Policy Note

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Effective Continuum of Care for every mother and child: Implementation research in Ghana

by JICA Research Institute／Human Development Department*

Summary

Most maternal and child deaths occur during childbirth and in the first few days of life, and many of them happen at home. The concept of Continuum of Care (CoC) has been a core principle and framework underpinning strategies to reach them at crucial times and places but delays and drop-outs have occurred frequently. JICA has conducted an implementation research study to find and examine practical suggestions for effective CoC implementation in Ghana (2012-2016). This policy note elaborates a set of policy recommendations based on the research findings to date:

1. Designing intervention packages that consider barriers and facilitators relating to access to health services at each stage of the CoC in the local context is essential;

2. Improvements in basic health facility infrastructure to improve service delivery capacity and quality, and strengthening the capacity of community health workers to link household and health facilities are required;

3. Insisting that proper health education and the empowerment of beneficiaries are indispensable for strengthening care in households and avoiding delays in reaching outside care;

4. Utilizing new technology and social innovations. Some of these are: 1) A CoC Card to visualize service schedules and uptake of both mothers and babies at a glance and to motivate mothers to achieve on-time visits, and that this should be reflected in a new MCH handbook; 2) The effective use of free messenger apps on cell phones for timely action and coordination; and 3) Using the CoC Completion rate as an indicator to remind service providers to avoid “drop-out” from the CoC process;

5. That impact evaluation/implementation research and utilization of evidence needs to be promoted.

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1. The Continuum of Care (CoC) in maternal, neonatal and child health in developing countries

The Continuum of Care (CoC) concept has been one of the guiding constructs in maternal and child health for the international community including Japan.[1] CoC is the provision of necessary services in a seamless manner from pre-pregnancy to postnatal care, at home, in the community, and in health facilities, and has been a core principle and framework that underpins strategies to reach people in need at the crucial time and place.

Has CoC been implemented effectively? While the mortality of mothers and children in developing countries was roughly halved by 2015 compared to the 1990s through various international efforts, about 0.3 million pregnant women and over 5.4 million children under 5 years old still die annually. Much of this occurs at home and is preventable if only appropriate measures can be put into place in advance. Despite the active advocacy of CoC, we face lots of missed-opportunities through cracks in the health systems and between service delivery responsibilities, together with the impact of the time and space dimensions, since maternal and child health policy and programs tend to address the mother and child separately.

An effective and integrated CoC for mothers, newborns and infants is expected to be enshrined in service delivery even in the Sustainable Development Goals (SDGs) era to achieve universal health coverage (UHC) aimed at leaving no one behind. JICA conducted implementation research[2] on the intervention packages required to achieve effective CoC for mothers and children integrated in Ghana from 2012 to 2016. This study was designed to find out and examine practical suggestions for effective implementation. JICA has developed this policy note based on that implementation research.

2. Implications of implementation research to realize the CoC effectively

2-1. Designing intervention packages that consider barriers and facilitators relating to access to health services at each stage of CoC in the local context is essential

It is important to identify the various barriers and facilitators related to access to health services at each stage of pregnancy, from childbirth to childhood, as well as background information about mothers and children those who do not receive services as expected, and to select effective measures based on these. The situation of mothers and children changes over time and complications may occur anytime. It is essential for any pregnant women and newborns to receive proper instruction and support from health workers as part of the normal CoC, so that risks may be detected earlier through checkups.

However, those opportunities are missed quite often in developing countries. Enhancing postnatal care within 48 hours of delivery is critical because most deaths occur during this period, but postnatal care (PNC) is often delayed beyond 48 hours or does not happen in many countries. In Ghana, even though the Antenatal Care (ANC) rate (more than 4 times) and the child birth rate in health facilities are high at 86% and 76% respectively, the PNC rate within the initial 48 hours after childbirth is only 25%.[3]

A mother's knowledge, values, family relationships, and socio-cultural background strongly affect her health seeking behavior. A prior survey of Ghana implementation research revealed that only 8% of mothers receive all the essential health services of CoC in a timely manner (ANC 4 times + delivery assisted by a skilled birth attendant + 3 PNC within initial 48 hours, on the 7th day and during the 6th week). Poor geographical and financial access to care, marital status, the education

