial and administrative) and acceptability (target population, health care providers, policy makers, administrators and payers). In response to those considerations, an explicit implementation plan should be formulated and executed. As a guideline we propose addressing the following practical issues to maximize the likelihood of a successful KMC program:

1. Total conviction that KMC is “a plus” within the practice of your unit and that your patient’s families are able to learn and work with your unit for the well-being of their infant.
2. Participation in “a train the trainer” process in a KMC Pilot center.
3. Collection of papers, audiovisual materials, and KMC guidelines. Distribution of this documentation to all the personnel of the neonatal unit followed by a meeting in which the administration responsible of the Unit and hospital be invited and given a practical demonstration of the kangaroo position in front of all the assembly. Begin the KMC implementation in your Unit with mothers willing to employ it. A video presentation and a written acceptance must be obtained at least at the beginning.

4. Identifying children that will not benefit of KMC, or the circumstances in which it is not appropriate to implement KMC, to avoid harming people and creating further resistance.

5. Initiation with the strongest and healthiest preterm baby you have in your unit with the acceptance of both parents. The baby can be monitored if needed, to show the course of the oxygen saturation, the cardiac frequency...etc.


7. Regular monitoring of the program through a KMC database, looking at your premature infants from birth to 40 weeks of gestational age and subsequently during the high risk follow-up. It will allow analysis and comparisons with data from other units: mortality by range of birth, weight and gestational age, morbidity, rate of nosocomial infections, hospital stay, rate and duration of breastfeeding, sequel......etc. A great deal of stamina is strongly recommended to withstand an avalanche of external criticisms. Don’t forget to ask the families to testify about their experience.

8. Evolution to a KMC training center recognized by the other neonatal units: presentation of your results to national and international congress.

10. Training of regional hospitals. The experience of your KMC unit will be quickly known and health professionals from other obstetric facilities in the country will be interested in coming to learn.

11. TV and newspapers love KMC; use them in the right way.

12. Identification and adoption of the best KMC practices according to the setting:

   National and International KMC workshops
References


