

## Strategies for Maternal Mortality Reduction in Senegal: Evaluation of the Free Delivery Policy and Delegation of Tasks

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### Background

The most recent estimates for the maternal mortality rate in Senegal are 980 (range: 590-1,400) (WHO, UNICEF, UNFPA & World Bank, 2007), which equates to a lifetime risk of dying for women on one in 22 – higher than the average, even for sub-Saharan Africa.

This is partly attributable to place of delivery: 37% of women deliver at home (Ndiaye & Mohamed, 2006). For the poorest quintile, 70.2% deliver at home, compared with only 5.7% for the richest. In terms of attendants at the birth, 51.9% are attended by 'skilled personnel' (doctor, nurse, midwife or auxiliary midwife). Again, rates are closely linked to socio-economic group. Only 7.5% deliver with a traditional birth attendant, but 35.7% are assisted by a relative or other person (and 4.2% delivery alone).

An analysis of access to emergency obstetric care in Senegal (Ministere de la Sante, UNFPA & AMDD, 2000) revealed that the availability of basic emergency obstetric care (BEOC) was inadequate (0.25 centres per 500,000 population, as opposed to a norm of 4). Utilisation was also low, with a met emergency obstetric need of 19.4% and only 29% of total births taking place in properly equipped facilities. Quality concerns were also raised by the finding of a case fatality rate of 4% in BEmONC and 5.3% in CEmONC (comprehensive emergency obstetric care) centres. 66% of causes of death were avoidable, according to this study.

Caesarean section rates are 3.3% nationally, but with wide regional and socio-economic variations. In Dakar, more than 10% of last deliveries were caesarean sections (Ndiaye & Mohamed, 2006), while in Matam the figure was 0.5%. Rates rise with economic status and educational level.

In response to these obstacles in the access to obstetric care, the Ministry of Health has defined and implemented a series of measures. A first measure was to improve geographical access to qualified medical care. For this purpose, starting in 2000, a strategy for the delegation of tasks in Emergency Obstetric and Neonatal Care (EmONC) was established. This is a programme which affects two levels within the health system. At the first level (health posts staffed by male or female nurses), the programme aim is to train these nurses to deal with five of the six functions of a basic EmONC.

This strategy began in early 2002. While at the second level (reference health centres or district hospitals) the strategy

was that a surgical team comprising of a doctor, an instrument specialist and an anaesthetist would be trained in the practice of a complete EmONC (including – in addition to the basic EmONC – caesarean section, vacuum extraction, forceps, intervention in the case of ectopic pregnancy and post-abortion care by Manual Intrauterine Aspiration - MIUA). Furthermore, at least two midwives were trained in obstetric ultrasonic scanning for each of the EmONC sites. This strategy began in 2000.

The second measure was the decision to make delivery and caesarean sections free to the public. The Free Delivery and Caesarean Policy (FDCP) was established in five poorer regions in 2005 (see figure 1) in order to reduce financial obstacles. The goal was to improve accessibility to maternal health services and to increase the number of deliveries at health facilities, which in turn would be a mean to reduce the number of maternal and perinatal deaths in the country. In 2006, the policy was partially extended to all other regions, with the exception of Dakar.

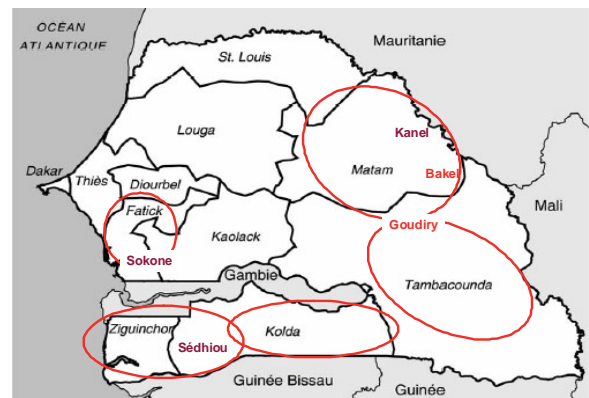


Figure 1 Map of Senegal

This paper summarises the findings of an evaluation carried out in 2006-7 of these two strategies.