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level of parents, whether it was an expected or unexpected pregnancy, and recognition of the mother cannot cure the diseases of children that have been observed.[4]

The implementation research reflected these factors in deciding the intervention package (CoC orientation for health workers, introduction of a CoC card, 24-hour retention at the health facility after delivery, and home visit PNCs), and this package contributed greatly to the promotion of CoC for mothers and children (refer sections 2(2) and (3) and the box for details). Since interventions in the package are relatively easy to deploy, they could become effective options in other regions facing similar barriers.

2-2. Improvements in basic health facility infrastructure to improve service delivery capacity and quality, and strengthening the capacity of community health workers to link household and health facilities are required

Strong health systems that function in emergency situations, skilled healthcare human resources, health facilities and equipment, and a stable supply of medicines and consumables are indispensable for the effective promotion of CoC. At the same time, strengthening of the linkage between households and health facilities is another essential element.

Community health workers play an important role in linking household and health facilities. We need to prioritize their capacity building and improve their working environment for them to become better contact points. In the Ghanaian implementation research, community health workers received orientation training to enable them to explain the importance of CoC to mothers, and were provided with motorbikes for home visits, in addition to the introduction of the CoC card. Using the CoC card, a mother and a health worker can share the mother's CoC status at a glance. For example, a health worker sets a scheduled date for the next visit - if a mother comes back for the service as scheduled, the health worker puts a gold star sticker on the CoC card to reward her on-time visit. If not on-time, an orange star sticker is given. Through these interventions, both health workers and mothers improved their recognition of the importance of CoC and the rate of PNC was drastically increased.

We should not forget the need to ensure the quality of health services provided in CoC for mothers and children though. Even if health services and health education are provided in a timely fashion, without essential contents it is not possible to realize the expected results. Therefore, monitoring and supervision of the service quality aspect and feedback of this information to managers and service providers in both public and private facilities is needed. Customer satisfaction, such as comments on facility cleanliness, convenience, and the attitudes of health workers, is another important aspect. The implementation research that has been undertaken shows that intervention to improve quality services is mainly limited to the provision of equipment (diagnosis equipment, hospital beds, and so on) and the orientation of health workers to the concept of CoC. Nevertheless, some quality improvement has been observed (such as better counseling, early risk detection of pregnancy and newborns and prompt referral of high-risk cases to upper level hospitals). Further quality improvement through the ongoing efforts of community health project based on the life-course approach and MCH handbook introduction project is expected.

2-3. Proper health education and empowerment of beneficiaries are indispensable for strengthening care in households and avoiding delays in reaching care.

Opportunities for strengthening care in the

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household may be missed because families are not informed or not empowered to act on healthy choices. Proper understanding of the mother and family and their proactive health actions are essential to the CoC for mothers and children in addition to health systems strengthening and enhancing service delivery. The international strategy "the Global Strategy for Women's, Children's, and Adolescent's Health (2016- 2030)" also emphasizes exaltation of the subjectivity of beneficiaries such as mothers and their families to improve maternal and child health. The empowerment of potential beneficiaries is indispensable if we are to detect early risk signs of pregnancy and in newborns, and to provide the earliest proper treatment.

For the empowerment of beneficiaries, various approaches are important, such as the strengthening of the health education and communication skills of health workers working at the community level, obtaining their support to create an environment for mothers and family to be able to take action and their help to increase support from surrounding people. The introduction of the CoC card was confirmed to be effective in preventing drop-out from CoC and promoting behavioral change in mothers. A significant increase in the rate of PNC and the delivery assisted by a skilled birth attendant were observed in the implementation research.[5] Holding their own medical records, such as a CoC card, increases control of their self-efficacy of mothers through understanding their own pregnancy and health.[5] The WHO has recommended that each pregnant woman carry her own case notes during pregnancy to improve continuity, quality of care and her pregnancy experiences.[6] The WHO recently published guidelines on home-based records for maternal, newborn and child health as well.[7] Development and modification of home-based records to meet each country's situation, and efforts to enhance understanding, enthusiasm and interest of mothers should be promoted. Just ensuring distribution of the home-based record without training on its proper use for health workers does not work as expected. Thus, improvement of service delivery environment, utilization in health systems, securing budget allocations, and supervision and monitoring of service delivery should be implemented together.

