# Mapping Exercise of Kangaroo Mother Care in countries: the example of Colombia

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# Dissemination of Kangaroo Mother Care across Colombia

## FIVE STRATEGIC AXES

1. The design and conduction of research studies followed by the creation of the Kangaroo Foundation as a Kangaroo Mother Care research and diffusion center.
2. Establishment of Excellence Centers in Kangaroo Mother Care.
3. Monitoring and evaluation of quality of care provided by the Excellence Centers.
4. National and international diffusion of the Kangaroo Mother Care method.
5. Collaborating with health authorities to further diffuse and evaluate Kangaroo Mother Care ( transforming KMC into national policy).

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# Dissemination of Kangaroo Mother Care across Colombia

## FIVE STRATEGIC AXES

1. Creation of the Kangaroo Foundation as KMC research and diffusion center

- Establishing safety
  - Two Cohort study (1989-1992)
- Study of effectiveness
  - Randomized controlled trial (1993-1996)
- Refining the KMC intervention (1996- to date)
  - Explanatory research with emphasis in neurodevelopment and long term impact of KMC
- Pragmatic research (1996- to date)
  - Research translation into health care
  - National and international diffusion
  - Identification of barriers and quality assurance

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## FIVE STRATEGIC AXES

2. Establishment of Excellence Centers in KMC

Goal: to actively participate in the coverage of 100% of all preterm and low birth weight infants with the provision of a high quality of care follow-up in Colombia.

How: establishment and support of three Excellence Centers, which are able to receive health professionals, provide training in KMC and also act as research centers to further enhance the KMC method.

Side effect: to understand and evaluate the incorporation of a KMC Program in the General System of Social Security in Health: cost utility analysis in reference to health insurance

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## FIVE STRATEGIC AXES

3. Monitoring and evaluation of quality of care provided by the Excellence Centers.

- We developed a database using the software program Epidata.
- For more than 15 years, every 6 months we evaluate the performance of KMC Excellence Centers in terms of selected health outcomes. These outcomes include: Health Ministry Indicators, as well as the compliance of health professionals in reference to KMC evidence-based processes.
- A database with over 30.000 LBW and premature infants is available for research.

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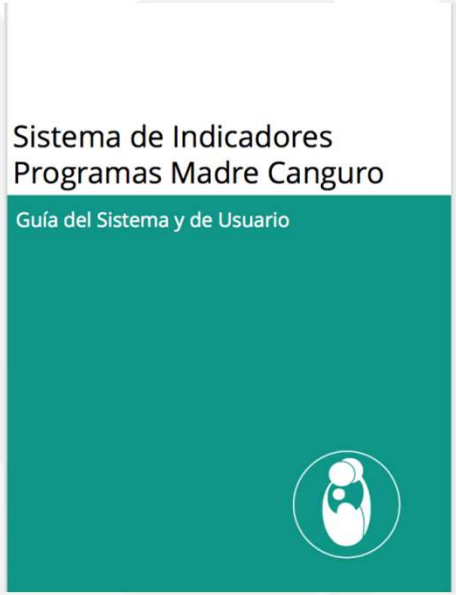
## FIVE STRATEGIC AXES

3. Monitoring and evaluation of quality of care provided by the Excellence Centers.

- An update of the Health Ministry's indicators of both processes and health outcomes will be available at the end of the year, with a simple, user-friendly software to help hospitals calculate these indicators.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# Dissemination of Kangaroo Mother Care across Colombia

Three Excellence Centers in Kangaroo Mother Care

- Programa Madre Canguro Integral at the Hospital Universitario San Ignacio, Bogotá
  - 1500 infants per year
- Programa Madre Canguro Integral at the Hospital Universitario Infantil San José, Bogotá
  - 900 infants per year
- Programa Madre Canguro Integral at Campo Valdés, Medellín
  - 1300 infants per year


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# KMC Programs in Bogotá


# KMC Programs in Bogotá

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# Dissemination of Kangaroo Mother Care across Colombia

## FIVE STRATEGIC AXES

4. National diffusion of KMC

Goals:

- Training multidisciplinary health teams to implement at least one KMC Program in each Colombian State.
- Teaching agreement with various universities in Bogotá and Medellin.
- Establishment of a KMC network for preterm and low birth weigh infants in the country.

