

# The Potential of the Baby-Friendly Community Initiative to Improve Early Child Development Outcomes and the Feasibility of Integrating Care for Child Development into the Package: Lessons from Koibatek County, Kenya

## The Issue

The Baby Friendly Hospital Initiative (BFHI) model, was developed by the World Health Organization (WHO) to globally promote optimum breastfeeding in maternity wards in line with the International Code of Marketing of Breast Milk Substitutes. However, in developing countries, where many deliveries do not occur in health facilities, the effectiveness of the BFHI may be limited. To address this gap in the developing countries, the Baby Friendly Community Initiative (BFCI) was developed to expand on the tenth step of the BFHI which focusses on support for breastfeeding mothers after they leave hospital, at the community level to promote optimal infant and young child feeding (IYCF). In Kenya, the Ministry of Health's Division of Nutrition and Dietetics has adopted the BFCI for promotion of MIYCN, with implementation guidelines developed in 2016 (<https://bit.ly/2HaNj47>).

The BFCI model was first piloted between 2014 and 2016 in a rural setting in Kenya, in Koibatek sub-County, Baringo County, through a cluster randomized study design (Kimani-Murage et al 2015). The study involved slightly over 800 mother-child pairs, followed up from pregnancy until the child was at least six months old. The intervention involved home-based counselling of caregivers by Community Health Volunteers (CHVs), sensitization of health care providers in local health facilities in the sub-county, and provision of support to mothers through Mother-To-Mother Support Groups (M2MSGs), and Community-to-Mother Support Groups (CMSGs). The intervention was implemented in six community health units (CHUs); while seven control units received the standard care. The study indicated potential effectiveness of the BFCI in promoting optimal infant feeding. With regards to the primary objective, significantly higher exclusive breastfeeding rates were documented in the intervention compared to the control group. In the intervention group, 88% of children were reported to be exclusively breastfed for



six months, while in the control group, 44% were reported to be exclusively breastfed for six months. Narratives from caregivers indicated that the intervention enhanced their skills and competencies in breastfeeding and infant feeding which improved their infant feeding (<https://bit.ly/2OBkLEn>).

The successful implementation of the model demonstrated the BFCI's ability to foster optimal infant and young child feeding practices and improve child health outcomes. However, its impact on early childhood development (ECD) outcomes was not assessed during this period. The project aimed to fill that gap by gauging the impact of the BFCI on young children's cognitive, social, emotional and motor outcomes, which were assessed in a follow up of the children who received the original BFCI intervention in 2018, based on the initial cluster-randomized design. Furthermore, the project tested the feasibility and potential effectiveness of integrating the Care for Child Development (CCD) package into the BFCI to enhance its potential to improve child development outcomes. The CCD is a holistic parental support ECD intervention aimed at guiding families on how to play and communicate with their children, so as to foster their optimum growth and development. The CCD package provides information and recommendations for social support and cognitive stimulation of young children, through sensitive and responsive caregiver-child interactions (<https://uni.cf/2v66jYW>).

This package has been customized for Kenya through the support of the Ministry of Health, Kenya by PATH.

This briefing paper documents the impact of the BFCI on ECD outcomes and learnings on the feasibility of integrating the CCD package into the BFCI.

## Impact of the Baby Friendly Hospital Initiative (BFCI) intervention on Early Child Development (ECD)

Table 1 below outlines key findings from the analyzed quantitative data collected from 543 caregivers and their young children. Table 2 summarizes the regression estimates of the intervention effect on each of the ECD outcomes for the interested reader. For those less familiar with regression parameter estimates, Table 1 covers the main lessons learned from the analysis.

Although the BFCI has been positively associated with a number of child development outcomes, this association is not statistically significant once the cluster effect is taken into account. This study was only able to gather data from 543 of the original BFCI infants. As result, the sample size in some clusters was small limiting the ability of the study

to fully test the effect of the intervention on the ECD outcomes with sufficient statistical power in a cluster based model. Therefore, there is need to test this package with a larger sample within clusters to be sure of its effectiveness. It is also unfortunate that despite randomization and probably because of the relatively small number of clusters, the children in the intervention group were shorter at birth, which might reduce the effect that the intervention achieved on early childhood development outcomes.

