Case study "Kangaroo Mother Care Program (KMC)"

Buenas Prácticas

Para la implementación de la Agenda 2030

El futuro es de todos

APC Colombia
Agencia Presidencial de Cooperación Internacional

PNUD Colombia

GENERAL INFORMATION

Name of the good practice

Kangaroo Mother Care Program (KMC).

Problem/vulnerability to be solved

Decrease the morbidity and mortality rate of children born prematurely and with low birth weight.

Sustainable Development Goal to which it contributes

The KMC Program provides a gradual contribution to the following SDGs:

SDG 3. Ensure healthy lives and promote well-being for all at all ages.
SDG 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Targets of the SDGs to which it contributes

This case study contributes to the achievement of the following targets:

Target 3.2. By 2030, put an end to the avoidable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.
Target 2.1. By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

Targets of the SDGs to which it contributes

4

Target 2.2. By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.

Global Indicator of the SDGs to which it contributes

5

Pursuant to the aforementioned Goals and Targets, this case contributes to compliance with the following indicators:

Global Indicator 3.2.2. Neonatal mortality rate (deaths per 1,000 live births).
Global Indicator 2.1.2. Prevalence of moderate or severe food insecurity among the population, according to the Food Insecurity Experience Scale.
Global Indicator 2.2.1. Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age.
Global Indicator 2.2.2. Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight).

Leading Entity

6

Fundación Madre Canguro (Kangaroo Foundation).

Contact Person

7

Dr. Nathalie Charpak
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Other actors involved

8

Patricia Jiménez
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Other contact persons

9

does not apply

Analyzed Municipality

10

To learn about the operation of the Kangaroo Mother Care Program and its centers of excellence (training), the San Ignacio Hospital Kangaroo Program was visited in the city of Bogotá.

Type and number of participating citizens (beneficiaries)

11

Taking into account that approximately 800,000 deliveries are made in Colombia each year, of which 10% are premature, about 80,000 babies may be beneficiaries of the Kangaroo Mother Care Program each year.

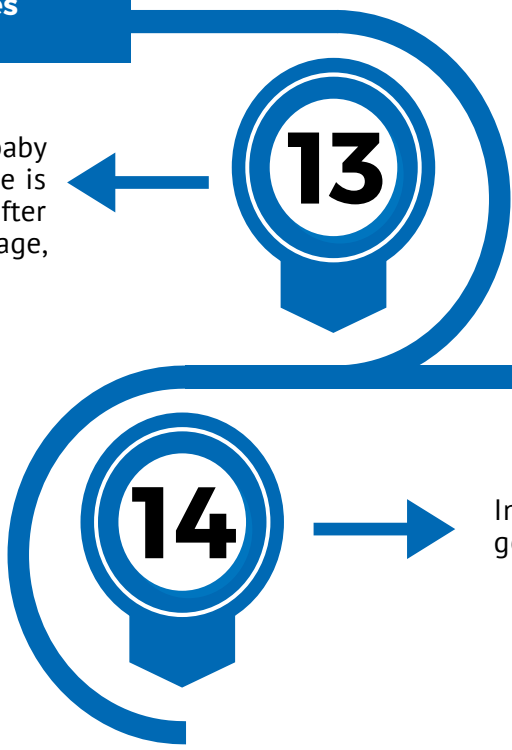
Duration of the experience

12

The Kangaroo Mother Care Program (KMC), was created in Colombia in 1978, and has been implemented for 39 years.

Dedicated resources in COP

Care and monitoring of a baby kangaroo from the moment he/she is discharged from the hospital after birth and, until the corrected age, costs around US$800.



Funding Sources

International cooperation and territorial governments.

BRIEF SUMMARY

The significant number of premature baby and low birth weight (LBW) deaths, and the lack of resources to provide adequate and customized attention, coupled with the many mothers that abandoned their children in a neonatal care unit; was the source of motivation for Pediatrician Edgar Rey Sanabria MD, Director of the Maternal and Children´s Institute of Bogotá (Instituto Materno Infantil de Bogotá) Newborn Department, to develop a method inspired by the way in which kangaroos culminate their pregnancy by carrying their offspring inside their pouch.