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# Dissemination of Kangaroo Mother Care across Colombia

## FIVE STRATEGIC AXES

4. National diffusion of KMC

How:

- Teaching KMC to pediatric residents, neonatology fellows, students of psychology, nursing and other health areas during a monthly rotation at a KMC Program.
- Train the trainers program, in order for multidisciplinary health teams to learn both the clinical and administrative issues needed to implement a KMC Program in their own institution.
- Offering to see different modalities of KMC implementation.
    - 2 week training in Excellence Centers
    - Support visit (duration: one week, after 3 months of having a KMC Program functioning)
    - Quality evaluation visit (duration: two days after 6 months of having a KMC Program functioning)

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# Dissemination of Kangaroo Mother Care across Colombia

## FIVE STRATEGIC AXES

5. Transforming KMC into National Policy

- The Guideline for delivering KMC to LBWI in Colombia was published in 2000.
- The Ministry of Health passed a decree in 2009 that recommends heath facilities to implement and promote KMC. In the past years, various new decrees (2011, 2013) have established the compulsory implementation of KMC in all private and public health facilities caring for mothers and infants.
- In collaboration with the Ministry of Health and the World Food Program the Technical Guidelines for the Implementation of Kangaroo Mother Care Programs was published in 2010 and have been currently updated in 2015.

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# Dissemination of Kangaroo Mother Care across Colombia

## FIVE STRATEGIC AXES

5. Transforming KMC into National Policy

- The Kangaroo Foundation and the Pontificia Universidad Javeriana published the evidence-based clinical practice guidelines to optimize the use of KMC (2007).
- A bill issued in 2011 extended maternity leave and with it further extended the maternity leave to mothers of premature infants (mothers of premature infants will recuperate the weeks between 37 weeks and the gestational age at birth of her infant).

Guidelines by themselves are not enough to develop a good quality program. Our experience shows that training and exposure to successful practice in a KMC Excellence Center has been key to successful dissemination.

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# THE COLOMBIAN EXPERIENCE

## The Kangaroo Foundation and dissemination of KMC in Colombia

**Success of knowledge transfer has been high:**

In 90% of teams trained in Bogotá, KMC implementation has been successful, despite specific needs and difficulties encountered by each program in each setting.

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# THE COLOMBIAN EXPERIENCE

## Difficulties in KMC diffusion

- Choice of the team to be trained.
- Adaptation of the three components of KMC to local circumstances, patient needs and level of care.
- Early discharge and ambulatory follow up clinic.
- Insufficient access to a KMC network and scientific literature on KMC.
- Insufficient local research and monitoring capability.
- Costs: Direct cost of training kangaroo team, cost of KMC staff and physical structure.
- Quick turnover of administrative and medical staff.
- Sustainability in the health system (necessity of a KMC package).

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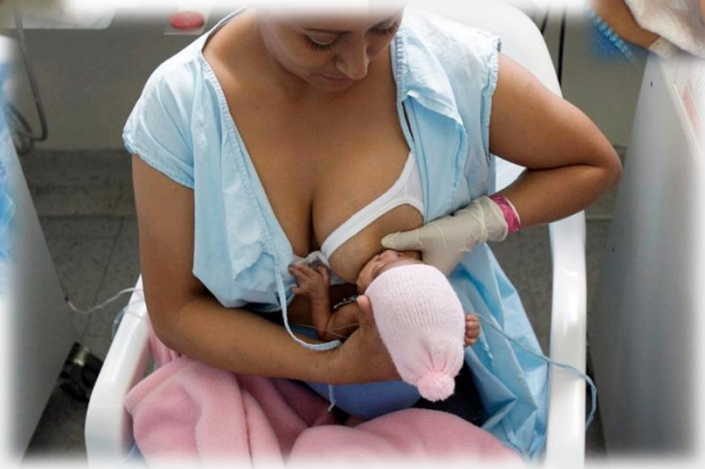
The challenges of feeding a premature or LBWI. It is not impossible, it requires patience, training and love.