### The Free Delivery and Caesarean Policy

#### Methods

The research methods comprised of four main subcomponents. The first, using 54 key informant interviews at different levels of the health system, provided qualitative information on how the policy had been implemented and the perceptions of key stakeholders. The second used financial and logistical records in five regions and six districts to track expenditure on the policy and how funds and kits had been allocated and had flowed in practice to different areas and levels. The third component

used a facility survey to monitor changes in utilisation and also in key quality indicators (structured examination of 761 major obstetric emergencies). Finally, focus group discussions and in-depth interviews with 106 total participants were held at community level to assess perceived changes in quality of care, how different groups and areas had been affected, and how women's uptake of services has been affected.

## Findings

- The evaluation found significant increases in utilisation in normal deliveries (from 40% to 44% of expected deliveries in FDCP areas over 2004-5) and in caesareans rates (rising from 4.2% to 5.6% in FDCP areas) (Witter, Armar-Klemesu & Dieng, 2008).
- National statistics support these findings. While facility delivery numbers at health centre and health post level rose by 77% overall between 2004 and 2006 for FDCP regions, for non-FDCP regions, the increase was 19% (MSPM/SNIS, 2007).
- The change was also mirrored in delivery fees, which declined in the FDCP regions, while growing elsewhere (see Figure 2).

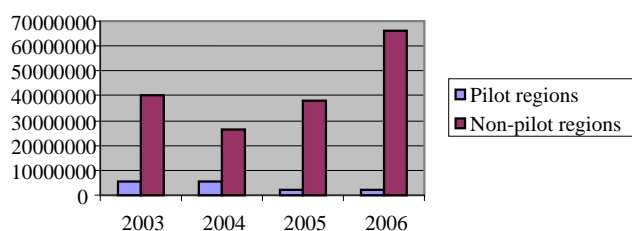


Figure 2: Total delivery fee receipts (FCFA) Senegal, 2003-6

- The increase of deliveries following the FDCP was not associated with a deteriorating quality, as indicated by the fresh stillborn rate that did not increase (3.3% in 2004; 3.1% in 2005).
- Unit costs were \$154 per caesarean and \$2.2 per delivery. Overall expenditure was \$0.10 per capita.
- The cost per *additional* caesarean under the policy was \$467 and the cost per *additional* supervised normal delivery was \$21.
- A number of implementation problems were noted. These included inadequate kits for normal deliveries. In relation to actual numbers of deliveries carried out nationally, there were 26,000 too few normal delivery kits distributed in 2005 (full-year figures for 2006 were lacking, but partial data suggests a continuing but smaller deficit for that year). For the caesarean sections, however, more funds were sent out than were needed – an over-coverage of 18% for 2005 and of 30% for 2006.
- The allocation of funds and kits did not correspond well to the population in regions, districts and health post catchment areas. There are differences between planned and actual distribution, from the national level, but more importantly, there are big variations in allocations per capita. Although some of the difference might be attribute to differences in facility attendance at delivery rates between areas, the kits and funds also did not correspond to actual reported delivery numbers, indicating problems of planning and management.

- 73% of funding was allocated to caesarean sections, which is disproportionate, given existing caesarean section rates and costs.
- Payment per caesarean substantially exceeded both the service cost and the previous user payments.
- For normal deliveries, however, support took the form of kits, which did not adequately substitute for previous user fee revenues. Lower level facilities lost 4-15% of their user fee revenues as a result of the policy. This presents a particular challenge for community staff, who were previously paid through user fee revenues.
- Other weaknesses included the lack of an overall operating document for the policy; the lack of clarity on systems for claiming and reimbursing acts; delays in transferring funds and kits; and the failure to provide for complicated deliveries other than caesareans.
- At community level, awareness of the policy was patchy.
- Some free caesareans were reported to have been received but many felt that overall costs had not reduced significantly. In some cases, rises (e.g. in costs of drugs) had outweighed any reduction.

## Recommendations

- In order to achieve its full potential, the Free Delivery and Caesarean policy requires improved systems for planning and allocating resources, and new channels to reimburse lower level facilities.
- It is also important that all complicated deliveries (not just caesareans) are included in the package.
- In the case of Senegal, a complementary strategy of investment in facilities, emergency transportation and staffing are also required to bring greater geographical access and upgrade services.
- As referral transport and drugs are the main cost components for households, these should be incorporated in future packages.
- Monitoring and evaluation should establish the real impact on households, disaggregated by socio-economic status and location.