This method made it possible to engage mothers in this initiative, where babies are almost exclusively given skin-to-skin heat and fed exclusively with breast milk to achieve a development that equals that of full-term babies but in a shorter period of time.

This initiative was implemented in an experimental manner and yielded immediate results; which led to Dr. Sanabria and the group of doctors that worked with him, to continue applying and disseminating it in other healthcare institutions, albeit very timidly, since some hospitals showed reluctance because of the fact that the effectiveness of the method could not be proven with figures.

It was only after 1989, when research work began, that neonatal care unit personnel embraced the KMC based on the evidence provided by the studies conducted.

Initially, the philosophy was based on love, on how mothers managed to contribute to the development of premature babies by holding them; but, over the years, practice and operations showed other factors are required, such as financing, culture, and the political will to implement the Kangaroo Mother Care program.

However, the arduous and constant work of the Kangaroo Foundation, created in 1994, has enabled the KMC to be disseminated not just in Colombia, but in dozens of countries from around the world, which has led to saving the lives of thousands of premature children.

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1 PROCESS

1.1. Local context and problem to be solved

An article published by Univisión Noticias, in November 2016, mentions that in the Hospital Materno Infantil de Bogotá registered around 30,000 births in 1978, of which 15% were born before 37 weeks (premature) or weighed under 2,500 grams (low birth weight). It was normal for two or three babies to share incubators due to a lack of resources, and infections were spread easily, thus increasing the mortality rate in neonatal wards.

These children were hospitalized for months, awaiting to become stable and having an appropriate weight, so this time period and the lack of maternal contact in particular, caused many mothers to abandon their children without even holding them for the first time .

Despite this situation, which is commonplace in low-income countries, a solution that would enable babies in this situation to recover early was yet to be found; additionally, it would have to be a low cost solution that could yield successful results.

Hospitals, even in developed countries at the time, were concerned about procuring a large amount of cutting-edge technology incubators that would allow them to meet the demands of premature children, but costs were high and continued to be a barrier.

Due to the use of incubators and the long time that this process takes, countries like the United States and France chose to isolate mothers from their children. Conversely, in Colombia, children were traditionally cared for at home or based on the knowledge that mothers had, since neonatal care units did not exist in every region of the country.

However, the most common diseases faced by babies born before term were the same in every country, and were related to a high likelihood of having respiratory issues and a higher prevalence of sensory deficiencies or learning disabilities.

There is no doubt that one of the most significant issues in providing adequate care for premature babies was the lack of resources which, despite the efforts of the National Government to fund public hospitals in the 1970´s, were still insufficient to hire the personnel and procure the necessary tools,. Thus, for example, the lack of personnel posed a threat of infections spreading, since just one nurse had to care for all the children who were in the unit.

1 Read the full article in the following link: http://www.univision.com/noticias/salud-infantil/bebes-prematuros-sobreviven-gracias-al-metodo-madre-canguro

1.2. Identification of the solution

In 1978, Edgar Rey Sanabria, then Director of the Newborn Department at the Instituto Materno Infantil de Bogotá, and professor of pediatrics at the National University, had studied the physiology of marsupials and was convinced that mothers could help their babies get better if, after the babies were stabilized, they mimicked kangaroos and held them as though they were in the pouch, giving them the necessary heat and feeding them with breast milk. This is how the KMC was born, based on by three pillars: warmth, love and mother's milk.

For this, the heat of skin-to-skin contact in frog position is used 24 hours a day; in addition to using a baby carrier that holds the baby inside a lycra cotton strip. This vertical position over the mother or father´s breast has benefits that go beyond temperature and promoting breastfeeding: it prevents reflux, apnea (common in premature babies) and bronchoaspiration[2].

After a year of putting it into practice, Dr. Sanabria appointed Doctor Héctor Martínez Gómez, who worked in the Instituto Materno Infantil Kangaroo program for around 15 years with Dr. Luis Navarrete Pérez. They are credited with developing the method, and they

2 http://www.univision.com/noticias/salud-infantil/bebes-prematuros-sobreviven-gracias-al-metodo-madre-canguro

are therefore recognized as the pioneers of this initiative[3].

