

# Safe Motherhood Needs Assessment in Albania

(September - October 1999)

## Final report

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**UNFPA**  
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## EUROPEAN HEALTH21 TARGET 3

### HEALTHY START IN LIFE

By the year 2020, all newborn babies, infants and pre-school children in the Region should have better health, ensuring a healthy start in life

*(Adopted by the WHO Regional Committee for Europe at its forty-eighth session, Copenhagen, September 1998)*

## ABSTRACT

In Albania, maternal and infant deaths still represent an important proportion of the burden of mortality. The Ministry of Health has decided to improve reproductive health activities through national Safe Motherhood action plans. This needs assessment was conducted to assess the current situation of maternal and neonatal care (delivery and organization of services, quality of care) and to identify the major components of a future national plan for maternal and perinatal care.

## Keywords

MATERNAL WELFARE  
MATERNAL HEALTH SERVICES  
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OBSTETRICS  
ALBANIA

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# Contents

|                                                   | Page |
|---------------------------------------------------|------|
| Executive summary .....                           | 1    |
| Introduction and background.....                  | 2    |
| Methods .....                                     | 3    |
| Results .....                                     | 5    |
| Districts and facilities surveyed.....            | 5    |
| Population and resources .....                    | 5    |
| Health services performance and management .....  | 6    |
| Provision and quality of maternity services ..... | 6    |
| Training .....                                    | 9    |
| Conclusions .....                                 | 10   |
| Recommendations .....                             | 11   |
| Organisation of services .....                    | 11   |
| Continuity of care .....                          | 11   |
| Training and tasks.....                           | 12   |
| Quality of maternal and neonatal care.....        | 13   |
| Equipment and supplies.....                       | 14   |
| Routine reporting system.....                     | 14   |
| Annex A.....                                      | 15   |
| Annex B.....                                      | 16   |

## Executive summary

In Albania, maternal and infant deaths still represent an important proportion of the burden of mortality. The Ministry of Health has decided to improve reproductive health activities through national Safe Motherhood action plans. This needs assessment was conducted to assess the current situation of maternal and neonatal care (delivery and organisation of services, quality of care) and to identify the major components of a future national plan for maternal and perinatal care.

The survey was carried out using some of the methods and tools described in the “Safe Motherhood Needs Assessment” manual produced by WHO in six maternity hospitals and 12 health centres of five districts: Tirana, Shkoder, Elbasan, Fier and Vlore. Detailed results are available in the full text of the report, while all the tables are presented in a separate document. The main conclusions and recommendations of the report are:

1. In many health centres the annual number of deliveries is very low and the demand for pregnancy and obstetric care is much lower than the offer of services. The quality of care is consequently inadequate, because the health workers do not have the necessary skills and are unable to practice them in a reasonable number of patients. In addition, the equipment and supplies are often inadequate and supervision is insufficient. These findings suggest that the number of health centres providing obstetric care could be reduced, with a simultaneous identification of a short list of essential activities to be carried out at this level of care, while the district and referral hospitals should be rehabilitated (structure, equipment, supplies, staff) to ensure good quality obstetric care at first referral level. The future national Safe Motherhood plan should clearly define the levels of care and the number, type of health facilities and activities to be implemented at each level.
2. Antenatal care is considered as a primary health care activity by the Ministry of Health. Some maternity hospitals at district level are defined by the Ministry of Health as second-level facilities and do not offer antenatal care, though they carry out primary health care activities as well, such as essential obstetric and neonatal care. As a consequence, continuity of obstetric care is not ensured. At the same time, the referral and communication system is poor due to structural and infrastructural deficiencies. In the national plan, antenatal care should be integrated within obstetric activities and should be provided wherever obstetric and perinatal services are set up. The referral and communication system should be improved. If possible, and unless referral is considered necessary, the same midwife or group of midwives should take care of a woman from the onset of pregnancy to delivery and post-partum period. The use of a single standard home-based maternal card would facilitate continuity of care.
3. Midwives lack a clear definition of tasks and often perform activities with low quality; they appear to lack the necessary skills and sufficient practical experience. Hands-on training is necessary to develop these skills, and sufficient practice is necessary to maintain them, in particular the life-saving skills. In addition, midwives do not seem to be sufficiently empowered and valued; they should have their role recognised, they should be adequately trained and supervised, and they should deserve more consideration and respect. Specific training should include normal delivery care (stressing the use of the partograph and hygienic practices) and essential obstetric care (prevention, diagnosis and management of infections, of hypertension in pregnancy, and of obstructed labour).

