



## Testing Approaches for Increasing Skilled Care During Childbirth: Key Findings from Ouargaye, Burkina Faso

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## I. INTRODUCTION

Each year, over 500,000 women die from the complications of pregnancy and childbirth, almost all of them in the developing world. This could be largely prevented if all women received high-quality care during pregnancy and childbirth. More than 70% of maternal deaths are attributable to five major complications,\* and 77% occur during or shortly after childbirth (within 24 hours)—highlighting the critical need for good quality care during this period.

Increasing rates of skilled care during childbirth is widely recognised as a priority strategy for reducing maternal mortality, and rates of skilled attendance at childbirth are being used as the target indicator to measure progress toward the 5th Millennium Development Goal of improving maternal health. Globally, however, there is little evidence-based guidance available on how to make skilled care available and accessible in low-resource settings, and in many countries, little or no progress has been made in increasing skilled attendance rates during childbirth. For example, in Burkina Faso, the percent of births attended by skilled attendants† in health facilities is estimated at 39% in 2003. It is important to note that in Burkina Faso, auxiliary midwives are integrated in the category of skilled attendant, according to the Ministry of Health classification‡

### ***The Skilled Care Initiative***

In 2001, the Ministry of Health and Family Care International launched the Skilled Care Initiative in Ouargaye health district, Koulpelogo Province, Burkina Faso.§ The Skilled Care Initiative aimed to test and evaluate strategies to improve maternal health outcomes. It was specifically designed to:

- **Improve the availability and quality of skilled maternity care through health systems interventions.** These interventions included upgrading the health infrastructure, including surgical facilities, where needed; addressing equipment gaps; training providers in clinical and interpersonal skills in routine and emergency obstetric care; strengthening referral systems and improving health management systems.
- **Increase utilisation of maternity services through facility- and community-level behaviour change interventions.** These interventions included antenatal counselling on birth preparedness and a community-level behaviour change communication (BCC) campaign on the benefits of skilled maternity care before, during and after childbirth.

As shown in Box 1, a range of strategies were introduced in Ouargaye district to improve the availability, quality, and utilisation of maternity care.

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\* The five complications are severe bleeding/haemorrhage, infection/sepsis, unsafe abortion, eclampsia, and obstructed labour.

† According to the World Health Organization, skilled attendants include trained midwives, nurse/midwives or doctors who have completed set course of study and are registered or legally licensed to practise. This definition does not include traditional birth attendants.

‡ Demographic Health Surveys, 1989, 1998 and 2003.

§ The SCI in Ouargaye focused in particular on 14 health centres and the district hospital, while the district's remaining six health centres received financial support from other donors. The SCI community-level behaviour change interventions aimed to cover the entire district. The evaluation findings pertain the full district.

### Box 1. The Skilled Care Initiative at a Glance

Health systems interventions in Ouargaye district included:

- Addressing personnel shortages by supporting temporary posting of two surgical aids until the MOH could permanently fill the posts.
- Training 37 health workers in essential obstetric care, 60 health workers in counselling and interpersonal communication skills, and 80 in sound infection prevention practices. In addition district hospital staff were trained in postabortion care, including manual vacuum aspiration.
- Strengthening the infrastructure of health facilities, including repairing dilapidated building structures and upgrading labour and delivery rooms and installing solar panels in health centres and staff residence quarters.
- Addressing gaps in essential obstetric care equipment, such as blood pressure gauges, delivery beds, delivery couches, sterilising equipment, and such other items.
- Providing two-way radios at all supported facilities to facilitate emergency referral of patients..

Community-level behaviour change campaign activities emphasised the importance of planning for delivery, and the importance of skilled maternity care during pregnancy, childbirth, and the postpartum period. These activities included:

- Participatory drama performances and health talks at marketplaces, community mobilisation activities, and special health days at local health facilities.
- Establishing community outreach agents to spread the word about skilled care and educate their communities on healthy behaviours.

## II. Evaluation Design and Methods

A rigorous methodology was used to evaluate the availability and quality of skilled care in the intervention districts, and changes in use of skilled care over time. The pre-test, post-test, quasi-experimental design, with purposively selected comparison zone, included health facility survey and household surveys. Diapaga district, Tapoa Province, was chosen as comparison district.

The specific objectives of the **health facility assessments** were to:

- Assess the maternal health services at all levels of the health care system and identify gaps in these services
- Guide the design of project interventions by identifying strategies for improving maternal health services and assist in prioritising interventions
- Evaluate the impact of SCI project interventions on maternal health services at health care facilities by comparing baseline and endline data.

Developed from the World Health Organization's Safe Motherhood Needs Assessment methodology, the health facility survey instruments included: interviews with district health management teams, interviews with facility managers, interviews with midwifery personnel, exit interviews with antenatal and postpartum clients, structured observation, and reviews of facility records.

The baseline and endline sample of health facilities included 20 public and mission facilities in Ouargaye district and 19 in Diapaga. All facilities were providing maternity care.