Subsequently, Dr. Nathalie Charpak[4] identified the need to establish rules for the method and conduct research that would make it possible to prove its benefits. To this end, and, since no scientific evidence to prove that the method worked was available at the time, although the smile on the face of mothers who had seen progress in their children; she put together a team of healthcare professionals who began research work in 1989 based on the assessment of the work carried out.

Led by Dr. Charpak, this group of professionals became what is still known as the Kangaroo Foundation in 1994.

For its part, the United Nations Children's Fund (Unicef) supported the KMC from the outset, which paved the way to the first comparative study using the results obtained by the Social Security Institute (Instituto de Seguros Sociales, ISS). A second study was then conducted, also at the ISS, where a daycare center by the name of La Casita Canguro would later be created and served as a research and training center and where South-South dissemination began in 1994.

Kangaroo Foundation was created with the purpose of procuring funds for dissemination work, among other tasks. Since then, the Foundation has been a part of the Colciencias research group.

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3 In order to avoid confusion, it is important to establish the differences between the Kangaroo Mother program and the Kangaroo Mother Method. The program refers to a set of organized activities that aim to carry out a specific health intervention, the intervention of a kangaroo mother in this case, to be performed by a healthcare team that is duly trained and organized within a defined physical and administrative structure (generally a hospital). Furthermore, the Kangaroo Mother Method seeks to empower mothers (parents or caregivers) and gradually transfer to them the capacity and responsibility to be the main caregivers for the baby, which satisfies their physical and emotional needs (Visit www.bebesymas.com).
4 A French pediatrician, she came to Colombia in 1987 and did an internship at the Instituto Materno Infantil to validate her diploma, where she learned about and appropriated the KMM.

1.3. Implementation

After the research work began and after gathering scientific evidence on the effectiveness of KMC, the method was disseminated among hospitals in Bogotá and later at national and international levels. For its part, the Ministry of Health and Social Protection issued a regulation in 2007 that requires healthcare institutions to adopt KMC , and the Kangaroo Foundation (endorsed by the Ministry of Health) has been in charge of training all the professionals who currently work in the various programs that operate in the country and abroad. Currently, there are three centers of excellence in Colombia working with the Foundation: the San Ignacio Hospital and San José Children's Hospital KMC in Bogotá and a KMC in Medellín, which work exclusively with populations at Sisbén levels 1 and 2.

The Kangaroo Foundation works with the Ministry of Health and is responsible for establishing the technical guidelines for KMC implementation in Colombia and the rules for service authorization. Currently, there are programs that work well in Bogotá, Bucaramanga, Medellin, Ibague,

5 Please refer to Ministry of Health and Social Protection Decree 3039 of 2007, Resolution 425 of 2008 and Resolution 1441 of 2013 for further information.
6 Centers of Excellence are public hospitals (usually providing tertiary level care) that have implemented the Mother Kangaroo program and therefore have the required facilities, equipment and highly trained professionals making them capable of providing training to hospitals in the region so that, in turn, these hospitals may implement and enable the KMM as one of their services.

Barranquilla, Tunja, Valledupar, Popayán, Buga, Pasto and Leticia, among others.

At a regional scale, work has been performed effectively in Antioquia, where the staff at the Turbo, Yarumal and Rionegro hospitals have received training. In Cundinamarca, work was carried out in the Fusagasugá, Facatativá and Samaritana hospital in Bogotá, and in the Samaritan University Hospital (Hospital Universitario de la Samaritana, HUS) Zipaquirá Functional Unit, not to mention the Bogotá district network, which currently has six KMC.

To implement a Kangaroo Mother Care Program, hospitals must be interested also, they must attend the delivery of premature births and have the necessary resources. These conditions usually take place in public hospitals providing tertiary level care.

Once these hospital centers are identified, a human team must be chosen for training; ideally, it should consist of a pediatrician, a nurse and a psychologist. Said personnel must travel for 15 days to the Kangaroo Foundation training centers and rotate through kangaroo services at the Newborn Unit, outpatient consultation, breastfeeding preparation and outpatient follow-up using development tests until the corrected age. Similarly, they are advised in terms of costing a Kangaroo Mother program in their hospital. They will return to their place of origin bringing all this information and training back with them.

