



## TECHNICAL BRIEF

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# EVALUATING THE SKILLED CARE INITIATIVE: A COMPREHENSIVE STRATEGY

## IMPROVING MATERNAL HEALTH AND SURVIVAL IN RESOURCE-POOR ENVIRONMENTS: THE SKILLED CARE APPROACH

Maternal mortality has all but been eliminated in the developed world. To speed progress in reducing maternal mortality in low-resource countries, where almost all maternal deaths occur, it is crucial to accelerate the introduction of effective interventions that these countries can implement on a broad scale. Historical, clinical, and epidemiological data all strongly suggest that increasing women's access to **skilled medical care** at childbirth, as well as during pregnancy and in the early postpartum period, is an effective and equitable way to ensure that women can survive childbirth.

Most wealthy and middle-income countries have already achieved universal or nearly universal skilled care coverage. The central aim of the **skilled care approach** is to increase skilled care rates in low-resource countries through a **focussed yet comprehensive strategy of strengthening maternal health service capacity, quality, and utilisation**.

The skilled care approach aims to improve delivery and essential obstetric care services where the need is greatest—in the health centres and dispensaries closest to women—and to motivate women and their families to use these services. It also strengthens obstetric care at the first referral level, usually a district hospital, where the health centres send women with more serious complications.

### FCI'S SKILLED CARE INITIATIVE AT A GLANCE

FCI's **Skilled Care Initiative** puts the skilled care approach to the test. Over five years (2000-2005), and in three countries, the project aims to increase skilled care during childbirth by *at least* 10% in project districts through a three-tiered action plan:

- Developing strong national policies, programmes, and guidelines in support of skilled care;
- Offering high-quality and accessible essential obstetric care services in all levels of health facilities, especially those closest to where women live;
- Encouraging communities to plan for, and use, routine and emergency maternal health services.

The Skilled Care Initiative emphasises prevention, early detection, and management of pregnancy complications. It aims to move basic services as close as possible to the women who need them, and to create an enabling environment for health care providers that includes adequate equipment, supplies, systems, and support. It also emphasises behaviour change communication to increase use of life-saving services, and includes extensive research and evaluation.

## THE EVALUATION CHALLENGE: DEMONSTRATING THE EFFECTIVENESS OF THE SKILLED CARE APPROACH

Historically, safe motherhood programmes have pursued a range of strategies for reducing pregnancy- and childbirth-related deaths (focussing on care by non-professional, traditional

attendants, for example). Relatively few programmes have applied the skilled care approach, and even fewer have been rigorously evaluated. If we accept the premise that increasing skilled care rates will decrease mortality rates in low-resource countries,<sup>1</sup> then the evaluation challenge to the safe motherhood field is to demonstrate that the skilled care approach can in fact raise rates of skilled care even in the most resource-constrained settings.



A new mother with her babies and a skilled provider in Igunga District, Tanzania.

To meet the need for evidence on the skilled care approach, Family Care International developed the Skilled Care Initiative (SCI). This multi-faceted, five-year project, funded by the Bill and Melinda Gates Foundation, applies and tests the skilled care approach in four rural, underserved districts in Burkina Faso, Kenya, and Tanzania, where most women currently *do not* give birth with skilled care.

The Skilled Care Initiative includes a thorough and rigorous evaluation. It employs a pre-test/post-test, quasi-experimental design with purposively selected comparison zones. This technical brief describes the two main aims of

the SCI evaluation design:

- **To measure the availability and quality of skilled care**, using facility-level surveys and routine data collection;
- **To assess changes in service utilisation and related knowledge, attitudes, and care-seeking behaviours** during pregnancy and childbirth through a population-based survey.

The brief also explains the selection and development of the specific indicators used to measure progress towards the project's objectives.

## MEASURING THE AVAILABILITY AND QUALITY OF SKILLED CARE

As noted above, the skilled care approach involves a series of facility- and community-level interventions to strengthen the availability, accessibility, and quality of maternal health services, while educating and mobilising communities to increase their use of services.

### PROCESS INDICATORS FOR ESSENTIAL OBSTETRIC CARE (EOC)

- Proportion of facilities that provide Basic Essential Obstetric Care (BEOC).
- Proportion of facilities that provide Comprehensive Essential Obstetric Care (CEOC).
- Percentage of births in EOC facilities.
- Met need for EOC.
- Caesarean sections as proportion of live births.
- Case fatality rates for direct obstetric complications.