The specific objectives of the **household surveys** were to:

- Gather data on demographic, socioeconomic, and other variables that may influence the use of skilled care
- Assess knowledge, attitudes, and behaviours related to birth preparedness and care-seeking during pregnancy, delivery, and the early postpartum period
- Measure the use of skilled care during normal and complicated deliveries and the early postpartum period by the district population
- Evaluate the impact of SCI project interventions regarding these indicators

The survey instruments included a Household Questionnaire (with the head or other adult member of household), a Woman’s Questionnaire, and a Husband’s Questionnaire. Most of the questions were based on those used in the international Demographic and Health Surveys (DHS). Questionnaires used in other safe motherhood surveys were also reviewed and relevant questions were then adapted for the survey. Women were asked about *all* of their births and stillbirths in the two years prior to the survey.\*\* This was done to ensure that women and their births would be represented in proportion to the number of births the women have had. Moreover, this type of sample requires a smaller sample of women than a sample based on the most recent birth only.

More than 2,900 households were surveyed in each district during the baseline and endline (See Table 1), and within each household, all women of reproductive age and their co-resident husbands were interviewed. In total, some 1,552 women in Ouargaye and 1,983 women in Diapaga with recent pregnancies (i.e. had had a live or still birth within the previous two years) were interviewed at endline. As very few surveys have collected such extensive data on women’s care-seeking behaviour before, during and after childbirth, this research provides an extraordinary opportunity to understand the reasons why women seek skilled care, and what can be done to ensure that skilled care is available and accessible for all women.

**Table 1. Household survey samples**

	Ouargaye		Diapaga	
	Baseline	Endline	Baseline	Endline
Households Surveyed	2814	3837	2956	3926
Number of women interviewed who were pregnant within the last 2 years	1175	1552	1326	1983

### **Data Analysis**

Data were analysed using SPSS 14.0 for Windows (Chicago, Ill, SPSS, Inc). Functional indices were developed to assess changes in the status of essential aspects of quality care related to antenatal care, normal delivery care, complicated delivery care, and postpartum care. Drawing on the results of these functional indices, composite indices were developed to give a complete picture of the overall capacity to provide normal delivery care and complicated delivery care. Similar composite indices were developed to measure respondents’ exposure to and awareness of the intervention. Statistical analyses were done using the chi-square test and linear regression models, whose dependent variable was “delivery at a health care facility.”

\*\* Since there is evidence that early pregnancy losses are underreported in surveys these were excluded.

### III. Findings

#### A. Antenatal Care

Although most pregnancy- and delivery-related complications cannot be predicted, high-quality antenatal care (ANC) during pregnancy is recognised as an important opportunity for promoting health and education, instituting prophylactic measures for disease prevention, managing existing diseases and other health conditions, and detecting and managing maternal health complications. The WHO recommends that all pregnant women should have a minimum of four antenatal visits.

To improve the quality and availability of ANC, project interventions focused on updating the knowledge and skills of maternal health providers in 14 of the 20 facilities in Ouargaye through Emergency Obstetric Care (EMOC) training, which covers antenatal care and individualized birth preparedness counselling, as well as addressing critical gaps in equipment. In addition, flipcharts, posters, and client education booklets were developed and distributed to all health facilities in Ouargaye to aid providers in providing essential information and counselling during antenatal consultations.

#### *Capacity to Provide and Provision of ANC Services*

The vast majority of health facilities in both districts provided ANC services at baseline and all were providing them at endline. Overall, the facility survey showed that there were significant improvements in Ouargaye in terms of health providers' ability to spontaneously mention key diagnostic and health promotive ANC functions. The providers recalled 6 key diagnostic services at endline in Ouargaye when they recalled only 4.3 at baseline. There was no change in Diapaga.

In terms of essential resources for the provision of quality antenatal care, in both districts, there is an improvement in terms of essential equipment and consumable supplies for ANC. In Ouargaye, the average mean of equipment and supplies increased from 3 to 3.6 out of 5, while in Diapaga it increased from 3.3 to 3.9.

#### *Utilization of ANC Services*

The household survey showed a significant increase in the use of antenatal care during pregnancy in Ouargaye; the proportion of women with at least one ANC visit during pregnancy increased from 80% to 94%. In Diapaga district, only a small increase from 74% to 78% was observed. Facility records show that the proportion of women with more than two antenatal care visits during pregnancy in Ouargaye almost doubled.

Both the household survey and the facility survey confirm an improvement in the content of women's antenatal visits, which was already quite good at baseline. At endline, women in Ouargaye received an average of 6.8 out of 8 essential diagnostic, counselling and preventive ANC functions, compared to 6.4 at baseline. In Diapaga district there was no change and women continued to receive 6.1 functions. The largest improvement in preventive ANC functions was in the provision of malaria prophylaxis.