4. Quality of care should also be improved through simple and cost-effective interventions such as simple routines for antenatal care, diagnosis and treatment of STDs, safe and clean practices during delivery, essential neonatal care and resuscitation practices, better use of essential drugs. Evidence-based guidelines are needed for this purpose; the Ministry of Health should be responsible for their development (or revision), dissemination and use, including training.
5. Essential equipment and supplies mentioned in these guidelines for the various obstetric and perinatal care activities should be made available. These include drugs for case management of selected diseases and conditions, equipment for antenatal care (e.g. blood pressure apparatus, stethoscope), delivery care (e.g. aspirator, vacuum extractor, wall clock), neonatal care (e.g. bag and mask), and family planning (e.g. contraceptives). But include also basic commodities such as light and clean water for which intersectoral action is needed.
6. In addition to a simple standard home-based maternal card, simple registers for antenatal care, delivery care and neonatal care will improve the routine reporting system, to allow the periodic estimation of essential indicators. These indicators must be periodically analysed, interpreted and used to update the assessment of needs and the action plans.

## **Introduction and background**

In Albania, maternal and infant deaths still represent an important proportion of the burden of mortality. Some of the information available on maternal and child health in Albania is reported in Annex A. The maternal mortality ratio appears to be 2-3 times higher than in countries of western Europe; the neonatal mortality rate is also higher and above the regional targets. The infant mortality rate is the highest in Europe. The main causes of maternal death (haemorrhage, eclampsia, infection, diseases of pregnancy, inadequate management, and lack of appropriate referral for high risk pregnancies) are potentially preventable with simple and cost-effective interventions.

To reduce maternal and perinatal mortality, the Albanian Ministry of Health (MoH) will improve reproductive health activities through national Safe Motherhood action plans. The first step in the development and implementation of these plans is an assessment of the current situation. Within this framework, our Unit for Health Services Research and International Cooperation, a WHO Collaborating Centre for Maternal and Child Health, has been asked by WHO/EURO to participate in a needs assessment project in collaboration with the MoH and the United Nation Fund for Population Activities (UNFPA).

The objective of the survey was to assess the current situation of maternal and neonatal care (delivery and organisation of services, quality of care) to identify the major components of a national plan for maternal and perinatal care. The survey was carried out at district level, and combined data from the selected districts must be interpreted as such and not generalised to the whole country.

This report is divided into four sections. Section 1 describes the methods used for the survey. Section 2 reports the results of the analysis of data. Section 3 summarises the conclusions. Section 4 lists the recommendations.

## Methods

The tool used to prepare and carry out the survey and to analyse data was the “Safe Motherhood Needs Assessment” manual produced by WHO (WHO/RHT/MSM/96.18). The survey forms included in the manual refer to the “Mother Baby Package” (WHO/FHE/MSM/94.11) and to its standards of health care. The data were gathered using some of these forms which include:

- structured interviews to members of the district health team, directors of maternity units, nurses/midwives, and women attending antenatal services;
- direct observations in the maternity units;
- compilation of data from records and registers (antenatal care, family planning, labour and delivery).

The MoH selected five out of thirteen survey forms included in the manual and recommended for the so-called “Basic” needs assessment. An additional form, the normal delivery record review, was added to better assess the quality of care provided for normal deliveries. The six selected forms were:

- District Health Team Interview (DHT);
- Facility Management (FAC);
- Interviews with Midwives or Maternity Nurses (NMW);
- Antenatal Client Exit Interview (ANC);
- Surveyor Observations (SOV);
- Normal Delivery Record Review (NDR).