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# Dissemination of Kangaroo Mother Care across Colombia


- Colombia has 47 million inhabitants, 75% of the Colombian population is urban (World Bank, WHO).

- Our initial analysis is focused on the urban area (highly populated centers) given that the remaining areas of the country, which constitute large areas of land, are sparsely populated with a low number of low birth weights deliveries.

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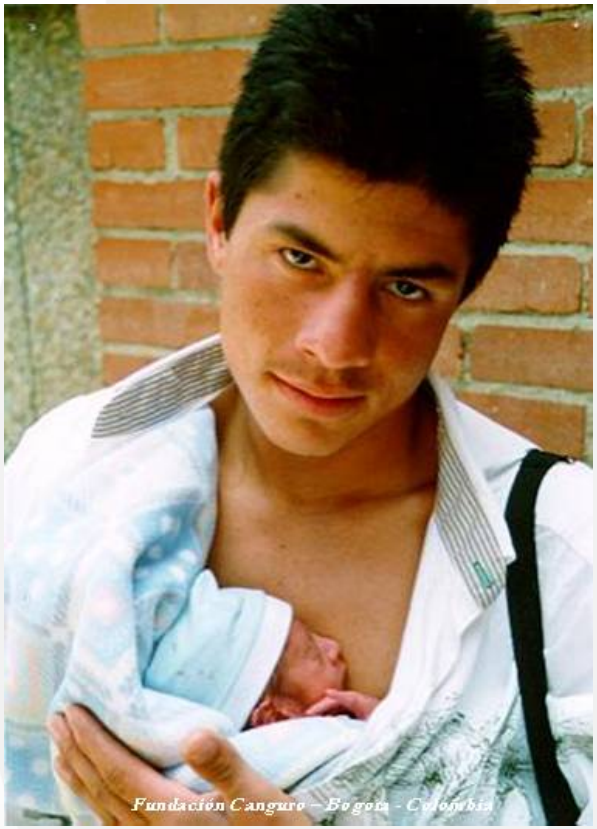
# Dissemination of Kangaroo Mother Care across Colombia

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# Dissemination of Kangaroo Mother Care across Colombia

- Given that 75% (WHO) of the 47 million inhabitants reside in a urban area, this would correspond to **35,250,000** inhabitants that live in urban areas.
- According to 2015 data, the percentage of prematurity in Colombia is 8.8% and LBW is 8.8%, of which 4% corresponds to LBW term infants.
- Therefore, 8.8% + 4% = 12.8% premature or LBWI.
- This means **12.8% of births are candidates to receive KMC** according to the Technical Guideline of Kangaroo Mother Care Programs in Colombia.

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# Dissemination of Kangaroo Mother Care across Colombia


| City | Inhabitants |
|---|---|
| Bogotá | 8 million |
| Medellín | 3.8 million |
| Cali | 2.4 million |
| Barranquilla | 2.4 million |
| Bucaramanga | 2 million |
| Cartagena | 1.3 million |
| Ibagué | 553,526 |
| Pasto | 440,040 |
| Tunja | 188,340 |

The total number of inhabitants of these nine cities corresponds to 21 million, which represents 60% of the totality of the urban population in Colombia.