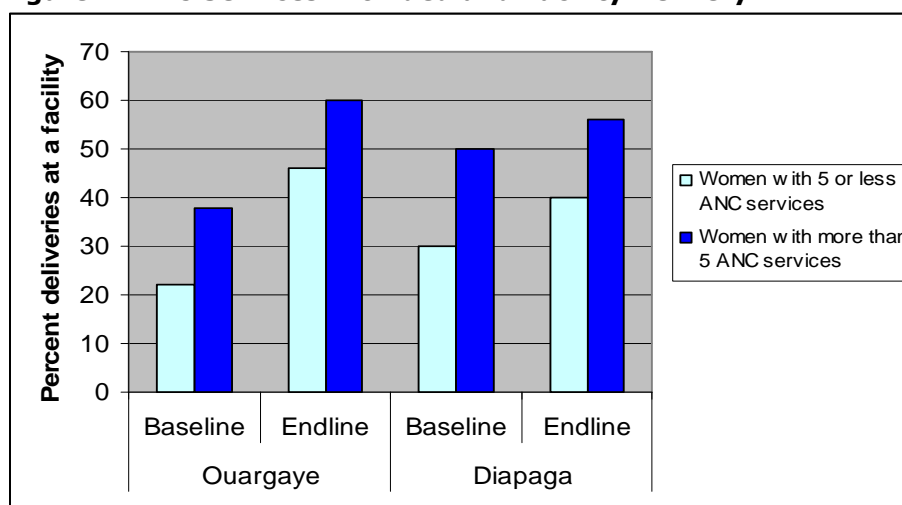
In addition, improvements in ANC counselling were observed. At baseline only 26% of women in Ouargaye were counselled on danger signs of problems during pregnancy and childbirth. This increased to 40% at endline. Meanwhile, in Diapaga the percentage dropped from 28% to 14%. **While the increase in Ouargaye is encouraging, it should be noted that overall, the majority of women are not receiving such counselling, and that opportunities to inform antenatal clients about danger signs during pregnancy and childbirth are being missed.**

Table 2.

	Ouargaye		Diapaga	
	Baseline	Endline	Baseline	Endline
	<b>N=945</b>	<b>N=1462</b>	<b>N=975</b>	<b>N=1548</b>
Total percentage of women who delivered at a health facility	<b>26</b>	<b>57</b>	<b>29</b>	<b>36</b>
<i>Percentage of women who delivered at a health facility and were:</i>				
Advised where to deliver	41	61	51	48
Given information about the danger signs	38	64	50	53

The endline household survey found that women who were advised on where to deliver were also more likely to delivery at a health facility, underscoring the value of birth preparedness counselling. To explore the association between the content of ANC and women’s care-seeking during childbirth, an index was created to quantify the number of antenatal services women received and to explore the association between the content of ANC and care-seeking during delivery. Women were grouped according to whether they had received five or less services or more than 5 services out of eight diagnostic and health promotion antenatal functions. **Analysis of the association between high and low ANC content and care-seeking during delivery showed that women who received more services at ANC were more likely to choose to deliver at a facility** (Figure 1). **At endline in Ouargaye, women who received more services were 30% more likely to deliver at a facility.**

Figure 1. ANC Services Provided and Facility Delivery



## B. Normal Delivery Care

The vast majority of maternal deaths occur during delivery and in the immediate postpartum period. The WHO recommends that health facility staff have the appropriate skills, tools, and supplies to provide the appropriate of routine care to all women during labour and delivery, including:

- Diagnosis of labour
- Monitoring labour progress, and maternal and foetal well-being with the partograph
- Providing supportive care and pain relief

- Detection of problems and complications (e.g. malpresentation, prolonged or obstructed labour, hypertension, bleeding and infection)
- Clean, atraumatic delivery and immediate care of the newborn, including initiation of breastfeeding
- Newborn resuscitation
- Active management of the third stage of labour (AMSTL).

Improving normal delivery care and encouraging women to deliver with a skilled attendant were key elements of the SCI intervention package. Maternity care providers were trained in EMOC at all levels of the health system in 14 of the 20 facilities of Ouargaye. These trainings had a focus on routine maternity care, including interpersonal and compassionate dimensions of care, as well as complications management. In addition to the training interventions, infrastructural support (solar panels, water tanks, etc.) and a range of obstetric equipment (delivery kits, delivery couches, etc.) was provided to the 14 health facilities to address gaps identified through the baseline assessment.

### ***Capacity to Provide and Provision of Normal Delivery Care Services***

At baseline and at endline all facilities in both districts were routinely providing delivery care and had provided this care within the month prior to the survey.

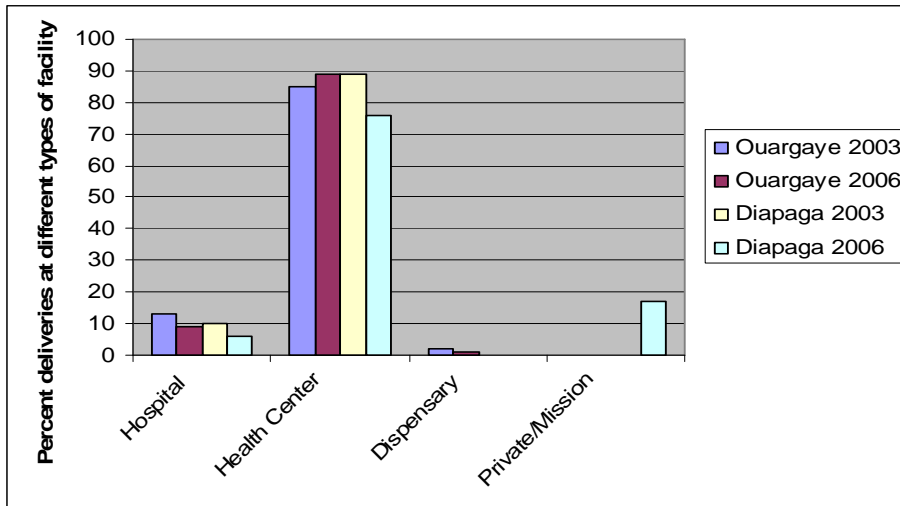
To appraise the overall capacity of health facility to provide quality and skilled maternity care, a composite Facility Readiness Index was developed from functional indexes for infrastructure, equipment and supplies, provider training, and provider knowledge and skills. There was a significant increase in index scores in both districts from baseline to endline. In Ouargaye, the mean Facility Readiness Index score increased significantly from a low 0.5 at baseline to 2.7 at endline, and in Diapaga, the mean score increased from 1.2 to 3.1. In Ouargaye, improvements were especially notable in the health centres, where the index increased from 0.4 to 2.7. This is encouraging because these lower level facilities handle most of the normal deliveries. Improvements in provider skills, equipment and facility infrastructure accounted for most of the gain.