## Integration of Care for Child Development into the Baby Friendly Community Initiative

From February 2018 to April 2019, the African Population and Health Research Center (APHRC) in collaboration with the Unit of Nutrition and Dietetics, the Unit of Community Health Services, Kenyatta University, PATH and Loughborough University, piloted the Care for Child Development (CCD) package in the six Baby Friendly Community Units that

formed the intervention groups of the original trial.

Community Health Volunteers (CHVs) and Community Health Extension Workers (CHEWs) from the six intervention community health units, and representatives from the Koibatek sub-County Health Management Team (SCHMT) were trained on the CCD package. The CHVs and CHEWs were expected to incorporate the CCD messages into the BFCI messages they routinely communicated to the caregivers in the community. This holistic approach to childcare is aimed

**Table 1: Impact of the BFCI intervention on ECD**

Effect of the intervention on infant feeding, immunization and growth	<ul style="list-style-type: none"> <li>The intervention was positively associated with children having received all immunizations, with exclusive breastfeeding in the first four months and with meeting minimum dietary diversity scores.</li> <li>There was a lower percentage of wasting (low weight for height) in children aged 6-12 months.</li> </ul>
Effect of the intervention on early childhood development outcomes	<ul style="list-style-type: none"> <li>The intervention was associated with a positive improvement in all early childhood development outcomes assessed although this difference was only significant for problem solving, gross motor and fine motor skills.</li> </ul>
Effect of infant feeding, immunization and mid upper arm circumference on early childhood development	<ul style="list-style-type: none"> <li>Initiation of breastfeeding immediately after birth was positively associated with improved problem solving skills.</li> <li>Meeting the minimum dietary diversity score of four or more foods was positively associated with better communication, problem solving, personal social, gross motor, and fine motor skills.</li> <li>Having a Mid-Upper Arm Circumference (MUAC) score &gt;-2 was positively associated with problem solving and gross motor skills.</li> </ul>
Effect of the intervention on stunting	<ul style="list-style-type: none"> <li>The intervention was positively associated with stunting at 2-4 months and 6-12 months. At the beginning of the study, the intervention group was shorter than the control group at birth. This difference reduced during the first year, although the intervention group remained significantly shorter.</li> </ul>

**Table 2. BFCI intervention effects on ECD outcomes**

	Intervention (n=247)	Control (n=296)	Intervention vs Control <sup>a</sup>	Intervention vs Control <sup>b</sup>	Intervention vs Control <sup>c</sup>	Summary of findings
ASQ Communication (mean, SD)	54.27 (8.37)	52.31 (12.54)	1.12 (-0.75, 3.01) SE=0.96	1.13 (-4.49, 6.74) SE=2.58	0.77 (-3.15, 4.71) SE=1.80	Intervention communication scores slightly higher than control but not statistically significant
ASQ Problem Solving (mean, SD)	50.50 (9.79)	46.77 (13.41)	3.14 (1.08, 5.20)** SE=1.04	3.14 (-3.34, 9.62) SE=2.97	3.24 (-3.37, 9.85) SE=3.03	Intervention problem solving skills significantly higher than control but not statistically significant after controlling for cluster
ASQ Personal and Social (mean, SD)	50.58 (8.11)	48.34 (10.92)	1.42 (-0.31, 3.17) SE=0.88	1.43 (-3.35, 6.21) SE=2.19	-0.98 (-4.97, 3.15) SE=1.86	Intervention personal and social scores slightly higher than control but not statistically significant
ASQ Gross Motor (mean, SD)	52.13 (9.99)	46.55 (13.73)	4.47 (2.36, 6.58)*** SE=1.07	4.47 (-1.74, 10.68) SE=2.85	2.54 (-1.32, 6.41) SE=1.77	Intervention gross motor skills significantly higher than control but not statistically significant after controlling for cluster
ASQ Fine Motor (mean, SD)	44.45 (13.90)	40.45 (15.92)	3.92 (1.21, 6.64)** SE=1.38	3.92 (-4.40, 12.24) SE=3.82	1.75 (-6.74, 10.25) SE=3.90	Intervention fine motor skills significantly higher than control but not statistically significant after controlling for cluster