# Dissemination of Kangaroo Mother Care across Colombia

| KMC programs of Health Institution | Number of infants that receive KMC per year |
|---|---|
| Saludcoop* | 2000 |
| Hospital Universitario San Ignacio, PMCI (COE in KMC)* | 1500 |
| Sanitas | 400 |
| Hospital Universitario San Rafael* | 650 |
| Hospital Universitario Mederi * | 1000 |
| Cafam* y Colsubsidio | 800 |

*Sensitized or Trained by the Kangaroo Foundation

- **Bogotá**
- 8 million inhabitants
- Number of births 2015: 117,877
- Candidates for KMC: 15,324
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 13,792

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Hospital Samaritana | 500 |
| Hospitals that belong to the district: Meissen, Engativa, Tunal, Suba, Instituto Materno Infantil, La Victoria, Simon Bolivar, Kennedy)* | 3200 |
| Clínica Reina Sofia | 50 |
| Hospital Universitario San José, PMCI* (COE in KMC) | 900 |

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- **Bogotá**
- Total: 11, 000
- 11, 000 infants have access to KMC/ 13, 792 candidates for KMC = **80% access**

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Campo Valdés, PMCI (CEO in KMC) * | 1300 |
| Sura | 1500 |
| Coomeva* | 500 |
| Hospital General de Medellín* | 300 |
| Saludcoop* | 800 |
| Clínica Universitaria Bolivariana | 300 |

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- **Medellín**
- 3.8 million inhabitants (includes metropolitan area)
- Number of births 2015: 36,664
- Candidates for KMC: 5, 156
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 4,640
- Total: 4,100
- 4,100 infants have access to KMC/ 4,640 candidates for KMC= **88% access**

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Hospital Universitario del Valle* | 600 |
| Fundación Valle de Lili* | 360 |
| Casa Canguro Alfa | 800 |

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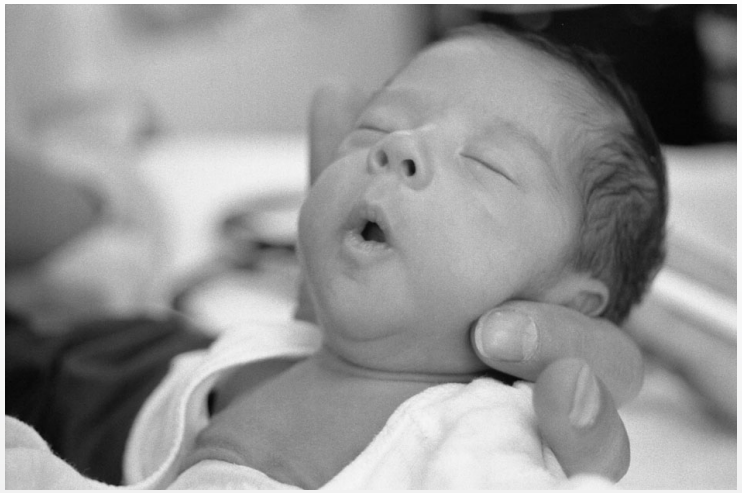

- **Cali**
- 2.4 million inhabitants
- Number of births 2015: 36,047
- Candidates for KMC: 4,686
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 4,218
- Total: 1,760
- 1,760 infants have access to KMC/ 4, 218 candidates for KMC= **42% access**

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Hospital Niño Jesus* | 250 |
| Sura | 150 |
| Saludcoop* | 250 |
| Coomeva* | 250 |

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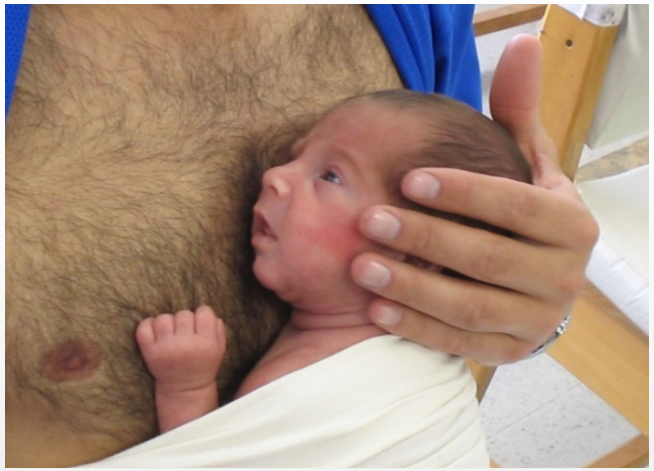