### ***Utilization of Normal Delivery Care Services***

The household survey showed a dramatic increase in the proportion of live and still births that took place in health facilities in Ouargaye. **The percentage of births in health facilities increased from 25% at baseline to 57% at endline.** In Diapaga district, the increase in the proportion of births at health facilities was much smaller, from 32% to 36%. Similarly, there was an increase in delivery by skilled attendants in Ouargaye (from 25% to 56%), at the expense of TBAs (from 39% to 13%). In Ouargaye, there were marginal increases in delivery by a doctor and a greater increase in delivery by nurse/midwife or auxiliary midwives.

In Ouargaye district, the vast majority of institutional deliveries (89%) took place in health centres, and little change was observed over time (see Figure 2).

**Figure 3. Distribution of Births Across the Health System in Ouargaye**



Interestingly, the readiness or capacity of a health facility did not appear to strongly influence women’s use of that site for delivery care. Women who lived closed to a site with a “high” Facility Readiness Index score were not more likely to deliver in that facility than women living closed to a site with a low Readiness Index score.

### C. Complicated Delivery Care

Given that most life-threatening maternal health complications are sudden in onset and difficult to predict, high-quality essential obstetric care (EOC) services must be provided as close as possible to the communities where women live. The WHO recommends that elements of EOC can be safely provided at the each level of the health system as follows:

- **Dispensary level:** the provision of obstetric first aid, such as the administration of antibiotics and anticonvulsants; the injection of ergometrine and other oxytocics; and the administration of IV fluids.
- **Health centre level:** the provision of basic essential obstetric care, including the administration of oxytocics and antibiotics; assisted normal delivery; manual removal of placenta and vacuum aspiration to treat complications of incomplete abortion.
- **Hospital level:** the provision of comprehensive essential obstetric care, including blood transfusion and Caesarean deliveries.

These services must be complemented by well-functioning communication and transport linkages to ensure that referrals to appropriate-level facilities can be made promptly.

Project interventions to improve the availability of EOC were similar to those described earlier for normal delivery care—i.e. strengthening provider skills, addressing gaps in essential equipment, and improving the referral system through the provision of an ambulance stationed at the district hospital and radio calls to the health centres and the ambulance.

### Capacity to Provide and Provision of Complicated Delivery Care Services

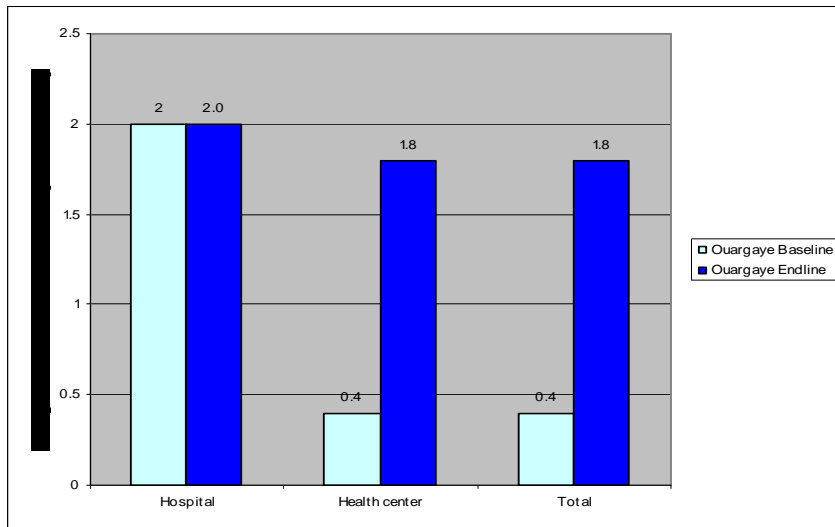
A composite EOC Readiness Index was developed from the facility survey to appraise the capacity of each facility to handle obstetric complications. The mean score for all types of facilities increased from baseline to endline, with larger improvements being observed in particular in the health centres in Ouargaye, where the mean EOC Readiness Index score increased from 0.6 at baseline to 2.2 at endline ( $p < .001$ ). Breaking down the index by its

elements, it is noted that the provider skills increased from 2.7 to 3.2, the equipments from 0.6 to 1.6, and the drugs and supplies from 1.2 to 3.0 (Figure 3).

Despite significant improvements, the EOC Readiness status of the district hospital did not appear to have improved at endline. The facility survey did not find improvements in availability and quality of equipment for EOC, and a slight improvement in provider skills for managing obstetric complications, from 4 to 4.3. The lack of improvement of the readiness of the district hospital is a serious concern given that the district hospital in particular is the site where obstetric complications should be handled for the whole district.