<sup>1</sup> Because increases in skilled care rates have been shown in many analyses to correlate with reductions in maternal death rates, the rate of skilled care is now the most universally used proxy variable for maternal mortality. While most of the analyses showing the reduction in maternal mortality with increasing skilled care rates have been done in middle- or high-income countries, there is evidence that the relationship holds true in low-income countries as well. Supporting evidence includes statistical analyses of the relationship between maternal mortality levels and wealth, education, and skilled attendance rates across countries with differing income levels, as well as data from low-income countries (such as Sri Lanka) that have attained dramatic reductions in maternal mortality levels through increased use of skilled attendance. [See for example Shiffman, J., "Can Poor Countries Surmount High Maternal Mortality?" *Studies in Family Planning* 31:4, pp. 274-287 (December 2000).]

services and pay for them. These steps can be summarised as:

- **awareness** of the importance of skilled care;
- **intention** and **decision-making** to use skilled care; and
- **action** to seek skilled care during pregnancy, childbirth, and the postpartum period.

To gauge the effect of the project's multi-faceted strategies to improve the availability and quality of skilled care and to sensitise and mobilise women and their families to seek services during delivery, FCI's **primary outcome indicator** is the **proportion of pregnant women delivering with the assistance of a skilled provider**. Because this is a population-based indicator, data must be gathered via household surveys; the skilled attendance rate cannot be reliably calculated from facility records.

While the proportion of women delivering with a skilled attendant is FCI's primary indicator of interest, childbirth is a relatively rare event; any given woman may only give birth a few times during her lifetime—and probably not more than once or twice during the project intervention period. Therefore, FCI also developed **behaviour-related process indicators** to measure progress made towards the outcome of interest (i.e. delivery with a skilled attendant). These indicators assess awareness, knowledge, self-efficacy, intentions, and behaviours that relate to delivering with a skilled attendant, which will enable FCI to determine where—along the continuum of steps related to seeking skilled care for delivery—individuals are in the process of changing their maternal care-seeking behaviours.

To test and refine preliminary theories about the steps leading to use of skilled care, FCI conducted an extensive **qualitative study** in each of the intervention areas to carefully explore and analyse community beliefs and practises about pregnancy and delivery care. The results of the qualitative research were used to develop a **Behaviour Change Matrix** that summarised desired behaviours that form a continuum along the way to delivery with assistance from a skilled provider. A portion of the Matrix describing three of the behaviours appears on pages four and five. This Matrix is essentially the “causal model” for how FCI anticipates behaviour to change—in measurable ways—as a result of the intervention.

The Matrix was used to develop SCI's strategic behaviour change efforts, which include community theatre, participatory community meetings, songs, printed materials, and targeted outreach to opinion leaders. (FCI's Behaviour Change Communication strategy is described more fully in the SCI Technical Brief entitled *Behaviour Change and Community Mobilisation for Skilled Care*).

The Behaviour Change Matrix was also used to develop key questions for a population-based **household survey**—the centrepiece of FCI's evaluation strategy. The household survey provides data on a representative sample of households in the intervention and comparison districts. Baseline household surveys were conducted in all three project countries in early 2003. Using a two-stage sampling process, FCI selected



In Burkina Faso, behaviour change activities involve community theatre (above) and outreach to community leaders (below).





Qualitative study focus group in Tanzania.

## SCI INDICATORS FOR BEHAVIOUR CHANGE

To measure shifts in knowledge, intentions, and behaviour, several outcome and process indicators have been developed. Selected indicators include:

- Proportion of all women who are aware of the importance of seeking care from a skilled attendant for normal childbirth, life-threatening obstetric complications, and early postpartum care.
- Proportion of all women who have a positive attitude about taking action during a life-threatening obstetric complication and early postpartum care.
- Proportion of all women who know of a place to seek care from a skilled attendant for normal childbirth.
- Proportion of recently delivered women who conducted all the recommended birth preparations during their recent pregnancy.
- Proportion of currently pregnant women who have a plan to deliver at a health facility for their current pregnancy.
- Proportion of recently delivered women who delivered with a skilled attendant.

new questions to assess providers' knowledge and skills related to maternity care; provider training; staff supervision; and record-keeping and logistics. In developing these new questions, FCI reviewed and adapted instruments from the Population Council, Unicef, MotherCare, and Columbia University/ Prevention of Maternal Mortality Program.

The Skilled Care Assessment tools were translated into French (Burkina Faso) and Kiswahili (Tanzania) and were pre-tested and refined in each country. For the baseline data, a total of 160 facilities in the intervention and comparison districts—representing all types of facilities, from the hospital level down to the dispensary level—were surveyed. Facilities in the intervention districts were

assessed from September to December 2001, and facilities in the comparison districts were surveyed immediately afterwards, from December 2001 through February 2002. In the comparison districts, slightly abbreviated versions of the questionnaire were used, focussing on the essential indicators and omitting detailed questions needed to design project intervention strategies.