Some forms for complicated deliveries (CDO, CDE) were also used during the survey to assess the quality of care provided to patients with complications such as eclampsia and obstructed labour.

The forms had been translated into Albanian before the beginning of the survey, but no adaptation or pre-testing was made to address the specific problems of the selected districts. The sample size was calculated following the instructions of the WHO manual, based on the population of each selected district. The districts initially selected were six: Tirana, Shkoder, Elbasan, Fier, Vlore, and Korce. The last district was eventually deleted from the list before the beginning of the fieldwork, because the available time, including travel time, was not sufficient to survey one maternity and two health centres in each of the six districts initially selected. Moreover, the Ministry of Health asked to survey more facilities in Tirana, because its population had increased rapidly during the last years. Thus, in each district, a second-level maternity and two health centres were surveyed, except for Tirana district where two maternity units and four health centres were surveyed. Health posts were not surveyed because delivery services are not available at this level.

The fieldwork started the 21<sup>st</sup> of September and lasted two weeks, until the 1<sup>st</sup> of October. It was conducted by a team of seven surveyors:

- Dr Donika Beba, specialist in obstetrics and gynaecology, from the Department of Reproductive Health at the Ministry of Health, Tirana, who was appointed team leader;
- Dr Maksim Bozo, a paediatrician from the Ministry of Health, Tirana;
- Dr Agim Sheu, an epidemiologist from the Ministry of Health, Tirana;
- Dr Arsim Qaudarbasha, a paediatrician from an Albanian NGO called SEATS;
- Dr Alberta Bacci, specialist in obstetrics and gynaecology;

- Dr Anna Macaluso, paediatrician and specialist in public health;
- Dr Luca Ronfani, paediatrician with a degree in medical statistics.

The inspectors for mother and child health of the five districts (Dr Rozina Petani, paediatrician in Shkoder, Dr Desantila Tahiraj, paediatrician in Elbasan, Dr Liri Kalemi, director of PHC in Fier, Dr Shuaip Kanushi, inspector in Vlora, and Dr Prustem Prenika, paediatrician in Tirana) collaborated with the surveyors during the fieldwork and completed the DHT form and part of the FAC form before the beginning of the survey.

Dr Petrit Vasili, Director of PHC at the Ministry of Health, Tirana, was the coordinator for the whole needs assessment, in charge of all administrative matters including work plans, selection and translation of the survey forms, selection and preliminary training of the surveyors and mother and child health inspectors from the districts, selection of and communication with the districts.

The surveyors were divided in two groups (team A and team B) and the fieldwork started after one day of training. The main objective of training was to standardise the methods for completing the forms. A consensus on definitions and standards of care was reached, and the methods for conducting interviews with health workers and women were discussed. Because no previous training, field testing and adaptation of the forms had been done, a field test in Maternity n° 1 in Tirana was considered necessary, and an adaptation of the fieldwork schedule was made after this field test. The final workplan included:

- Tuesday 21/09/99. Meetings in Tirana with the survey coordinator, staff of the Ministry of Health, and representatives of WHO and UNFPA; meeting with surveyors and initial training.
- Wednesday 22/09/99. Continuation of the training for the survey and practical training at Maternity n° 1, Tirana University Hospital.
- Thursday 23/09/99. Establishment of the survey teams. Travel from Tirana to Shkoder. Survey of Shkoder Maternity Hospital (except for ANC).
- Friday 24/09/99. Team A: ANC at Shkoder Maternity Hospital and survey at Bushat Health Centre. Team B: survey at Vau-Dejes Health Centre. Return to Tirana.
- Saturday 25/09/99. Team A and team B: survey at Maternity n°2, Tirana.
- Monday 27/09/99. Team A: ANC in Tirana (polyclinics) and survey at Ndroq Health Centre. Team B: survey at Elbasan Maternity (including ANC).
- Tuesday 28/09/99. Team B: survey of two Health Centres in Elbasan district (Shirgyan and Cerrik). Team A: survey of three Health Centres in Tirana district (Kamez, Vore, and Preze).
- Wednesday 29/09/99. Travel to Fier and survey at Fier Maternity Hospital (except for ANC). Travel to Vlore.
- Thursday 30/09/99. Survey at Vlore Maternity and at two Health Centres (Villahine and Selenice).
- Friday 01/10/99. Survey at two Health Centres of Fier district (Patos and Roskovec) and ANC at two polyclinics.