Note:

<sup>a</sup>Path C: linear regression analyses controlling for child age, primary caregiver to child, caregiver occupation, education of respondent

<sup>b</sup>Path C: linear regression analyses controlling for child age, primary caregiver to child, caregiver occupation, education of respondent and adjusted for potential clustering within community unit (unit of randomisation)

<sup>c</sup>Path C': linear regression analyses controlling for child age, primary caregiver to child, caregiver occupation, education of respondent, all significant infant feeding, growth, and immunization variables affecting the relevant ECD outcome, and adjusted for potential clustering within community unit (unit of randomisation).

at improving the health, nutrition and developmental outcomes of children in these communities at scale.

In the seven control units, CHEWs and SCHMT representatives were trained as trainer of trainers (ToTs) on the integrated version of the BFCI-CCD package. County Health Management Team (CHMT) representatives were present during the training to be sensitized on the integration of the two components. The CHEWs from the control units went ahead to train their CHVs under the supervision of the SCHMT representatives.

## Feasibility of Integrating Care for Child Development (CCD) into the Baby Friendly Community Initiative (BFCI)

Qualitative data on perceptions regarding CCD were collected from caregivers including mothers, fathers and grandfathers and the CCD-trained CHVs from the six community health units that were involved in the intervention. Thematic analysis was employed to determine the feasibility of incorporating parental support for ECD into the BFCI in Koibatek sub-County, Kenya. The different categories of participants indicated enthusiasm regarding being exposed to the CCD counselling and support. CHVs were enthusiastic about the skills gained through the training. They indicated that they were able to combine counselling caregivers on both the aspects of the BFCI and CCD. The participants also provided recommendations for improvement. The findings are outlined below, and recommendations thereafter.

### Feasibility of integrating:

#### 1. Increased awareness on CCD among caregivers

*"... I think CCD-care for child development involves things to do with playing and communicating with a child. It also helps the child to develop mentally and physically as he/she continues to grow. When you play with a child; he/she understands things, he/she develops to understand emotionally, socially; he/she recognizes things. You also get to know the child emotionally, note the emotional or physical growth of the child. That is how I have understood CCD," FGD, CHVs, Koibatek sub-County.*

#### 2. Improved play and communication practices in the community

*"Before they did not communicate and play with the child. But after being taught how to do it, they can now play with the child and give them objects to play with, as they observe how they are playing, how they*

*are walking and how they are enjoying. The mother is able to monitor the growth of the child at different stages, like them being able to find the toys by themselves, and how play has helped their muscles to grow, running around and how happy they are. Playing with the child is also a good opportunity for the mother to monitor the health of the child, to see if there is any problem," FGD, Mothers, Koibatek sub-County.*

*"After meeting with the CHV, I learned the importance of playing with the child. It is not like in the past; we did not have any longing to stay with a child mostly because of many other responsibilities. But after learning that it is important to interact with children because it makes the body develop, and...in the mental development, together with developing muscles in his/her body. So these days there are changes, not like in the past," FGD, Mothers, Koibatek sub-County.*

#### 3. Improved male participation in childcare within the community

*"And it is true that the fathers were not coming close to the child. They were saying a small child belongs to the mother. Because even when we arrive at households; if you ask if they play with the child, they say it is the mother who usually plays with the child. But after the training; I saw that even the father has taken his space," FGD, CHV, Koibatek sub-County.*

*"For example, we have observed big changes, because, at first men did not even want a child to come close to children; but at this time, we have become closer, even when the child has been born, you have the longing to hold that child," FGD, Fathers, Koibatek sub-County.*