Upon returning to their own hospital, they must locate the place where the program will be carried out and begin providing this service. After the work has begun, the Kangaroo Foundation team will travel to the site for a week or 10 days, to provide support and technical advice in identifying and solving any database management issues that may have emerged during implementation, the purpose of this is for them to obtain their own monitoring statistics.

The same team of professionals returns six months later to provide data analysis support. Ideally, once they are in operation and produce excellent results, they can provide training to other hospitals in their region.

Recently, the Canadian government funded the development of an e-learning platform to accelerate dissemination. The idea is for each compliant center of excellence to have access to this database to provide training in regional centers while raising awareness in primary and secondary care hospitals, and even reach the community itself, so they may learn how to use road transportation to bring a premature baby to a hospital that offers the Kangaroo Mother Care Program. The platform is interactive and friendly, and modules are designed to train professionals in 15-days.

As for program funding, the estimated cost of following up on a baby for a year (equivalent to US $800, approximately COP $2'400,000[7])

7 2017 Kangaroo Mother Foundation estimates.

includes initial breastfeeding support and lessons on how the baby must be held; eye screening, because premature babies may have retinopathy of prematurity, which is the leading cause of blindness in children in Latin America; hearing screening; neurological monitoring for a year; a psychomotor examination and nutritional supplements if the expected weight gain does not occur. In other words, it covers all the minimum requirements for a premature baby until the child reaches one year of age.

For a period of time, the Foundation offered scholarships on a per-child basis, but now, after hard work raising awareness, the healthcarte providers (EPS by their Spanish acronym) are now funding the kangaroo package, after it was proven that it is far more profitable compared to a day of neonatology hospitalization, combining basic care with intensive care, which can reach daily sums of COP $800,000. Therefore, with a cost of under three days of hospitalization, the program would have funds to care for a child during one year, in addition to proving that KMC saves babies ten days in the hospital. For this reason, the EPS finally understood the cost-benefit ratio and accepted to fund the program as an alternative to guarantee care for these children during their first critical year.

For dissemination work abroad, the Kangaroo Foundation received support from a Swiss NGO for 10 years, but it has also procured funding from the European Community, the Bill Gates Foundation and USAID, among others.

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2 RESULTS

2.1. Achieved Transformation

Based on the experience and results from the San Ignacio University Hospital Center of Excellence and other successful cases both in Colombia and other countries, the Kangaroo Foundation has determined that basically two transformations have been achieved:

• Humanizing newborn care, because to implement KMC in a neonatal care unit, the unit must be open to allow fathers to enter and allow mothers to breastfeed, which means eliminating established visiting hours and any other barrier that could prevent permanent contact between mothers and their babies.

• This has been the only chance for premature babies to receive systematic and specialized follow-up care at least until their first year of life. In the past, they left the neonatal care unit and no information about possible sequels or the comprehensive development of the baby was received again.

A recent study published by the "Journal of the American Academy of Pediatrics" in December 2016, in which 400 children received follow-up (who were enrolled in the KMC) until the age of 20, showed that their social behavior is different: antisocial behavior, aggressiveness and hyperactivity become less prevalent. Furthermore, it proved that the likelihood divorce will drop if the father holds the baby during the neonatal period, and found that babies who receive the method during their first year of life have the protection of their parents until the age of 20.

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2.2. Specific achievements

The San Ignacio Hospital Mother Kangaroo Program, in addition to others implemented in Colombia and abroad, makes it possible to prove that the greatest achievement of the KMC is directly related to one of its objectives, namely in terms of the impact on morbidity and mortality, which is in turn related to hospital stays because premature babies who receive KMC care leave the hospital far sooner than those who don´t. The latter condition implies exposing them to an increased risk of contracting nosocomial infections, which prevents them from gaining weight at the same rate as kangaroo babies, and it is likely that they receive less breastfeeding. Therefore, after KMC was embraced in prenatal care units, humanization has become more prevalent, parents are more satisfied, a faster weight gain process has been achieved, the percentage of infected babies has dropped and, therefore, both mortality rates and cost of caring for these children have decreased (although this was not intended to be the first target to achieve, it has proven to be an evident result).

In real terms, the KMC frees incubators by putting babies on their mother´s breast, making incubators available for babies in a more critical state, and also prevents putting two children in the same incubator. Therefore, the use of technology has been streamlined.