A follow-up assessment will be conducted in the intervention and comparison districts at the end of the project. In the interim, however, FCI is collecting data on **service delivery** and the **quality of care** via continuous monitoring of routine statistics.

## MEASURING CHANGES IN SERVICE UTILISATION AND RELATED BEHAVIOURS

In communities where institutional deliveries are not the norm, a number of factors have to be in place before a family will choose to have a pregnant woman deliver in a health care institution: families have to know that pregnancy can be dangerous, be able to recognise danger signs, feel that they can respond to these danger signs, believe that their local health services offer quality care, and have a way to get to

The effect of these interventions on the availability of skilled care is being assessed using a range of internationally-accepted **process indicators**, such as the United Nations process indicators for essential obstetric care (see box on page 2), as well as new **composite indicators** developed by FCI to assess the content and quality of care and the capacity or readiness of the health system to provide skilled care.

Developing such indicators was essential because knowing that a delivery was attended by a health professional does not necessarily guarantee that skilled care was provided. If the attendant lacked essential clinical skills or was working in a facility or an environment that did not have adequate supplies, equipment, and infrastructure, then he or she may not have been able to provide critical, life-saving care.

The composite indicators developed by FCI are being used to evaluate the content of specific elements of maternity care and assess how “skilled” it is, and to assess the capacity of health facilities to prevent, detect, and manage obstetric complications. Selected indicators include:

- **The availability of good quality antenatal care:** The proportion of facilities providing antenatal care that is focussed on diagnosing and treating pregnancy complications and encouraging individual and household preparations for delivery.
- **The availability of good quality routine delivery care:** The proportion of facilities where the partograph is used to monitor labour, and providers have the knowledge, equipment, and skills for active management of the third stage of labour and performing episiotomies and laceration repair when necessary.
- **The availability of maternal postpartum care:** The proportion of facilities where staff have the knowledge and skills to provide routine postpartum care check-ups and counselling to new mothers.
- **The availability of maternity care providers who can perform essential obstetric care functions:** The proportion of nurse/midwives who have performed key EOC signal functions within the past three months.

FCI is collecting pre- and post-intervention data on these and other essential indicators at health facilities in the project districts through a **facility survey**. The World Health Organization’s Safe Motherhood Needs Assessment methodology was used as the basis for FCI’s data collection instruments. However, drawing on extensive experience conducting similar assessments in various contexts, FCI modified the WHO instruments to focus on skilled care and developed

## THE SCI FACILITY-SURVEY INSTRUMENTS INCLUDE:

- Guides for interviewing district officials and key informants to gather information about the general demographic and social situation in each district.
- Guides for interviewing district health officials to learn about management of maternal health services.
- Facility management survey form to gather information on staffing, caseload, infrastructure, supplies, and equipment.
- Facility record review form to assess the number of births and pregnancy complications managed, maternal and infant outcomes, and provision of care.
- Antenatal record review form.
- Partograph review form.
- Guides for interviewing skilled attendants and others providing delivery care (midwives, maternity nurses, etc.) to learn about training, qualifications, supervision, knowledge, and stated practises.
- Client exit interview guides, to gather information from postpartum and antenatal clients about the content of care received.



A happy recipient of skilled care.

Excerpt From the Skilled Care Initiative Stages of Behaviour Change Matrix

STAGE ALONG THE BEHAVIOUR CHANGE CONTINUUM	I. PRE-CONTEMPLATION/CONTEMPLATION		II. DECISION/D
<b>POSITION:</b>	<b>A. NEUTRAL</b> (Is not aware of the risks women face during childbirth or the need for skilled care at delivery)	<b>B. UNCOMMITTED</b> (Aware of need for skilled care at delivery for women in general but has not made a decision for herself)	<b>A. RESISTOR</b> (Feels personally at risk for complications, but does not believe it is the best choice for her)
<b>DESIRED BEHAVIOURS:</b>  <b>1. Seeking skilled care for normal delivery.</b>  <b>2. Seeking postpartum care soon after delivery (within two weeks).</b>  <b>3. Making plans for obstetric emergencies.</b>	<ul style="list-style-type: none"> <li>• Not aware that every woman can develop life-threatening obstetric complications.</li> <li>• Not aware that routine use of skilled care for every delivery can make childbirth safer.</li> <li>• Not aware that routine use of skilled care after every delivery can make the early postpartum period safer.</li> <li>• Not aware of the need to plan for skilled care even if they intend to deliver at home or with TBA.</li> <li>• Not aware that most obstetric complications happen during the early postpartum period.</li> </ul>	<ul style="list-style-type: none"> <li>• Aware that every woman can develop life-threatening obstetric complications.</li> <li>• Aware that routine use of skilled attendants for every delivery can make childbirth safer.</li> <li>• Aware that routine use of skilled care after every delivery can make the early postpartum period safer.</li> <li>• Aware of the need to plan for skilled care even if they intend to deliver at home or with TBA.</li> <li>• Aware that most obstetric complications happen during the early postpartum period.</li> </ul>	<ul style="list-style-type: none"> <li>• Strongly prefers TBA care/home environment during delivery.</li> <li>• Believes that skilled care is not a feasible option (money, transport, family support).</li> <li>• Does not believe that skilled care during the early postpartum period is feasible.</li> <li>• Does not want to be examined/attended by male healthcare workers.</li> <li>• Does not believe that women should be seen/leave home during late pregnancy.</li> <li>• Does not believe that women should be seen/leave home during early postpartum period.</li> <li>• Feels negatively about planning because of basic lack of information (cost, transport, location, family support).</li> <li>• Feels that birth preparedness is a woman's matter.</li> <li>• Feels that fate/God will decide whether a woman will survive a complication.</li> </ul>