The area where the district hospital did improve the most was in the availability of essential drugs and supplies for complicated delivery care, where the availability index increased from 1.2 to 3.0. Overall, as noted, the largest improvement was in the health centres, particularly in equipment and supplies, and in capacity to refer patients. The referral capacity improved in particular due to greater availability of radios. At endline, 85% of facilities had a means of communication, compared to 10% at baseline. In addition, 50% of facilities in Ouargaye had an ambulance or other emergency vehicle. While not all facilities had their own vehicle, they had a means of communication to call the ambulance from the district hospital to evacuate a patient, which is a significant improvement over the baseline situation.

**Figure 3. Changes in Facility Readiness Index for Complicated Delivery (EOC Index) in Ouargaye**



There were notable changes in the proportion of facilities that reported having provided basic essential obstetric care (BEOC) services during the three-month period prior to the baseline and endline facility surveys. Administration of oxytocin and sedatives were the two main areas of improvement: oxytocin was not available at all at baseline and at endline was available at 80% of the facilities, while sedatives were available at 74% of the facilities compared to only 50% at baseline. There were no significant improvements in the use of manual removal of placenta and assisted vaginal delivery, but it should be noted that these procedures are only allowed at from the district hospital and up. As a result of the SCI advocacy efforts the Ouargaye district hospital at endline did have a fully equipped operating theatre. **However, despite the significant upgrades to the district hospital**

still referred the majority of the obstetric complications to the regional hospital at an hour's drive by car.

#### ***Utilization of Complicated Delivery Care Services***

The household survey also found a change in care-seeking for complications among all women in Ouargaye, as women were more likely to deliver at a facility when they experienced a complication (65%) compared to other women (57%). **Another notable findings was a significant increase in the percentage of poor women with complications delivering at a health facility from 15% to 66%.**

#### **D. Postpartum Care**

The period immediately following delivery is an important time for detecting and managing life-threatening obstetric complications. Postpartum care should therefore include the identification and management of maternal health problems and health promotion, as well as immunisations for newborns. In addition, postpartum care should include counselling, information and services for family planning.

The project interventions consisted primarily of training interventions to heighten maternity care providers' awareness of the importance of **early** postpartum care for new mothers (as opposed to the traditional 6-week visit that is mainly focused on the well-being and immunisations of the infant). EMOC trainings included a module on postpartum care.

In addition, the project produced a flipchart on maternal health care that included information on self-care during the postpartum period and the importance of a postpartum check-up for both mothers and newborns.

#### ***Capacity to Provide and Provision of Postpartum Care Services***

The provision of maternal postpartum care requires only basic equipment and supplies, such as a private space for client counselling and examination, gloves, speculum, and consumables, such as contraceptive methods and client education materials. The availability of essential equipment generally improved in Ouargaye, and to a lesser extent in Diapaga. The availability of oral contraceptives and condoms increased in both districts. The availability of health education materials, such as information on postpartum care and family planning was very low at baseline in both districts and increased significantly at endline, especially in Ouargaye, as this was an area of attention for the project.

Large increases were observed in the proportion of health facilities that were routinely providing postpartum care services in Ouargaye, including check-ups for mothers and newborns, as well as breastfeeding support, and family planning services. Only 42% of facilities were providing postpartum care at baseline, while 95% did so at endline, including the district hospital. In addition, there was an improvement in the number of services that women received during post-partum care consultations. The average number of services women received increased from 5 to 5.4 in Ouargaye ( $p < .001$ ) and from 4.5 to 4.9 in Diapaga ( $p = .06$ )

#### ***Utilisation of Postpartum Services***

The endline household survey showed a marked increase in the proportion of babies that had a postpartum check-up from a health professional; in Ouargaye it increased from 63% to 98% of babies and in Diapaga from 50% to 95%.

**In addition, there were marked increases in the numbers of women who received a post-partum check-up themselves, in particular in Ouargaye, where at baseline only 40% of women went for a postpartum check-up and at endline 57%. In Diapaga numbers stayed lower but there still was an increase from 16% to 22%.**

## **E. Characteristics associated with Skilled Care-Seeking during Childbirth**

### ***Exposure to the SC Intervention***

As described earlier, the SCI intervention package included both facility- and community-level interventions to promote the use of skilled maternity care during childbirth. At the health facility level, these interventions were primarily comprised of strengthened birth preparedness counselling during antenatal consultations.

At the community-level, a behaviour change campaign was carried out, targeting women, men, female elders and community leaders with information on the benefits of skilled care during childbirth, as well as the importance of antenatal care, maternal postpartum care, and preparing for childbirth through household planning and discussion and setting aside funds for delivery. Community-level interventions including community outreach agents, and a theatre campaign, also aimed to heighten awareness about the risks associated with pregnancy and childbirth, and improve individual, household, and community-level recognition of and responsiveness to obstetric complications.

A series of indexes were developed to measure exposure to health facility and community-level behaviour change interventions aimed at promoting birth preparedness, heightening awareness about maternal health and signs of complications (see Box 2). Separate indexes were created to distinguish between exposure to birth preparedness messages during health consultations, such as antenatal visits, and exposure to such messages through community-level events, such as community-level meetings, print materials, drama, and other traditional media. The indexes can be regarded as a series of indicators of exposure to information about birth preparedness and safe motherhood either through the antenatal setting or through other community-level sources; adoption of positive attitudes toward birth preparedness; and ultimately, planning for and using skilled maternity care during delivery.