Furthermore, earlier awareness has been raised about the sequels that may hamper the future development of a premature baby, which made it possible to identify anomalies in a timely manner in order to be able to intervene as quickly as possible.

Another achievement has been the implementation of a website called the "KMC Training Portal" developed with the support of the Colombian Ministry of Health, where any Spanish-speaking professional may log into review various theoretical modules and videos where the concepts, principles and practices for the Kangaroo Mother Care Program are available in detail.

This portal may be accessed freely and is an online tool created to accelerate KMC dissemination throughout the world. Translations to English and French are already available[8].

An unplanned objective that was achieved out of necessity was the development of a non-disposable diaper made of pure Colombian cotton, which can be washed and dried in just one hour and only 3 need to be used during the

8 Visit the KMM Training Portal at http://fundacioncanguro.co/FMMC/

first 40 days. In addition, sizes for the ages of three and six months are already available. The basic idea is to prevent people with limited resources from having to incur in the high costs of buying disposable diapers to prevent babies from getting burns in their genital area, which are caused by mothers who do not make enough diaper changes per day, considering that they do not have the means to procure these items in appropriate amounts (premature children should be changed seven to eight times a day).

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2.3. Not achieved Goals

Although the implementation of KMC in the country and abroad has brought mostly benefits and achievements, work needs to be done on the following aspects:

• Joining all the Kangaroo programs in a network in order to log information that can enhance the corresponding indicators and help analyze the results in the country.

• Working on the network to identify the need to adapt the program according to different conditions[9].

• It is essential to work with the community to instruct people about remission in kangaroo position.

• The KMC has been rejected because it is perceived to be a method for the poor, considering that it may be more attractive to invest in cutting-edge technology incubators.

2.4. Future Perspectives

In the future, all newborn units in the world will surely offer KMC and this prospect would aim towards:

• All newborns units to apply inpatient KMC principles.

• All developing countries to apply outpatient KMC, which enables monitoring children, helping the mothers of premature babies and providing support to reduce sequelae.

• Giving Colombia global recognition for KMC, although this has been largely achieved due to the fact that the WHO developed a KMC manual which states that it originated in Colombia.

Moreover, one of the principal goals that the Foundation has set for itself is to establish regional centers of excellence in Colombia, so that these may in turn provide training to the nearest hospitals, similar to the work carried out in Cameroon, where five regional hospitals were trained to become centers of excellence.

Lastly, the Foundation hopes to design a transport module in the kangaroo position for the cases of babies born in health centers or primary care hospitals located far away from hospitals that offer the Kangaroo Mother program, where travel

9 For example, in the case of working with an indigenous population, it may be necessary to provide kangaroo mothers and children accommodation, because once the mother returns to her reservation, she will most likely not return to the hospital for her folllow-up appointments. Thus, lodging for mothers in the same city or municipality where the program is located must be guaranteed, to ensure that she will return with the baby one week later.

would even involve transiting on roads that are in poor condition.

It has been established that the instructions should include, among other things, drying the skin after the baby is born, placing the baby in the kangaroo position, wrapping him/her in an elastic strap or cloth, giving it colostrum milk or sugar water in lieu thereof, and taking him/her to a place where better attention can be provided.

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3

LEARNING AND REPLICATION POTENTIAL

3.1. To learn from the failures

23 years of experience have allowed the Kangaroo Mother Foundation to identify that one of the mistakes is not providing direct training to reference center hospitals; meaning, candidates to become centers of excellence that have the capacity to train smaller healthcare centers, after having adopted KMC and solving cultural issues in many cases (such as the refusal to use diapers in India). Thus, there is greater credibility during dissemination, considering that it has been proven that there is greater resistance when training is provided by an external or a small hospital.

Hospitals that outsource Newborn Unit management are a setback from which lessons have been learned in Colombia, as is the case of institutions in Cúcuta, Riohacha, Santa Marta, Barranquilla, Rionegro, Cartagena and San Andrés, among others, which hinders training due to a lack of interest (not in all cases) in implementing a Kangaroo Mother Care program, due to the fact that hospitalizing a premature baby generates more income that will be paid for by health secretariats at a department level. Despite this circumstance, the program could be brought to Rionegro and San Andrés.