2-4. Utilization of new technology and social innovations

It is expected that new technology and innovation will contribute to enhance the quality of CoC for mothers and babies. A variety of new technologies are already applied in the world. For example, the electronic MCH handbook has been introduced in some cities in Japan and Palestine, the reminder system by cell phone and remote diagnoses are also being piloted in other areas. Innovation defines not only the development of new technologies for hard infrastructure but also the reform of methods of management to give additional value. The social innovations observed in the implementation research in Ghana are listed below.

〈CoC Card to visualize service schedule and service uptake of both mothers and babies at a glance and to motivate mothers for on-time visits: reflected in the policy decisions on the development of a new MCH handbook〉

The CoC card helps mothers to visually understand where they are in the process of CoC. A CoC card that connects ANC and the delivery to PNC for mother and child health played a great role in the promotion of CoC in Ghana, where two separate types of home-based records (i.e. maternal health records and child health records) are operationalized. Based on the results of this implementation of the CoC card, the government of Ghana promptly decided to combine the said two handbooks into one now known as the "Maternal and Child Health Record Handbook" (Ghana MCH handbook), including the evidence provided in new

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WHO recommendations, and the government also decided to expand its use nationwide.

The MCH handbook is used in about 40 countries worldwide as a home-based record with multiple functions. WHO is reviewing the MCH handbook's effectiveness in relation to health outcome to reflect in the new guidelines home-based records for MCH. The effectiveness of MCH handbook should also be verified further on other multiple functions, total value, and cost effectiveness.

〈Effective use of the free messenger app on cell phones among service providers for timely action and coordination for referrals and quality patient care〉

The health workers who had been provided training on CoC and understood the importance of communication started to use WhatsApp (a free messenger app) to make a communication group among health workers at different service delivery points. Even though they normally use their phones for communication, WhatsApp became the platform for effective communication as it enables more than 3 people to communicate all at once for free and records this. IT utilization is expected to spread rapidly in various places, but it is necessary to utilize it while paying attention to personal information protection and information security.

〈CoC Completion rate: an indicator to remind service providers to avoid "drop-out" from the CoC process〉

The government of Ghana plans to include the CoC Completion Rate used in JICA's implementation research as an indicator in the regular reporting system (DHIMS2) from each health facility to promote effective monitoring. This indicator could be an innovation. The CoC Completion Rate indicates how many mothers dropout during the CoC process in a target area. The health workers improve the education of CoC with mothers by raising their own awareness of the CoC Completion rate, which contributes to raising the motivation of both mothers and health workers. With this enhanced motivation, mothers would not miss the PNC and emergency response procedures. Though the relationship of CoC Completion Rate and mortality rates of mothers and neonates will be analyzed in the future, an in-depth discussion among international experts on the validity of the CoC Completion Rate and its usefulness is expected.

2-5. Impact evaluation/Implementation research and utilization of evidence need to be promoted

The implementation research verified that an intervention package which puts the importance on the convenience and empowerment of the beneficiaries contributes to making mothers take regular visits for CoC. An analysis of how the intervention package contributes to decreasing mother and neonate mortality rates and its cost effectiveness will be conducted soon.

To realize the UHC including universal access to mother and child health care, it is important to mobilize financial resources by revealing effective implementation processes, useful innovations, and the cost effectiveness of the approaches chosen. There is an accumulation of scientific evidence on the effects of various health interventions as public property across the world. JICA has expressed its intention to actively utilize such evidence to enhance JICA's operations, as well as to accumulate impact evaluation case material for the quantitative validation of the contribution of the projects to those outcome indicators.[8] Development partners are expected to strengthen their effort to utilize, create, and deliver the evidence of the operation of each project, including active application of impact evaluation as far as the situation and budget permits.