Analysis showed improvement in Ouargaye in all five indexes that measured exposure to facility- and community-level interventions to promote skilled care during childbirth. The Birth Preparedness Counselling Index showed that there were significant improvements in the content of antenatal counselling on birth preparedness, with more women reporting that they had heard about birth preparedness from a health professional, were advised where to deliver during antenatal care visits and were informed about danger signs and where to go for complications. There was an impressive increase in Ouargaye, where at baseline women received little counselling on these topics, with a mean Birth Preparedness Counselling Index of 0.99 which improved to 1.71 at endline ( $p < 0.001$ ). In Diapaga, the index decreased from 0.9 to 0.74 between baseline to endline.

In Ouargaye, where the SCI community-level behaviour change campaign was carried out, there was an increase in the Campaign Exposure Index, which measured exposure to messages about birth preparedness in the community setting, going up from 0.92 to 1.47 ( $p < .001$ ). Surprisingly, in Diapaga, where there was no specific community behaviour change campaign other than the regular Ministry of Health information, education and communication (IEC) activities and community radio, the index also went up slightly from 1.37 to 1.61.

Both facility-based counselling and the community-level campaign activities encouraged household planning and discussion about childbirth. The Planning and Discussion Index showed similar and significant increases in both Ouargaye and Diapaga. Finally in both districts and there was a small, but significant, increase in Safe Motherhood Awareness

Index scores, which measures knowledge and awareness on safe motherhood, including danger signs for complications (see box 2).

**Box 2: Indexes to Evaluate Women’s Exposure and Response to Skilled Care Promotion Interventions**

**Birth preparedness counselling index.**

- Told about danger signs
- Advised where to go if had symptoms of complications
- Given advice on where to deliver
- Source of birth preparedness information was a health professional

**Birth preparedness community campaign exposure index.**

- Had heard of birth preparedness (a key BCC message in the project)
- Agreed women should plan where to deliver
- Source of information was from printed material
- Source of information was from community /group events

**Safe Motherhood Awareness.**

- Agreed that a woman should plan ahead where to deliver and how to get there
- Agreed that a woman should plan what to do in event of serious complication
- Could name 3 or more danger signs during pregnancy, childbirth, and postpartum
- Agreed that any of the danger signs can be fatal

**Husband Involvement Index**

- Woman recalled discussing with husband where to deliver
- Woman reported husband made the decision where to deliver
- Husband said he discussed with his wife where she would deliver
- Husband reported discussing with his wife how to pay for the delivery

**Planning and Discussion**

- Discussed with her husband or family where she would deliver the baby
- Discussed with her husband or family how to pay for the delivery
- If the woman or anyone in her family put aside money to pay for the delivery

***Effect of the Intervention on Care-Seeking***

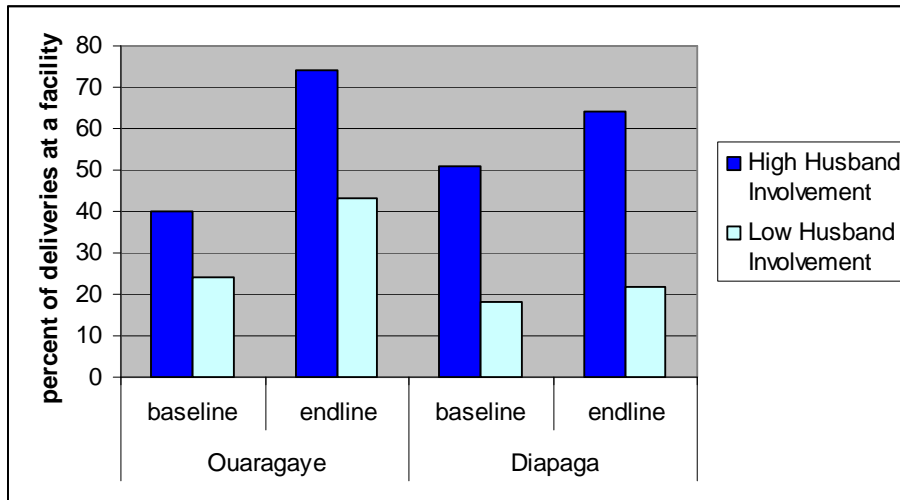
To explore whether or not increased exposure to the SCI demand-related interventions were associated with women’s skilled care-seeking decisions, each birth/stillbirth was analysed according to whether the woman had high or low scores on each of the Intervention Exposure indexes. As a general pattern, higher scores on the indexes correlated with an increased likelihood of seeking skilled care during childbirth.

Receiving counselling on birth preparedness during antenatal care appeared to strongly influence women’s use of skilled care during delivery. In Ouargaye, 64% of women with higher exposure to birth preparedness messages during antenatal care delivered at a facility, compared to 49% who had not heard these messages ( $p < .001$ ).

Family decision-making patterns also appear to be strongly linked to seeking skilled care. Women were considerably more likely to seek skilled delivery care at a health facility when the husband was the key decision-maker, compared to the woman or her mother in law. At endline in Ouargaye, 70% of women reported their husband was the primary decision-maker about care during childbirth. A full 74% of women with a high Husband Involvement

Index delivered in a health facility, compared to 40% for those with low husband involvement. The association with husband involvement was even greater in Diapaga.