*Note:* Dr Qaudarbasha and Dr Bacci had to leave the survey teams at the end of the first week of fieldwork because of previous work commitments; as a consequence, the two teams had to be merged into a single team from 29/09/99.

The data collected were entered into EpiInfo and analysed by two of the Italian surveyors upon return to Trieste. The tables generated by the EpiInfo programme are numerated as in the WHO manual and are presented in a document that is separated from the text. Not all the tables available deserved to be mentioned and commented upon in the text. There are no missing data

in the NDR, NMW and ANC forms. Some data of the FAC form are missing because they could not be obtained in the facilities surveyed. As already mentioned, the DHT form and the first part of FAC form were completed before the fieldwork by the district health team and by the facility director. A revision of DHT forms was carried out by the local surveyors after the fieldwork; the final DHT forms became available about a month after the end of the fieldwork. This was not the only inconvenience during the survey; the other constraints were the insufficient time available (an additional week of fieldwork would have allowed a better assessment of all the selected facilities), the poor infrastructure of the districts (in particular regarding travel and communication), and the organization of the health system (for example, the fact that antenatal care is not provided by some maternity hospitals or the way clinical records are filed).

## Results

### *Districts and facilities surveyed*

The survey was carried out in five districts and in 18 health facilities: six hospitals (H) and 12 health centres (HC). The two hospitals in Tirana are identified as Tirana 1 and Tirana 2. The total number of facilities and the sample size by type of facility and district are shown in Table 2. The sample size for each type of survey form is shown in Table 4. It was impossible to get the planned sample size for the ANC forms because of the organisation of antenatal care: this is considered a primary health care activity and is implemented in health centres for women in urban areas and in ordinary health centres in the villages; it is not integrated within the activities of all maternity hospitals at district level, because these are considered second-level facilities not responsible for antenatal care.

### *Population and resources*

The district population (DHT forms) and the catchment population by district and facility (FAC forms) are shown in Table D32. The catchment population is probably overestimated. The population of the selected districts represents almost 50% of the whole Albanian population. The total number of births in the catchment area was 23,491 (as estimated from the 1998 registers), 9% of which in the HC (2116 births) and 91% in the H (21,375 births). The total number of births in Albania in 1996 was 68,352 (national data).

Table D33 shows the number of facilities per 100,000 population and the estimated maternity bed occupancy rate (number of births  $\times$  2 / number of maternity beds  $\times$  365). The low estimated bed occupancy rate can be partially explained by the low average length of stay (two days) used in the formula.

In the catchment area, the average distance to the referral facility is 19 km and the mean referral time is one hour. However, as HCs to be surveyed were chosen close to hospitals, this distance is not representative for the whole country.

The percentage of facilities with communication capability, as estimated by the district teams (DHT forms) is 66% on average (range 60%-72%). However, according to our assessment, the communication and transport capability represents the main referral problem: only 17% of HCs have an ambulance and 8% a telephone (Table D34). Private cars are usually used to transfer patients.

Table D8 shows the number of health workers in the districts and facilities surveyed, by category of personnel. Based on district data (DHT forms), there are one midwife (full and limited qualification) per 827 inhabitants (compared to 1:246 in 1990) and one physician per 1943 inhabitants (1:565 in 1990). This fall in the ratio of health workers to people between 1990 and 1999 can be partially explained by migration and brain drain.

Tables D21, D22, D25 and D34 show the availability of basic equipment, consumable supplies and physical infrastructure for maternity care by facility type. We will refer to these Tables in the sections describing maternal and neonatal services.

### *Health services performance and management*

Registers and log books are available in each facility, but the quality of the information is sometimes poor due to lack of accuracy (e.g. gestational age not well assessed and recorded) and completeness (e.g. birth weight and APGAR not recorded).