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Outline of the Implementation Research (cluster Randomized Controlled Trial (cRCT) in Ghana[9])

(1) Objectives:

To develop an integrated intervention package for CoC based on an analysis of the facilitating and hindering factors, and to evaluate the impact of this intervention package on health outcomes among mothers and infants. Formative research was implemented from 2011 to 2013 to design the intervention package, and cRCT was conducted from October 2014 to December 2015. The objectives of cRCT were to: 1) evaluate the impact of the intervention package on the CoC completion rate; 2) evaluate the impact of an improved CoC completion rate on health outcomes among mothers and infants, and 3) examine the feasibility of the planned CoC interventions in rural Ghana.

(2) Target group and sites:

Pregnant women in the reproductive period between the ages of 15 and 49 years from 16 weeks of pregnancy to 6 weeks after giving birth, and their children, in three rural areas of Ghana. 32 county clusters (16 each from intervention and non-intervention groups; a cluster randomized controlled trial) at the 3 sites, covering both public (hospital, health center, CHPS) and private health facilities.

(3) The contents of the intervention:

At all health facilities

- Use of the CoC card
- CoC orientation for health workers

At health facilities with sufficient equipment and workers

- Home visit PNC
- 24-hour retention to heal after delivery

(4) The input to strengthen basic health infrastructure (the equipment provided):

Motorbike, vaccine carrier, stethoscope, weight scale, hospital beds, suction apparatus, blood pressure apparatus and so on.