**Figure 5. Delivery at a Health Facility, by Husband Involvement Index**

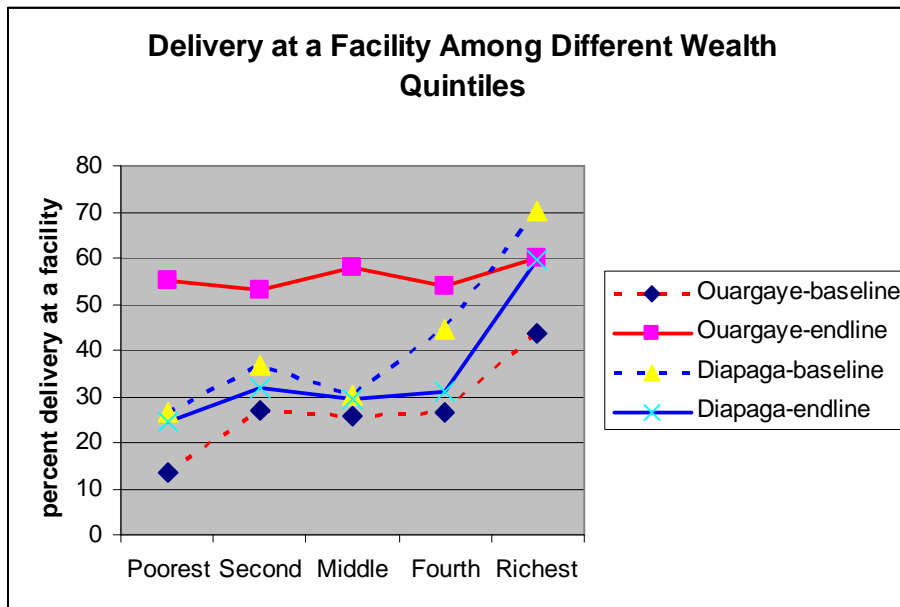


Household discussion and planning for birth was also found to be strongly associated with use of skilled care during delivery. 64% of women who reported having discussed and prepared for the delivery delivered in a health facility compared to only 39% of those with low scores on the Planning and Discussion Index.

Despite the fact that a high level of knowledge about safe motherhood and a high level of exposure to the community behaviour change campaign were associated with higher health facility delivery, these indexes were not significant in a multivariate analysis. This suggests that other factors were interacting with the effect of those indexes, like distance to health facility, education or age.

Age, educational status, and wealth were all found to be significantly associated with skilled care-seeking during childbirth. As found in other studies, younger women (aged 15 to 19) were more likely to deliver at a health facility. Also consistent with other studies, educated women in both districts were more likely to deliver in a facility than uneducated women. Finally, and this is a quite unusual finding, there was a significant change in the use of institutional deliveries among income groups. Analysis of the Ouargaye data by wealth quintile yielded very interesting results. In the 2003 survey, only 14% of women in the poorest quintile sought skilled care, compared to 44% of the richest quintile. **At endline, use of skilled care has levelled out among income groups: 55% of the poorest quintile and 60% of the richest quintile sought care at a health facility. In contrast, there was no change in the pattern of delivery among wealth quintiles in Diapaga between baseline and endline (see Figure 6).**

**Figure 6. Delivery at a Health Facility, by Wealth Quintile**



#### IV. Discussion and Interpretation of Findings

##### A. Quality and Availability of Skilled Maternity Care

Important improvements were observed in the capacity to provide the continuum of maternal health services that were the focus of the intervention—namely antenatal care, delivery care, care for obstetric complications, and postpartum care. The largest improvements were observed at the lower-level health centres, which were a major emphasis of the project, given their greater accessibility to women in rural communities.

Alongside these improvements, there were increases in the provision of maternal health services at both levels, and a much greater number of health facilities in each district were routinely providing prenatal care and postpartum care to new mothers at the endline survey than was the case at the project outset. There was also a great improvement in the availability of quality normal delivery care, and moderate progress in the availability of basic essential obstetric care (EOC) at the health centre level. However, there was little change in the provision of comprehensive EOC functions at the district hospital which is a source of ongoing concern, as major obstetric complications have to be dealt with at this level. While significant upgrades of the hospital took place and providers were trained, the majority of obstetric cases are referred to the regional hospital, resulting in concerns about the management of the hospital.

Evaluation findings related to provider skills were mixed, suggesting that more efforts are needed to support maternal health personnel in the provision of both routine and emergency obstetric care. In some areas, such as antenatal counselling, there were important improvements. Particularly noteworthy is the increase in the proportion of providers who routinely counsel women on birth preparedness, including place of delivery and danger signs during pregnancy—advice that was found to be closely linked to women’s use of health facilities for delivery care. At the same time, however, it appears that many essential diagnostic and preventive elements of focused antenatal care are not routinely provided to women during pregnancy.

Modest improvements were also observed in maternity care providers' skills related to normal delivery care—especially use of the partograph to monitor labour and active management of third stage of labour. However, little improvement was observed in the area of complications management—a finding that was surprising given the large number of providers who were trained in EMOC, an intensive two-week residential training that is competency-based. These results may have been influenced in part by the fact that 30% of the trained providers left between the end of the project and the evaluation, thus lowering the evaluation results. Evaluation challenges related to measuring providers' skills and competencies may also be a potential factor in the limited improvement in provider skills related to obstetric complications. Recall tests such as the one used are imperfect because the correct procedures for managing a particular complication can vary depending on the cadre of staff providing care, the level of the health system, and the drugs and equipment available at that site. In addition, providers may be more prone to forgetting steps in a verbal recall test than in a written test where they can read and check the steps they have identified. Thirdly, providers may fail to mention steps that they themselves cannot perform at their worksites because they lack certain drugs or supplies to do so.