As opposed there is the example of public hospitals in Cartagena and in La Guajira. Although the former had staff who received training funded with public resources, the implementation of the program was definitely not possible; nevertheless, there is a Kangaroo Mother Care program at the Bocagrande Clinic, ICU of the Caribbean (UCI del Caribe), which is private in nature. As for the latter, efforts are being made to bring at least one bilingual program to the hospital in Uribia; that is, where medical attention can also be provided in the indigenous Wayuu language.

3.2. Key elements that other actors should take into account

Generally speaking, the guidelines published by the Ministry of Health and Social Protection[10] contain the key elements that other actors must take into account when implementing a Kangaroo Mother Care program, because they include all matters related to infrastructure, human resources and articulation with activity flowcharts. However, the following are crucial items that should be considered:

• Since staff turnover is high in hospitals, experience has taught the importance of requesting contract copies to ensure that the professionals who are going to receive training have a guaranteed permanence and thus avoid a loss of time and resources. A letter from the Head of Pediatrics and the Hospital Director was even required at one point, which stated the commitment to support the implementation

10 The guidelines may be viewed on the following link:
http://fundacioncanguro.co/es/documentacion/docuementos/cat_view/69-espanol/51-guias-practicas-.html

of the Kangaroo Mother Care program, and the Foundation recommends that this requirement should be maintained.

• In order for a program to last, it is necessary to calculate the cost and establish the funding sources from the outset, because there will always be a risk that it will not be sustainable over time if these two aspects are not considered. The "Before" module of the aforementioned e-learning module was designed for this purpose, which is suggested to be applied before a program is implemented.

• Regarding the previous point, recognizing that the program entails certain costs is important for the program to be maintained, such as the basic kit which consists of a strap, a diaper and a hat, in addition to other necessary elements such as an electronic scale and comfortable reclining chairs. It is also important to consider another factor that has not been discussed so far, which has to do with providing food to mothers (who have limited resources in the majority of cases) and comfortable sleeping conditions while the baby stays in the unit. There are other costs associated with providing monetary support for transportation, so that mothers will return to the required follow-up appointments and to prevent desertion, as well as support for nutritional supplements, optometry and audiology exams, and adequate physical spaces to provide the service. However, these are costs that only have to be incurred once.

• Another important aspect to consider from the outset is the drinking water supply in any site where a Kangaroo Mother program is to be implemented, otherwise, if mothers don´t have a way of washing their hands, this factor can become a focus of infection. This point should particularly be considered in African countries. In Mali, for example, their experience was setting up a program without drinking water, even during several periods during the year, and evidence showed that this is not worth doing under these circumstances.

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3.3. Relevance for the implementation of 2030 Agenda in Colombia and in other countries

The 2030 Agenda recognizes that in order to achieve sustainable development, it is essential to guarantee a healthy life and promote well-being for all at any age. It also agrees that great progress has been made in terms of increasing life expectancy and reducing some of the most common causes of death related to infant and maternal mortality. Nevertheless, ending preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to as low as at least 25 per1000 live births (SDG 3) is established as a goal.

Undoubtedly, KMC is a strategy that contains a set of indispensable factors for countries to achieve the goal of reducing neonatal mortality, since it has already been demonstrated that one of the main transformations that the initiative has achieved aims directly towards this purpose. It is with good reason that the KMC is said to saves lives. The work ahead is to further expand its dissemination in countries such as Russia or China, which have not been reached.

Furthermore, monitoring minors at least during their first year of life can help guarantee the absence of any form of malnutrition, preventing stunted growth and wasting in children under five years of age.

On the other hand, the need to take into account factors such as food and comfort for mothers when designing and budgeting a Mother Kangaroo program will guarantee improved nutrition for nursing mothers, which partially contributes to achieving SDG 2.

Developed countries must recognize that the rate of premature babies and LBW is increasing within their territories, that the KMC is a tool that should be used to diminish the likelihood of death for these children and that, contrary to their perception, it is not a method for the poor but a great solution to a real public health problem.