- **Barranquilla**
- 2.4 million inhabitants
- Number of births 2014: 34,649
- Candidates for KMC: 4,504
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 4,054
- Total: 900
- 900 infants have access to KMC/ 4, 054 candidates for KMC= **22% access**

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Hospital Universitario de Santander* | 330 |
| Saludcoop | 150 |
| Clínica San Luis | 150 |

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- **Bucaramanga**
- 2 million inhabitants
- Number of births 2014: 13,521
- Candidates for KMC: 1,758
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 1,582
- Total: 630
- 630 infants have access to KMC/ 1,582 candidates for KMC= **40 % access**

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Clínica Santa Cruz* | 1000 |

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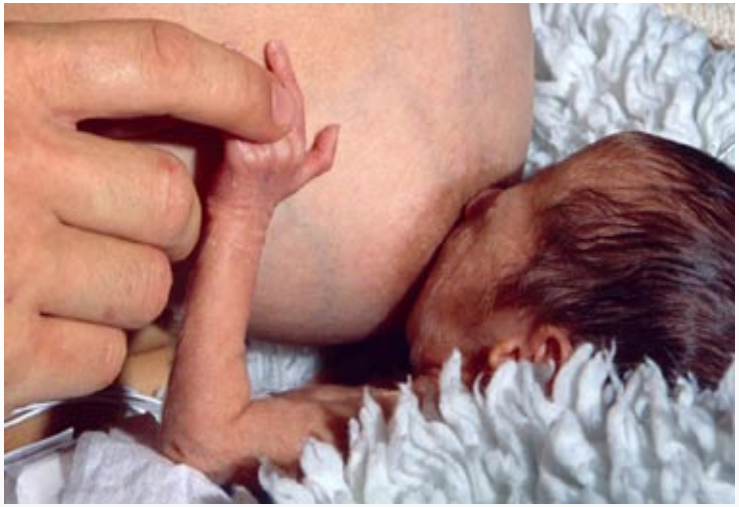

- **Cartagena**
- 1.3 million inhabitants
- Number of births 2014: 24,769
- Candidates for KMC: 3,219
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 2,897
- Total: 1000
- 1000 infants have access to KMC/ 2,897 candidates for KMC= **35 % access**

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# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Hospital Federico Lleras Acosta* | 180 |
| Hospital Unidad Materno Infantil Tolima (UMIT) | 300 |

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- **Ibagué**
- 553,526 inhabitants
- Number of births 2014: 9,288
- Candidates for KMC: 1,207
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 1086
- Total: 480
- 480 infants have access to KMC/ 1086 candidates for KMC= **44 % access**

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Hospital Universitario Departamental de Nariño * | 500 |
| Saludcoop | 250 |

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- **Pasto**
- 440,000 inhabitants
- Number of births 2014: 8,365
- Candidates for KMC: 1087
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 978
- Total: 750
- 750 infants have access to KMC/ 1,087 candidates for KMC= **69 % access**

# Dissemination of Kangaroo Mother Care across Colombia

| Health Institution | Number of infants that receive KMC per year |
|---|---|
| Hospital San Rafael* | 216 |
| Saludcoop | 150 |

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- **Tunja**
- 188,340 inhabitants
- Number of births 2014: 5,444
- Candidates for KMC: 707
- Real candidates for KMC (subtracting mortality cases which corresponds to 10% LBW neonatal mortality of infants <2000 g): 636
- Total: 366
- 366 infants have access to KMC/ 636 candidates for KMC= **58 % access**

# Dissemination of Kangaroo Mother Care across Colombia

- Barriers to access
- KMC is not a source of financial benefit and requires investment for implementation.
- In order to implement a cost-effective KMC Program, an Ambulatory Program is required.
- In most cities, there is a competitive interest between the funds for the KMC Minimum Package of Services and the pediatrician's private practice in the hospital.