The rate of caesarean section, and of maternal, early neonatal and perinatal deaths are shown in Tables D2 and D3. Data about early neonatal deaths were not available in district 3. The data on mortality are consistent with the official data for previous years (maternal mortality: 29.5x100,000 in 1995; perinatal mortality: 13.2x1000 and 12.4x1000 in 1995 and 1996). However, all these estimates might be unreliable: maternal mortality is underestimated when women deaths are not correctly attributed to maternal causes, and perinatal/infant mortality rates appear also too low, taking into account the low quality of neonatal care delivered in the facilities surveyed. Moreover, there is no reliable routine reporting system.

The estimated institutional delivery coverage rate is 47% in the HCs and 82% in the Hs. This coverage is lower than expected, but the data could be unreliable because it is difficult to get a reliable denominator. The percentage of home deliveries is unknown, but the one officially reported seems too low and does not explain such a low coverage rate for institutional deliveries. Tables C1 and D4 show the delivery coverage rate by district. The coverage of antenatal care was not assessed because the registers do not report the number of women attending antenatal services, but the total number of antenatal visits. The coverage of antenatal care reported by the directors of the facilities may not be reliable.

### *Provision and quality of maternity services*

The provision of maternity services by facility type is shown in Table C2. The main findings are described by service.

#### Antenatal services

Antenatal care is provided in all the HCs and in 67% of the Hs. It is also provided in polyclinics not integrated with the referral H (e.g. Tirana1 and Fier). In the facilities surveyed, the geographical access to antenatal care is good: the travel time from home to the clinic is 18 minutes on average. This can not be generalised to the whole country because the selected districts have a health care system that is better, in terms of access, than the national average. Also, some remote districts were excluded *a priori* from the survey for security reasons.

There is insufficient communication and transfer of information between Hs and polyclinics. No home-based maternal record is used (antenatal cards are kept in the facilities), and the hospital delivery records carry no information on antenatal care. The antenatal records used are not standardised. Guidelines are available only in a minority of facilities and doctors do not seem to

be aware about effectiveness and cost of ultrasound examination in pregnancy and adequate number of antenatal visits. The coverage of antenatal care was not assessed, but the directors of HCs and Hs affirm it is high. However, we were unable to detect and interview a sufficient number of women in the antenatal services surveyed.

Information about the quality of the visits was gathered through interviews to women attending antenatal care. We decided to present the aggregated data (H and HC) as we interviewed only five women in the HCs and many women were interviewed in polyclinics. Tables C7-C10 show the timing of the first antenatal visit, the activities carried out during the last visit (55 women) and during any past antenatal visit (only third trimester visits, 36 women). Only 49% of women had the first antenatal visit within the first three months of pregnancy. During the last visit, blood pressure was checked in 83% and foetal heart rate in 54% of women. While blood pressure should be checked in any antenatal visit, the foetal heart rate can be difficult to check in the first trimester. Blood pressure apparatus is available only in 58% of HCs and stethoscope in 42%. Moreover, in most HCs only the systolic blood pressure is taken as midwives do not have a stethoscope.

During the past antenatal visit, iron supplements were given to about 25% of women and a blood sample was drawn in 83%. Anti-anaemia drugs were present in 17% of HCs and 67% of Hs (Table D29). It would be important to assess the prevalence of anaemia in pregnancy before developing guidelines. Tetanus toxoid stored in refrigerator was found in 83% of HCs and 17% of Hs.

Table D42 shows the percentage of women that reported any educational message during antenatal visits (only third trimester, 36 women). Information about family planning and prevention of STD was given only to a low percentage of women (42% and 33%). Only 58% of women reported having been told about warning signs during pregnancy. Table B1 confirms that women's knowledge about warning signs during pregnancy is not satisfactory. In the facilities surveyed, educational material was generally not available or unsatisfactory. There was no material about warning signs of complications, antenatal nutrition and anaemia during pregnancy (Table D44). In a minority of Hs (17%) material about HIV/AIDS was available. According to the Ministry of Health, screening and treatment for STD is done also at third level of care and in special facilities for dermosyphilopathic diseases.