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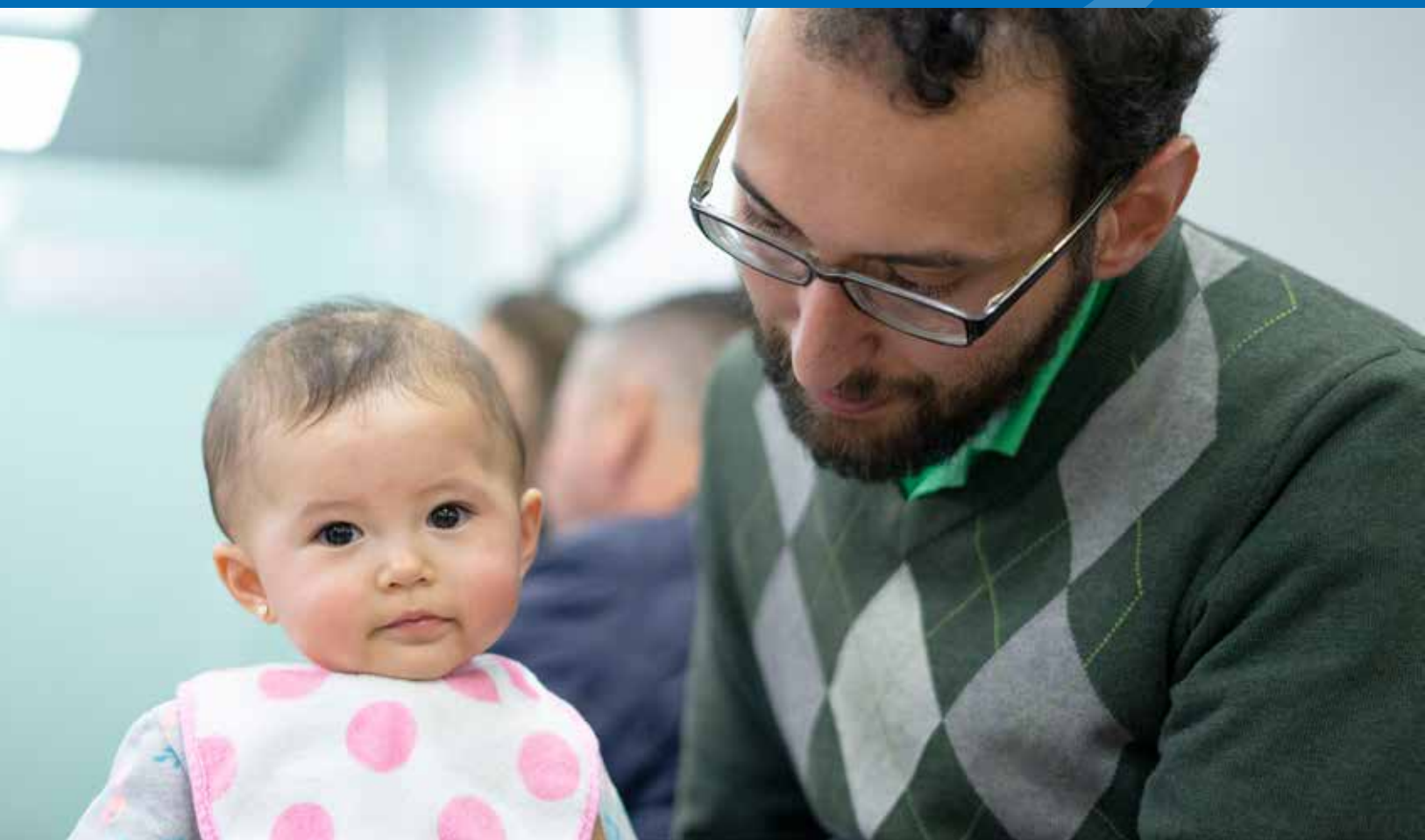

3.4. Replication capacity of the actors involved

The World Health Organization (WHO) estimates that 10% of children are born premature throughout the world, which gives a rough estimate of 15 million candidates for the Kangaroo Mother Care program; however, considering the current coverage, providing care to all of them is far from possible. Nevertheless, the KMC Program has been implemented in hundreds of countries on every continent, some of which have been putting it into practice for 20 years, namely countries with the lowest mortality rates in the world such as Sweden, Norway, Finland and Spain; virtually all of Europe except Italy and Germany. Recently, the program was brought to Ecuador, Kenya, Ghana and Venezuela through a South-South cooperation agreement managed by the Presidential Agency for International Cooperation of Colombia, APC-Colombia. It was also implemented in Cameroon and Mali, where the Save the Children organization contributed to assembling the infrastructure by engaging the Grand Challenges Canada firm. India, Vietnam, Ukraine and 12 other countries in Africa have also received training in this methodology; however, it has not yet been possible to penetrate nations such as China and Russia.