#### 4. Increased childcare knowledge among the CHVs

*"I was able to learn a lot; I did not know that a child hears even before he/she is born. I also did not know that a child sees immediately after he/she is born. Once I came to know, I longed very much to go and teach people who are in the village. Also, I was able to learn things like the importance of playing with a child. I was able to know; and that a child, there is a way he/she can be helped to play when he/she is in different stages. There is a stage when he/she is small, there is a stage of when he/she is 6 months, there is a stage when she/he is 9 months and continuing like that until he/she is two years and going forward. So I was able to learn and I took that information to the village," FGD, CHVs, Koibatek sub-County. We now have the knowledge and experience on how to play with a small child and with a bigger one..." FGDs, CHVs, Koibatek sub-County.*

#### 5. CHVs gained necessary skills on how integrate both BFCI and CCD messages during their counselling sessions

*"When you are integrating CCD with BFCI, you are putting them together according to the age of the child. For example, for a child aged below six months. You begin with teaching about exclusive breastfeeding. Then you go to playing and how to play with that child according to that age," FGD, CHVs, Koibatek sub-County.*

*"When we reach the households, we ensure that we combine what we have been taught about CDD and BFCI because we were taught as one CCD-BFCI. Now we just add that of CCD as we had taught BFCI, FGD, CHVs, Koibatek sub-County.*

## Recommendations from the Communities Regarding Integration of Care for Child Development (CCD) into the Baby Friendly Community Initiative (BFCI)

- The integrated training lessons should be made simpler and easier to grasp for the CHVs. More practical sessions on the use of the integrated checklists and job aids are needed during the training.
- Having two different checklists, one for BFCI and another for CCD, is cumbersome and difficult to use concurrently. Thus, an integrated checklist and simplified key messages tool are needed. The checklist and key messages tool should also contain information on complementary feeding.
- The CHVs require a reporting tool that compiles both the BFCI and CCD components to help document their work as they currently only have the BFCI reporting tool.
- Quarterly CHV supervision should be done led by the SCHMT. However, supervision with CHEWs should be done more regularly, that is, on a monthly basis as more contact between the SCHMT and CHEWs is needed to build the capacity of the CHEWs.
- Support and mentorship of the CHVs by the CHEWs is very important. The more active the CHEWs, the more

active the CHVs as they are reporting to the CHEWs. This gap was particularly evident in CUs where the CHEW who was previously trained on BFCI and CCD was transferred to other community units as that support had been lost without follow up of retraining of any newly appointed CHEWs. This was also evident in CUs without an acting CHEW. There is therefore a need for continuous training of new CHEWs in the integrated BFCI and CCD package.

- CHVs require a lot of practice, practical refreshers, constant mentorship, supportive supervision and monetary support to deliver the interventions. Due to a lack of monetary support and without a sustainable way to ensure finance for them, the CHVs often lose motivation and as a result the implemented programs tend to lose their effectiveness in the long run. Provision of stipends will help facilitate their work.
- Maternal and child health workers should be included in the training cohorts to increase their BFCI-CCD knowledge. More ECD learning centers and community play spaces should be established in the community. Additionally, the play spaces available in the existing ones should be increased.
- Community gardens to be established in the ECD learning centers from which children under their care can get access to various foods including fruits, vegetables and eggs.
- Government to support daycare centers by subsidizing the cost for parents who cannot afford to pay for the services.
- Ensure ECD learning centers provide services to children living with disabilities.
- Ensure continuous capacity development of CHVs through trainings, workshops etc.
- Avail family counselling and social support services to families undergoing social challenges to minimize or eliminate the possibility of the children's learning being compromised or affected.

- Establish a referral system between ECD centers and nearby health facilities to ensure that children in ECD centers can access timely health services in case they are needed.
- Establish a national, county and sub-county steering working group that oversees the implementation, management and maintenance of programs targeting children aged 0-36 months.