Figure 1: the process of CoC and the intervention of the research

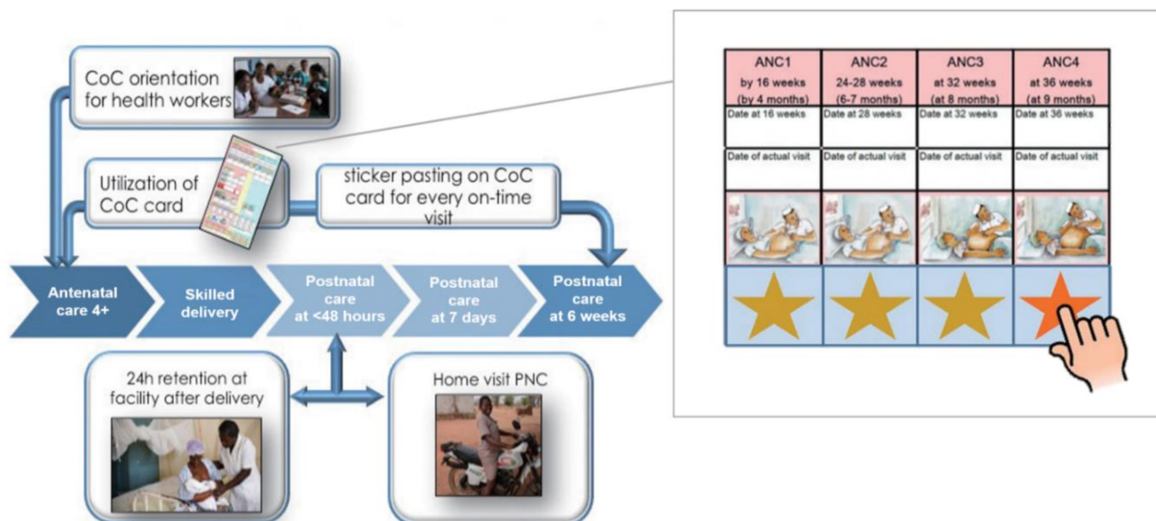

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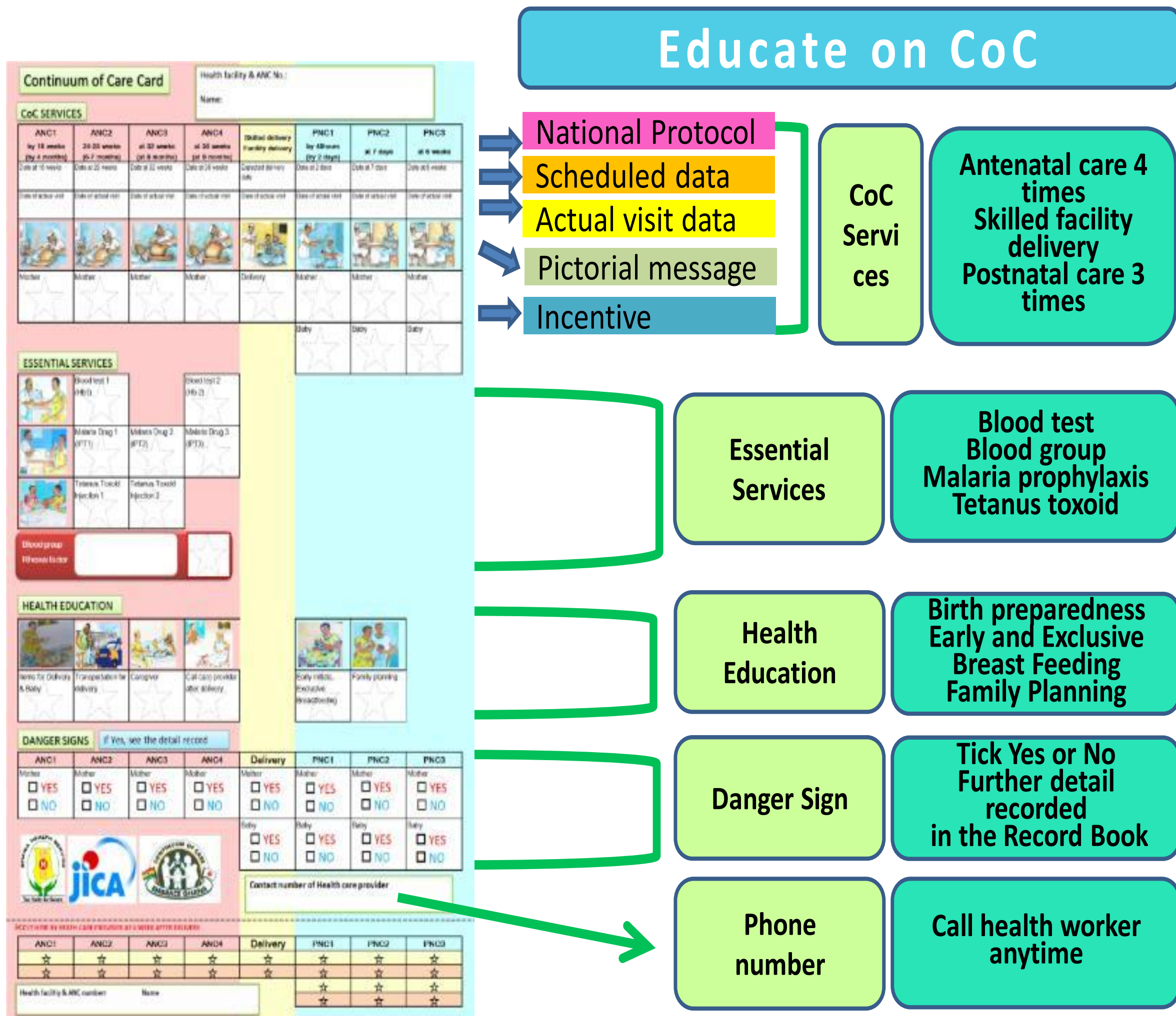
Figure 2: CoC Card