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# Dissemination of Kangaroo Mother Care across Colombia

- Bogotá and Medellín
- Highest access to KMC
- Presence in both cities of a COE
- Health Promoting Entities known as EPS in Colombia do not provide prompt payment for the services provided in the KMC Ambulatory Program.
- Medellín has begun training two small cities that receive rural patients, with small neonatal units in order to create a LBW network (Turbo 360 infants with access to KMC per year and Yarumal 200 infants per year).

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# Dissemination of Kangaroo Mother Care across Colombia

- Coastal Region ( Cartagena and Barranquilla)
- On the Caribbean coast, most of the Neonatal Units in public hospitals are private outsourcing and are therefore not interested in implementing a KMC program.
- A KMC Program will shorten the duration of hospital stay and their income.
- Health Promoting Entities, known as EPS do not see KMC Programs as a profitable business and are not aware that KMC Programs are cost saving.


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# Dissemination of Kangaroo Mother Care across Colombia

- Cali and Pasto
- Lack of a Kangaroo Ward (joint stay of the mother and infant) and housing facilities for mothers to stay if they live far away from the KMC Ambulatory Program.
- Lack of additional KMC Programs in secondary cities with smaller health facilities and neonatal units in the same region as the Excellence Center.
- There is only one KMC Ambulatory Program in the city, lack of additional KMC Ambulatory Programs.


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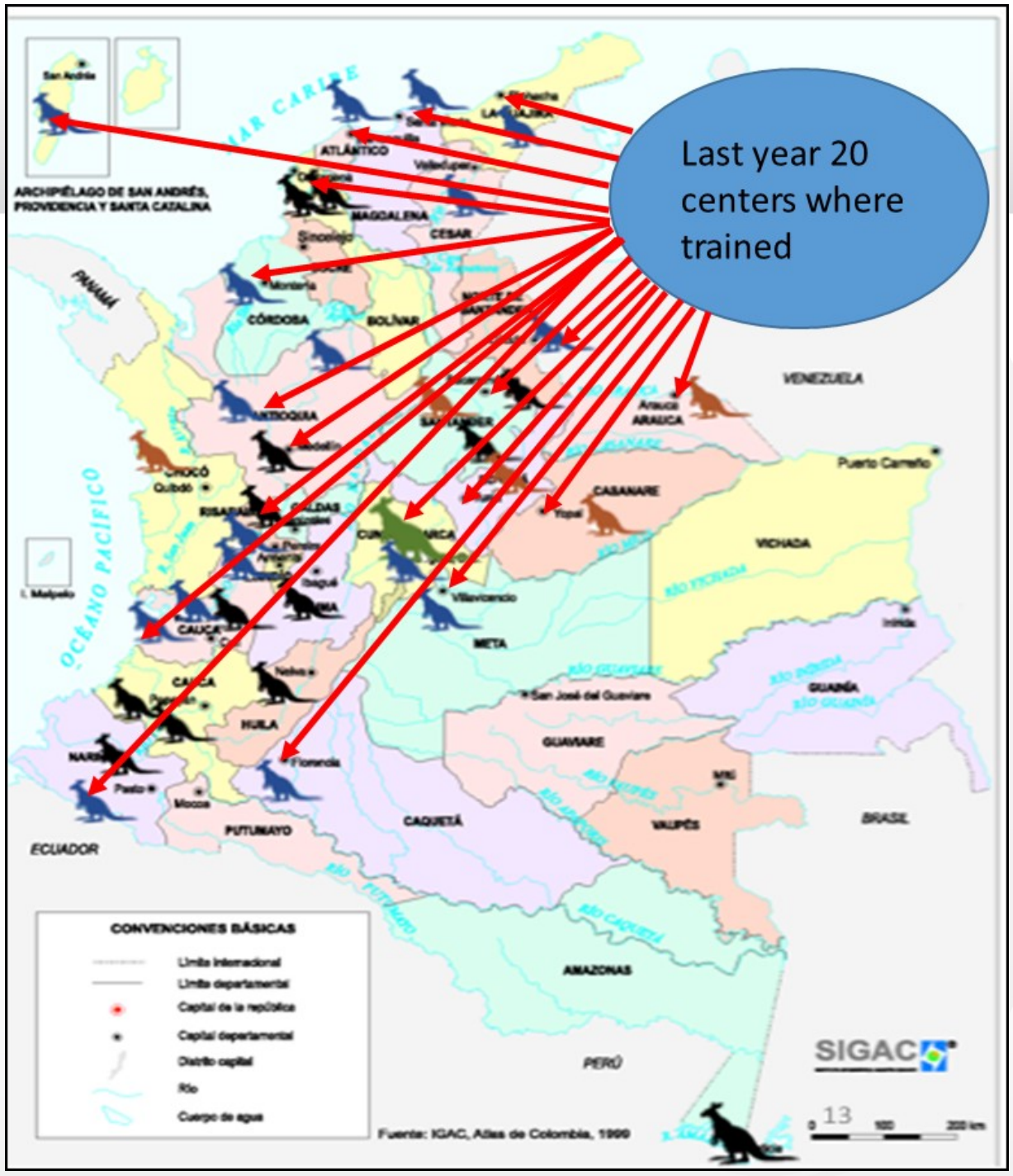
# Dissemination of Kangaroo Mother Care across Colombia