Therefore, despite being a method that can be replicated anywhere in the world, some modifications or adaptations are required according to the particular circumstances and characteristics of each location. For example, the Brazilian government allocated one million dollars to disseminating KMC and made it mandatory through a national law. However, Brazil has experienced issues with outpatient follow-up, because mothers have to stay in Kangaroo accommodation until the baby is grown and has overcome all the complications associated with being born premature; this situation has caused rejection among mothers, who refuse to stay in the hospital for three months.

To a certain extent, the medical team has observed that allowing mothers to take their babies home is a challenge in terms of having them return for their corresponding follow-up appointments. Until now, the Ministry of Health of Brazil has not been able to solve this dichotomy.

Another particular case occurs in India, where the culture does not allow fathers to be in a neonatal care unit with their wives because they will see other women´s breasts. Hence, they built a private room where fathers receive training before their babies are taken home, which prevents

them from seeing other women´s breasts. Also, considering that women in India move to the home of their husband´s family, where they do housework, it was necessary to train mothers-in-law so that they could understand the need to hold the baby at all times, and even make them aware of how they can support this endeavor while mothers are doing their housework. Before adopting this measure, premature baby deaths occurred because mothers went straight to doing housework when they arrived home and could not find the time to hold their babies.

This practice has been documented countless times and has been the subject of publications in both scientific journals and media. Similarly, there are numerous studies that have proven its benefits, and the KMC continues to be the subject of research that consistently produces great findings. For more information, visit the Mother Kangaroo page using the following link: http://fundacioncanguro.co/es/documentacion/docuementos.html.

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4 PERSONAL STORIES

Jessica Acevedo, mother of a 33-week premature baby boy

When asked about how her baby developed with KMC, she stated: "It´s very nice because there is skin-to-skin contact; my maternal warmth is very good for the baby because its like he´s still in the womb, which really helps him grow . Oil massages all over his little body are also helpful because give him more calories so that he can grow ". She also claimed to have received all the instructions about breastfeeding, suckling, placing the baby in a semi-sitting position to put it to sleep, venting any gas and keeping it in kangaroo mode 24 hours a day to keep it from losing weight.

Her baby reached the desired weight within a month, it weighed 2,600 grams.

Andrés Rodríguez, father of a 34-week premature baby girl

"When the baby was born on the 34th week we were very concerned because she was very small, her weight was low and she was in an incubator. When they referred us to come here, when our healthcare provider (EPS) put us in the program, we were given many important recommendations; especially about feeding. They emphasized washing our hands and, most importantly, implementing a Kangaroo plan where the father is in charge during the night and the mother is in charge during the day; this joint effort makes babies succeed. Everything we were taught here has given us great guidance. We have seen significant progress in the baby who has already achieved normal weight. Unfortunately, sometimes we are skeptical of these things, but allowing ourselves to be guided by the specialists, nurses, psychologists and doctors made it easier for the baby to gain weight ".

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Nancy Beatriz Ayala, mother of a full-term baby boy

"My baby was born full-term, meaning 37 weeks, but he was underweight because I had preeclampsia, so I was hospitalized for 20 days. As a result, my baby lost about 250 grams and that's why he joined the kangaroo plan. As for my experience with the program, it was a little hard in the beginning because I felt a lot of pressure, but no; now I recognize that it was worth it because my son has had excellent stimulation, a sound development and he gained weight quickly, all thanks to the fact that I was given every indication. I had to bring him in every day at the beginning, then every other day, then once a week and now, when he is seven months old, I only bring him in once a month (...) They pay a lot of attention to how he is evolving, to vaccines, vitamins, weight, size, they give you an early stimulation workshop, you get psychological follow-up, if you need social work they provide follow-up for the baby in every area (...). Being part of a Kangaroo Mother Care program is worthwhile, because helps both the parents and the baby."

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