### Family planning services

Family planning services are provided in all the Hs and in 8/12 HCs (Table C2). The equipment was available in all the Hs and HCs that were providing this service. Family planning commodities were available in most facilities: oral contraceptive and depot forms were absent in two facilities and condoms in three. The assessment of registers confirmed these findings, even though we could not access three HC registers because the person in charge was not present during our visit. In some cases, the materials were supplied by NGOs. We did not have access to data about sterilisation because they are recorded in registers of surgical activities. Educational material about family planning was available in 50% of the Hs, but only in 8% of the HCs.

### STD services

According to the directors of the surveyed facilities, STD treatment is provided in one third of the Hs and two thirds of the HCs. However, basic antibiotics for the treatment of STD are often lacking in the HCs (Table D28) and syphilis testing is not available at all. The Hs do not offer STD services if antenatal care is not integrated. Few women are given information and education about STD and HIV/AIDS in the facilities surveyed (Table C34). It is not clear what the size of

the problem is, though the Institute of Public Health is said to have all the data, but from surveyors observations it appears that the problem is not adequately addressed. Some health professionals stated that they still see cases of congenital syphilis, though the Ministry of Health affirms that no cases were notified for many years; but it is well known that notification systems often fail to give a realistic picture of the incidence of STD. Cultural barriers seem also to be present.

### Clean and safe delivery

Deliveries are attended by doctors in 78% and by nurses in 22% of cases. Data on the quality of care for normal deliveries were gathered through delivery records and observation of the delivery room. Five indicators of performance and standard practices during delivery care are shown in Table C13. But some of these practices might have been carried out without being recorded. From surveyors observation, it seems that midwives are generally not allowed to write in the clinical records, even if they clinically assess the patients.

Tables D21 and D22 show the availability of maternity equipment by facility type. This is often scarce. Minimum delivery equipment that should always be available, such as scissors, needles and suture materials, is often lacking or in less than satisfactory conditions. Scissors were available and satisfactory in 50%, suture needles and materials in 67%, and needle holders in 22% of facilities.

The delivery room (with bed and lighting) and the bathroom facilities were considered satisfactory in only half of the facilities surveyed. They are generally not well lightened and overcrowded (in hospitals). A wall clock and a metered tape were often not available in the delivery rooms assessed. Water supply was not satisfactory: three HCs and one H did not have water at all; two HCs and one H had water only few hours per day.

The WHO partograph is not used at all. The direct observation of some deliveries revealed that standard precautions for the protection of patients and health workers are not commonly used.

### Essential obstetric care

Tables C17 and C18 show the provision of services for the management of complications by facility type. All the Hs provide services for obstetric complications (severe anaemia, obstructed labour, eclampsia, postpartum haemorrhage). HCs usually manage few complications. Within the previous six months, no HC attended women with sepsis and eclampsia; only 8% attended women with abortion complications, 25% with retained placenta, 33% with breech presentation, 50% with postpartum haemorrhage. The nurses we interviewed in the HCs confirmed that they rarely manage sepsis and eclampsia (8%).

Abortion is managed in the Hs, but it seems that a number of them is managed at home by private doctors, in unsafe conditions. Complications from abortion could be underreported in these cases. One of the reason for unsafe home abortion is probably the late determination of the foetal sex and the willingness to terminate the pregnancy illegally (i.e. after three months of pregnancy) if the foetus is a female.

The supplies and equipment for maternity care are insufficient in the HCs: obstetric forceps is never available, and vacuum extractor is available in 4/6 Hs and 1/12 HCs. It was fairly common to find a good and working vacuum extractor not in use because of lack of skills, especially in the HCs (Tables D21 and D22).

Tables D28 to D30 show the availability of anti-infective drugs and drugs for basic maternity care and complications. It is worth mentioning that basic anti-infective drugs are often not available in the HCs and that anti-hypertensive drugs are often not available neither in the HCs nor in the Hs. Magnesium sulphate or diazepam are easily available in the Hs (except for one H where they were locked in a cupboard far from the delivery room). The analysis of a limited number of clinical records of complicated labour showed an inappropriate use of drugs in terms of prescription, dosage, timing, and combination of drugs.