## The Delegation of Skills Evaluation

### Methods

The study comprised three main components. The first was 42 interviews with key informants at various levels in the health system supplied qualitative information in respect of the implementation of the policy and perception of stakeholders. The second component used evaluation of facilities to monitor changes in utilization (rate of major obstetric interventions) in two districts. Finally, 5 focus group discussions were organized in communities (together with personnel) to evaluate changes seen in the quality of care, the way in which different groups and zones were affected, and how the utilization of services by women had been influenced.

### Findings

#### Production of surgical teams with EmONC skills

- Since 2001 ten surgical teams have been trained but only six are functioning (due to lack of a key team member or because equipment had not yet been delivered or was unsuitable).
- A minimum of 90 teams would be required to provide CEmONC for the 45 districts which lack this capacity

at present. The current rate of training is falling far short of this goal. Only one additional team was trained in 2006.

- In terms of effect on utilization, an increase in the rate of interventions was noted as soon as a team was in place. But this effect varied in time depending on the availability of the team: it was enough for one member to be absent for these interventions to cease. Rates seem to be affected by this lack of constancy, since recourse to the regional hospital does not necessarily take place if the unit in the district hospital stops functioning and intervention rates remained lower than 1% on average. In addition, the proportion of caesareans carried out for mother's life threatening indication is on average 47% (ranging from 37-62% depending on the hospital) which is lower than the proportions usually observed in Sub-Saharan Africa (UONN 2000).
- Central decision-makers consider the policy to be more viable policy than the training and assignment of gynaecologists to district hospitals. However, they identified a number of obstacles. Universities do not favour the delegation of tasks and have accepted only one training centre at the University of Dakar. The career of a doctor trained in obstetric surgery is not valued, especially if the comparison is with doctors who choose to be trained in public health. Finally, there is no real coordination of the different directorates in charge of the programme, leading to low effectiveness (e.g. if a doctor is assigned, but no anaesthetist).
- Practitioners felt that the work was valuable, but also raised a number of important barriers, such as low additional pay and the fact that they are not replaced during training, which increases work for their colleagues.
- The community health workers who receive three months training as instrument experts were most satisfied with the change in roles. The most dissatisfied were the anaesthetists, whose low workload led to fears of de-skilling.
- Communities appreciated the local service, which saved money and lives, but would like to see improved information and greater continuity of services.

### Delegation of basic obstetric care to nurse in-charges of health posts

- Since 2002, 8 regions with 40 districts and more than 400 health posts with maternity facilities (or roughly 70% of all posts with maternity facilities in the country) have had the chance to send their nurse in-charges for training in BEmONC.
- Routine figures of utilisation were lacking, so the evaluation relied on stakeholder perceptions
- Decision-makers supported the training but highlighted problems of low delivery workloads, and variations in the back up support available, duration and the profiles of the personnel trained.

- Nurse-in charges thought the training added to their prestige, and added to the income of the health posts (and therefore, indirectly, to their own). However, they complained about stressful workloads and absence of some kinds of equipment (e.g. for neonatal care). Earlier studies had found high attrition rates for trained nurses (Moreira 2006).
- Community members expressed a preference for midwives or auxiliary midwives to attend deliveries.

### Recommendations

- The policy of delegation of obstetric surgery to a generalist team offers immediate benefits and should be continued and intensified.
- Maintaining continuity of services requires that a full team is planned and supported.
- The effectiveness of training of nurse in-charges in BEmONC is less clear. The task faced by the Ministry of Health will be to decide whether this initiative, alongside genuinely free delivery, will suffice for the time being, or whether the production and assignment of midwives to the peripheral areas might not be essential in order to accelerate the reduction in maternal mortality.

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### Contributors

The evaluation was done in partnership with CEFORP (Thierno Dieng, Amadou H. Sylla, Mahammed Diadiou, Daouda Mbengue, Fatou Bintou Mbengue, Marguerite Cissé Bineta, Mbaye Fatou Thiam, Camara Touré), the division for family health of the Ministry of Health and Medical Prevention (Fatou Nar Mbaye, Ousseynou Faye, Marietou Diop), UNFPA (Isabella Moreira) and Impact (Vincent De Brouwere, Sophie Witter, Anna Coates).

### Acronyms

<b>AMDD</b>	Averting Maternal Death and Disability Project
<b>BEmONC</b>	Basic emergency obstetric and neonatal care
<b>CEmON</b>	Comprehensive emergency obstetric and neonatal care
<b>EmONC</b>	Emergency obstetric and neonatal care
<b>FDCP</b>	Free Delivery and Caesarean Policy
<b>UNFPA</b>	United Nations Population Fund

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