## Conclusions

Implementation of the BFCI model demonstrated its potential to positively improve ECD outcomes such as problem-solving, gross motor and fine motor skills, despite the intervention groups starting shorter than the control groups. However, while there was an indication of positive effects of BFCI as it is constituted on the ECD domains, the difference was not statistically significant between intervention and control groups. This indicates need for more deliberate integration of ECD services into the BFCI. The study further shows feasibility of integrating CCD into the already existing BFCI model, and the potential for effectiveness in improving childcare practices in the community.

Future interventions targeting the mental, physical and social wellbeing of children should consider this integrated approach, and test for its impact on ECD outcomes. There is still more work to be done to fully develop the model including simplifying CHV training sessions, ensuring training can be maintained as staff move posts, improving the tools for key messages and monitoring of an integrated program, ensuring that all aspects of the programs are incorporated into checklists, enabling regular supervision of CHEWS and CHVs, providing more community spaces for support for ECD, subsidies to support children from vulnerable families in day care, ensuring ECD programs can support the needs of children with disabilities, a steering group to facilitate the linking of health and ECD and safeguarding services, including all relevant workers into training, and financing the work of the CHVs. After such adaptations are made a full scale randomized control study to test the integrated package would be appropriate.

## Institutions

Loughborough University, UK; African Population and Health Research Center (APHRC), Kenya; Kenyatta University, Kenya; Ministry of Health, Kenya; County Government of Baringo, Kenya.

## Contributors

Esther Kinuthia, Patricia Wekulo, Peterrock Muriuki, Milka Wanjohi, Silas Onyango, Kenneth Okello, Betty Samburu, Stephen Mwangi, Oscar Kadenge, Teresa Mwoma, Judith Kimiywe, Natalie Pearson, Emma Haycraft, Elizabeth Kimani-Murage, Paula Griffiths.

CONTACT PERSONS: Prof Paula Griffiths, Loughborough University - [P.Griffiths@lboro.ac.uk](mailto:P.Griffiths@lboro.ac.uk); and Dr. Elizabeth Kimani-Murage, APHRC - [ekimani@aphrc.org](mailto:ekimani@aphrc.org).

## Acknowledgements

We acknowledge the Unit of Nutrition and Dietetics, and the Neonatal, Child and Adolescent Health Unit, Ministry of Health, and PATH - Kenya, for technical support. We are also highly indebted to the sub-County Health Management Team, Koibatek sub-County and the County Health Management Team, Baringo County for supporting the implementation of the project. We also thank the Community Health Volunteers in Koibatek sub-County, and the study community for their participation in the project. We also acknowledge the data management team and the Policy Engagement and Communications team at the APHRC for their support.

We would also like to thank the African Early Childhood Network (AfECN) for their support in training the various participants of the Care for Child Development (CCD) package. This research/project is supported/funded by the British Academy's Early Childhood Development Programme, supported under the UK Government's Global Challenges Research Fund and by the Department for International Development.

## Further reading

APHRC. The Baby Friendly Community Initiative – A Pilot Study in Koibatek, Baringo County, Kenya. Short Report. 2017. URL: <http://aphrc.org/wp-content/uploads/2017/09/Baby-Friendly-Community-Initiative-short-report.pdf>.

Kimani-Murage, Elizabeth., Kimiywe, Judith., Kabue, Mark., Wekesah, Frederick., Matiri, Evelyn., Muhia, Nelson., Wanjohi, Milka., Muriuki, Peterrock., Samburu, Betty., Kanyuira, James., Young, Sera., Griffiths, Paula., Madise, Nyovani., McGarvey, Stephen (2015). Feasibility and effectiveness of the baby friendly community initiative in rural Kenya: study protocol for a randomized controlled trial. *Trials*, 16, 431. doi:10.1186/s13063-015-0935-3. URL: <http://www.trialsjournal.com/content/16/1/431>

Ministry of Health, Kenya. Baby Friendly Community Initiative Implementation Guidelines. 2016. URL: <https://www.mcsprogram.org/wp-content/uploads/2018/04/BFCI-Implementation-Guidelines.pdf>

UNICEF. Care for Child Development Package. URL: [https://www.unicef.org/earlychildhood/index\\_68195.html](https://www.unicef.org/earlychildhood/index_68195.html).