### Neonatal care

Essential neonatal care and resuscitation practices were evaluated through direct observation of the facilities and of some deliveries. The resuscitation area is generally not equipped or it is far from the delivery area. Table D23 shows the availability of equipment and supplies for neonatal care. Bag and mask are available and satisfactory in 4/6 Hs (67%; district 1, 2, 3) and in 42% of the HCs, but it was clear that health workers are not familiar with their use (equipment covered with dust and not at hand, when available), especially in the HCs. Manual vacuum aspirators are used in 17% of HCs and 67% of Hs.

Thermal control is unsatisfactory: clothing to dry and cover the baby was present in 50% of the Hs and 75% of the HCs, blanket to wrap the baby in 67% of HCs and 33% of Hs (Table D23). Babies are not usually placed skin to skin with their mothers; they are often separated and kept far from their mothers. In many places newborn babies are still swaddled. Rooming-in is provided in 67% of the Hs and 75% of the HCs. This seems to be more due to routines and cultural beliefs than to lack of space.

Recommended eye drops (tetracycline or silver nitrate) are not available at all, but 5/12 HCs and 3/6 Hs use, inappropriately, penicillin; one hospital uses iodine povidone. Birth weight is always recorded in the delivery records, but the assessment of the baby conditions was recorded only in 67% of delivery records assessed.

Inappropriate use of technology and space was observed in many maternity units. The available incubators are generally not satisfactory. In some facilities, old incubators were used as wardrobe, or two babies were put together in the same incubator. In one HC we found a mini-oxygen cylinder instead of bag and mask for neonatal resuscitation.

Care of the baby was discussed with 72% of the women attending antenatal visits, but there was no educational material about newborn care or breastfeeding in any of the facilities.

### *Training*

Tables D9-D13 show the state of midwifery training by district, facility and type of training. According to the district health teams, 50% of midwives were trained in the past year. These data are consistent with nurses interviews. One third of nurses said that they had never received a training course (in district 2, none of the midwives received a training course in the last year). Only 40% of health workers received hands-on training and 22% had never received supervisory support (Tables D18 and D19). According to the district health teams, family planning training was provided in 4/5 districts in the last year, but 50% of the midwives said that they had never received a family planning course.

Practice in life-saving skills was assessed by the number of complications managed within the past six months in Hs and HCs. A total of 37 nurses were interviewed; 65% managed a post-

partum haemorrhage, 51% an obstructed labour, 30% an abortion complication, 24% an eclampsia, and 14% a puerperal sepsis (Table D15).

## Conclusions

The main findings of this survey can be summarised as follows:

1. Training and tasks of health personnel
  - 1.1. HCs midwifery staff do not have the skills needed to perform the required activities (e.g. manual removal of the placenta, vacuum extraction, forceps delivery) following WHO standards;
  - 1.2. difficult work conditions, low salaries, and scarce supervision undermine the commitment of midwifery staff;
  - 1.3. the hierarchical structure represents a constraint towards collaboration between doctors and midwives (mainly at hospital level) and towards the empowerment of midwifery staff.
2. Essential drugs and equipment
  - 2.1. there is lack of essential drugs for obstetric care (e.g. antibacterial, anti-hypertensive and anti-convulsivant drugs) at all levels;
  - 2.2. there is evidence of inappropriate use of the existing drugs and of use of ineffective drugs;
  - 2.3. there is lack of basic infrastructure and equipment for maternal and neonatal care, and scarce maintenance capacity of existing equipment.
3. Clean and safe delivery
  - 3.1. there is lack of minimal delivery equipment (e.g. scissors, gloves) and supplies (e.g. water);
  - 3.2. many delivery practices are sub-standard (e.g. for lack of hygiene);
  - 3.3. monitoring of labour is sub-standard (WHO partograph not used, inadequate monitoring of vital signs);
  - 3.4. there are big differences in the quality of care delivered among facilities.
4. Essential neonatal care
  - 4.1. lack of essential equipment and skills lead to inadequate newborn care and resuscitation practices.
5. Organisation of services
  - 5.1. the functional links between HCs and referral Hs is unsatisfactory (lack of communication capability, e.g. telephone and ambulance; lack of referral protocols);
  - 5.2. there is lack of continuity of care, especially between antenatal services and maternity units.
6. Monitoring
  - 6.1. there is no reliable routine reporting system.