## **B. Utilisation of Skilled Care during Pregnancy, Childbirth, and the Postpartum Period**

While it is important to improve the quality and availability of maternity care and ensure its accessibility to women, other non-health system factors appear to be involved in changing care-seeking behaviours. Exposure to the behaviour change campaign, safe motherhood awareness, birth preparedness counselling during antenatal care, husband involvement and household discussion and planning were all found to be significantly associated with delivery in a health facility in univariate analysis. However, only the last three indexes—birth preparedness counselling during ANC, husband involvement and household discussion and planning—were found to be significant in multivariate analysis, reflecting that these three indexes are the strongest determinants of skilled care use, independent of wealth and education.

Both the content and quality of antenatal care were shown to be strongly associated with skilled care-seeking. Women who received counselling on birth preparedness were much more likely to deliver in a health facility, irrespective of education, wealth, or distance from a health facility. Similarly, women who received more of the essential diagnostic and health promotion functions of ANC were also more likely to deliver in a health facility. These findings are important as they point to a relatively low-cost, but effective, intervention that can easily be scaled up.

Age, educational status, and wealth were all found to be significantly associated with skilled care-seeking during childbirth. A particularly encouraging finding was the increase in the use of skilled care among the poorest quintile, from 14% at baseline to 55% at endline. This is a key project result as in most countries use of skilled care is lowest among the poorest women, and maternal mortality is highest among this group. The SCI set out to decentralize care, and make high quality delivery care available close to where women live, at low cost and short distance, so that it becomes accessible to them.

## V. Conclusion and Recommendations

The experience and results of the Skilled Care Initiative highlight a number of key issues for subsequent efforts to scale up the SCI and increase rates of skilled attendance during childbirth in Burkina Faso, including the need to:

- **Ensure the provision of focused antenatal care (FANC), including individualized birth preparedness counselling on place of delivery.** Women who received counselling on place of delivery and danger signs during pregnancy were more likely to deliver at a health facility. Given the fact that the vast majority of women in Burkina Faso have at least one antenatal care visit during pregnancy, it is critical to ensure that birth preparedness counselling is given. This is a relatively low-cost intervention in comparison with community-level mobilisation and sensitisation campaigns. As such, it should be a key element of any skilled care strategy.
- **Strengthen lower-level health facilities.** Peripheral health facilities are the most accessible, especially for the rural poor. In addition, the costs of care—both to women and to the health system—are lowest at these sites. Traditionally, however, these sites have received little investment and support, and many, if not most, are challenged by a crumbling physical infrastructure, shortages of skilled personnel, serious gaps in essential obstetric equipment, and limited referral capacity. In contexts where these sites are handling the majority of deliveries, addressing these gaps is urgent.
- **Improve district hospitals.** The SCI experience showed that while great strides were made at the lower-level facilities in providing quality normal delivery care and upgrading basic essential obstetric care, the district hospital was not handling obstetric complications, even after significant upgrades. To save women's lives it is essential that the district hospital is functional, with essential equipment, fully staffed and well managed—ready to deal with the more serious obstetric complications that are referred from the health centres. Saving women's lives should inform hospital management decisions.
- **Improve the training and deployment of skilled attendant cadres.** Overall, there is a shortage of skilled attendants, which has negative consequences for the availability and quality of maternity care. While the SCI managed to advocate for some additional staff to be posted in Ouargaye, currently with increased levels of facility delivery, more staff is needed. Facilities providing maternal health care need sufficient staffing to ensure round-the-clock care, as communities lose confidence in a site that is not reliably open. In addition, it is crucial to review the content of pre-service training programmes to ensure that essential competencies of a skilled attendant are acquired, and overall manpower shortages within the health system must be addressed to make care available to the women who need it.
- **Focus on routine elements of maternal health services, in addition to complications.** While improvements were observed in the areas of antenatal care, normal delivery care, and postpartum care, there are still gaps in the content of these routine services that reduce the potential benefits of these health interventions in terms of preventing maternal mortality. Many women do not receive essential elements of focused antenatal care, and postpartum care visits are rarely used as an opportunity to assess the health status of new mothers and ensure that they are recovering well from childbirth. Given that a large proportion of maternal deaths take place in the early postpartum period, such missed opportunities can cost women their lives.
- **Targeted strategies to increase household planning and male involvement in maternal health.** The level of household discussion, planning and preparation for childbirth is a key determinant of use of skilled care, as is husband involvement in care-seeking decisions. Strategies aimed at engaging communities in maternal health should focus on such determinants, rather than broader awareness-raising about maternal



health risks and complications. A strategy that proved to be particularly effective in Ouargaye was the involvement of traditional chiefs in the community behaviour change communication campaign. These traditional guards of community values proved extraordinarily effective agents of change once they were convinced of the importance of delivering with a trained provider rather than a traditional birth attendant.

Overall, the results of the project underscore the need for context-specific approaches that are based on the capacity of the health system and maternity care utilisation patterns of communities. Such approaches hold great promise for improvements in the availability of skilled maternity care and increasing the likelihood that women will be able to receive care that prevents complications *and* access life-saving care when complications arise.

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To obtain a copy of the full report on the Skilled Care Initiative, please contact:

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