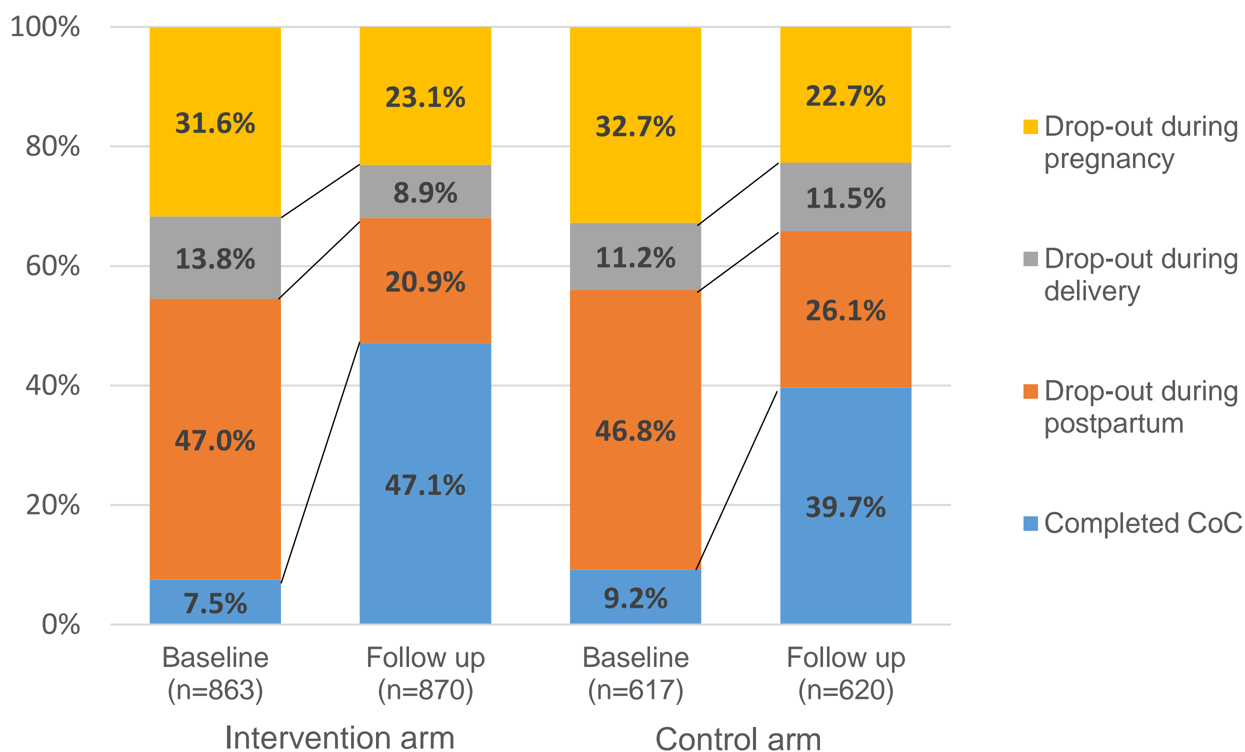
(5) Outcome indicators:

intervention outcome	CoC Completion Rate (at least four antenatal visits; skilled birth attendance; postnatal care within 48 hours, at seven days, and at six weeks), retention rate after delivery for more than 24 hours, PNC rate within 48 hours postpartum, perinatal mortality ratio, and so on.
implementation outcome	acceptability of CoC card utilization, feasibility of improved PNC rates within 48 hours postpartum by mothers' retention at the health facility or by home visits, and so on.

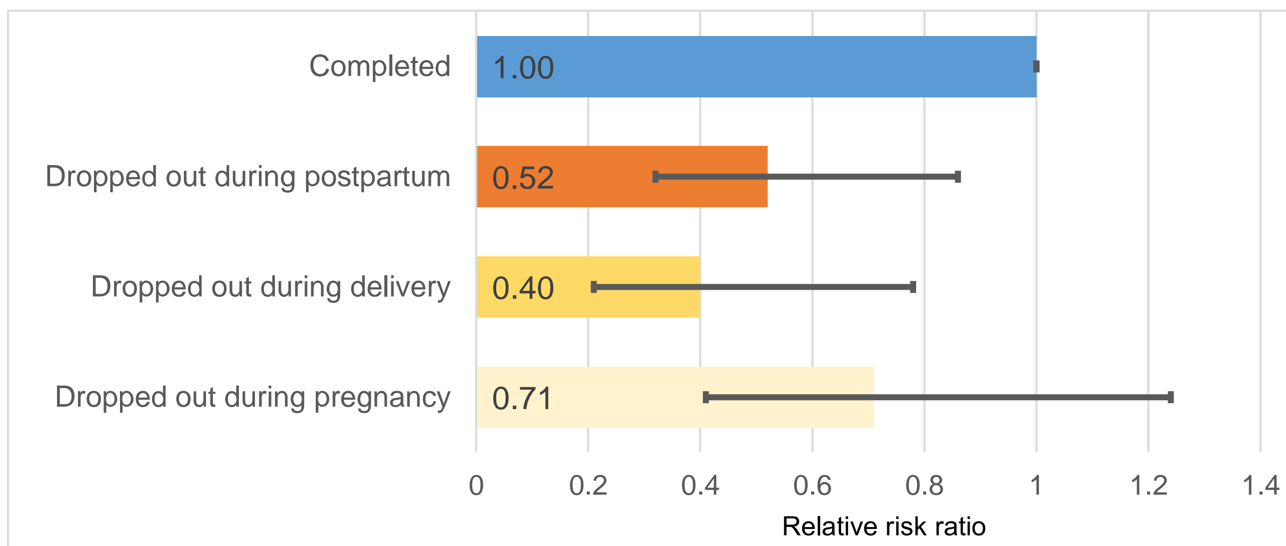
(6) Results:

- Distribution of around 22,000 CoC cards (73% of targeted women received the card);
- Intervention package reduced dropout from CoC (CoC completion rate remarkably increased from 8% to 47% at intervention (Graph 1). Drop-out reduced by 48% during postpartum and by 60% during delivery, a statistically significant result (Graph 2)).

Graph 1. CoC completion rate by intervention status and timing[10]



Graph 2. Impact of intervention on reduced drop-out (n=2,970)



(Source: A. Shibanuma, 2017)

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1 The government of Japan announced the "EMBRACE model" in 2010 in Japan's Global Health Policy 2011-2015. "Embrace" stands for "Ensure Mothers and Babies Regular Access to Care."
https://www.mofa.go.jp/policy/oda/mdg/pdfs/hea_pol_ful_en.pdf

2 Implementation Research has a broad definition, but researches attempt to solve implementation problems in real world setting. Various aspects of implementation factors and process in introduction, improvement or expansion of interventions could be studied, and actors in the real context, such as service providers, beneficiaries, are often involved in.

3 Yeji, F. et al. 2015. Continuum of Care in a Maternal, Newborn and Child Health Program in Ghana: Low Completion Rate and Multiple Obstacle Factors, PlosOne

4 Ghana Embrace International Conference, 2016

5 HC Brown, et al. 2015. Giving women their own case notes to carry during pregnancy. Cochrane Database of Systematic Reviews 2015, Issue 10. Art. No.: CD002856. DOI: 10.1002/14651858.CD002856.pub3

6 WHO recommendations on antenatal care for a positive pregnancy experience, 2016. WHO.

7 WHO recommendations on home-based records for maternal, newborn and child health, 2018, WHO.
http://www.who.int/maternal_child_adolescent/guidelines/development/home-based-records-gdg/en/

8 JICA's Operations in the Health Sector – Present and Future, JICA. 2013.

9 Kikuchi, K. et al. 2015. Ghana's Ensure Mothers and Babies Regular Access to Care (EMBRACE) program: study protocol for a cluster randomized controlled trial, Trial.

10 CoC intervention benefitted women in the control arm. Health facilities implementing interventions might attract more women in the control area. Health workers in control facilities might hear about the importance of CoC.

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Kamiya, Y. et al. 2017. "The gender gap in relation to happiness and preferences in married couples after childbirth: evidence from a field experiment in rural Ghana." Journal of Health Population and Nutrition.

Related publications and information are available at the below websites.

JICA Research Institute, Research Project "EMBRACE Implementation Research in Ghana"
https://www.jica.go.jp/jica-ri/ja/publication/other/20161003_02.html

JICA Technical Brief "Global Promotion of Maternal and Child Health Handbook"
(MCH handbook case reports of various countries including the Ghana CoC card)
http://open_jicareport.jica.go.jp/pdf/1000030133_07.pdf (Volume 7: Ghana)
https://www.jica.go.jp/activities/issues/health/mch_handbook/technical_brief_en.html (Volume 1〜 (in English))
http://libopac.jica.go.jp/images/report/P1000030143.html (Volume 1〜 (in French))

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