- Bucaramanga and Tunja
- Only hospitalized infants will enter the KMC Ambulatory Program. There is no staff to identify KMC candidates with birth weight between 2,000 and 2,500 g or near term premature infants in the post partum ward.
- A great number of mothers live far away from the program or have not promptly registered their infant in the Colombian legal registry system, they leave without the authorization from the EPS to pay for the services and without a guarantee of appointment in the KMC Ambulatory Program.

# Acceleration of KMC diffusion in Public Hospitals

2014-2015:
We carried out in 6 months KMC training (train the trainer model) in 22 hospitals chosen by the Health Ministry according to their priorities in the country.
The hospitals were not able to rapidly implement a KMC Program in such a short time, but the results have been interesting.

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# Dissemination of Kangaroo Mother Care across Colombia (2014-2015)

- Accelerated 'Training the Trainer Model':
- After one year: 80% newly implemented KMCP
- Composition of the KMC Team: Usually a pediatrician and a nurse
- Psychologist: Only present in 25% of the trainings
- Open door policy in the Neonatal Unit: 26%
- Availability of chairs in the Neonatal Unit: 91%
- KMC Ward: 26,5%
- KMC Adaptation: 83,5%
- Written KMC protocol: 85,3%
- Opportunity of the first appointment 24-48 h after discharge in KP: 72,7%
- All premature and LBW infants included in the KMCP: 61,8%
- Health insurance pays for the KMC follow-up: 64,7%

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# Conclusion

- All pediatricians are now sensitized to KMC, training of pediatric residents, psychologist and nurses in the main universities (associated to a Excellence Center) has a been key aspect.
- The Colombian Neonatal Society has adopted KMC.
- Recollection of data in KMCP remains problematic (requires time, lack of data clerk). The problem has been detected and acknowledged.
- The Health Ministry's guidelines must be transformed into legal norms to oblige health insurances to pay the complete KMC package: early discharge results attractive because the cost decreases not because of the KMC high risk follow-up ( early Child development).
- Electronic tools such as clinical records, an e-learning platform for training, electronic data entry to rapidly calculate indicators, are necessary to simplify the practice of KMC.

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# KMC DISSEMINATION: 1994 - to date

***70 teams from 35 countries have been trained in Bogotá, Colombia***


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With the help of the World Laboratory, GCC, USAID, EC, BGF and others who have believed in our work.

# Colombia, the birthplace of Kangaroo Mother Care

- Besides our dream and love for peace in Colombia, Kangaroo Mother Care is a beautiful image of our country. A welcomed change from drug scandals, mafia and football.
- Lets continue to work as a KMC community to share this innovative practice to all premature and low birth weight infants who are candidates.

Dr. Edgar Rey Sanabria

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