<sup>2</sup>Community solutions are interventions for ensuring that women reach a skilled attendant; they include interventions such as loan funds and community transport.

TERMINATION	III. ACTION	
B. INTENDER (Intends to seek skilled care, but has not yet made plans)	A. PLANNER (Makes plans before the onset of labour to seek skilled care)	B. DOER (Seeks skilled care during childbirth)
<ul style="list-style-type: none"> <li>• Willing to deliver at health facility.</li> <li>• Believes that skilled care is a feasible option for her.</li> <li>• Believes that skilled care during the early postpartum period is feasible for her.</li> <li>• Willing to be examined/attended by male healthcare workers.</li> <li>• Not concerned about women being seen/leaving home in late pregnancy.</li> <li>• Not concerned about women being seen/leaving home during early postpartum period.</li> <li>• Feels positively about birth preparedness.</li> <li>• Feels that birth preparedness is a family responsibility.</li> <li>• Understands that the woman/family must act in order to save the woman's life.</li> </ul>	<ul style="list-style-type: none"> <li>• Knows which local health facilities offer skilled care.</li> <li>• Knows cost for a normal delivery at a health facility.</li> <li>• Knows how much to save for skilled care during obstetric emergency.</li> <li>• Knows cost for early postpartum care at a health facility.</li> <li>• Knows possible modes of transport to health facility.</li> <li>• Knows to bring a potential blood donor to health facility for all deliveries and obstetric emergencies.</li> <li>• Discusses plans for skilled care with family (i.e. location, cost, transport, blood donor, time).</li> </ul>	<ul style="list-style-type: none"> <li>• Decides which facility to use for skilled care.</li> <li>• Saves money to cover costs at a health facility for skilled care during delivery.</li> <li>• Saves money to cover costs at a health facility in case of an obstetric emergency.</li> <li>• Saves money to cover costs of routine postpartum care at a health facility.</li> <li>• Has plans for transport to a health facility.</li> <li>• Arranges for someone to accompany her to a health facility as blood donor during delivery.</li> <li>• Agrees with family on use of skilled care during delivery and early postpartum period.</li> <li>• Gets approval from family decision-maker to seek skilled care even if he/she is not there at the onset of labour.</li> </ul> <ul style="list-style-type: none"> <li>• Leaves home and moves towards a facility during normal labour.</li> <li>• Leaves home and moves towards a facility during an obstetric emergency.</li> <li>• Attends early postpartum care at health facility.</li> <li>• Uses funds saved to cover costs of delivery and emergency obstetric care at a health facility.</li> <li>• Uses funds saved in advance to cover costs of early postpartum care at a health facility.</li> <li>• Accompanied to health facility by potential blood donor for normal deliveries and life-threatening obstetric complications.</li> <li>• Uses community solutions.<sup>2</sup></li> </ul>

census enumeration areas (EA) in each intervention and comparison district, and randomly sampled 25 households within each EA. A total of 18,000 households were visited in the three countries.

The household survey measures the primary outcome indicator, **rate of delivery with a skilled attendant**. Additionally, it gathers information on factors that may relate to utilisation of skilled care, such as wealth, distance from health care facilities, and education levels. Demographic and social data are gathered to ensure comparability of the intervention and control districts. Because a number of people generally



A nurse in Igunga District, Tanzania.

participate in the decision to seek care during pregnancy and childbirth, interviews were conducted with women of reproductive age and male co-resident partners (husbands). The Women's Questionnaire includes specific sub-sets of questions for women who are *currently pregnant*, who have *delivered in the past 24 months*, and who experienced *serious obstetric complications in the past 24 months*.

As with the facility-level assessment, a follow-up survey will be conducted at the end of the project to measure changes in the primary outcome indicator of interest, as well as to gauge shifts in people's attitudes and intentions.