## Recommendations

The following recommendations are organised by type to facilitate reading. In addition, they can be used, together with the main results of this needs assessment, to give some feedback to the staff of the Ministry of Health and of the surveyed health facilities.

### *Organisation of services*

|                                                                                           |
|-------------------------------------------------------------------------------------------|
| Develop and implement a plan for the regionalization of obstetric and perinatal services. |
|-------------------------------------------------------------------------------------------|

Such a plan should clearly define the levels of care and the number, type of health facilities and activities to be implemented at each level. The standards recommended by WHO could be used for this definition of levels of care, taking into account that some health facilities are located in distant mountain areas and that health professionals tend to migrate from these to more centrally placed facilities. Our finding was that:

- The average HC to population ratio in the selected districts is 12.4:100,000 or 1:8,065 (the recommended WHO standard being 1:10,000 to 1:100,000). Five out of 12 of the surveyed HC have a catchment population lower than 10,000 people.
- In most HCs the annual number of deliveries is very low and, according to district data, the demand for pregnancy and obstetric care seems much lower than the offer of services.
- The quality of care is consequently inadequate, because the health workers do not have the necessary skills and are unable to practice them in a reasonable number of patients.
- In addition, the equipment and supplies are often inadequate and supervision is insufficient.
- Finally, while geographical access is good, communication and referral capabilities appear to be low.

These findings suggest that the number of HCs providing obstetric care could be reduced, with a simultaneous identification of a short list of essential activities to be carried out at this level of care, while the district and referral hospitals should be rehabilitated (structure, equipment, supplies, staff) to ensure good quality obstetric care at first referral level. A better organisation of the opening and service time in health facilities, to facilitate access and continuity of care (see next point), is also needed. This applies also to the availability of family planning services (most HCs do not provide this service after 2 p.m.).

### *Continuity of care*

|                                                                         |
|-------------------------------------------------------------------------|
| Integrate antenatal care within essential obstetric and perinatal care. |
|-------------------------------------------------------------------------|

Antenatal care may rightly be considered a primary health care activity. Many maternity hospitals at district level are defined by the Ministry of Health as second-level facilities. However, they carry out plenty of primary health care activities, including essential obstetric and neonatal care. Antenatal care should be integrated within these activities and should in fact be provided wherever obstetric and perinatal services are set up. In addition, pregnant women with complications or high risk should be timely referred from the primary health care service and from the so called second-level hospital to an adequate referral facility, where proper care can be provided.

If possible, and unless referral is considered necessary, the same midwife or group of midwives should take care of a woman from the onset of pregnancy to delivery and post-partum period. Protocols should be developed for communication and referral between health facilities, and both should be improved, so that different health workers will know what care is provided to each woman and newborn infant. The use of a single standard home-based maternal card, that the Ministry of Health is apparently already developing from the WHO model and pilot testing in five districts with UNICEF support, would facilitate this continuity of care. Better communication seems to be necessary even within the same hospital, as health professionals are often unaware of previous admissions of the same woman.

### *Training and tasks*

Ensure periodic hand-on training on knowledge and skills needed to perform assigned activities with adequate quality.

Our findings indicate that health facilities, and HCs in particular, do not have an assigned list of essential activities to carry out. Similarly, midwives lack a clear definition of their tasks. Moreover, they often perform activities with low quality and appear to lack the necessary skills and sufficient practical experience. Hands-on training is necessary to develop these skills, and sufficient practice is necessary to maintain them, in particular the life-saving skills. In addition, midwives do not seem to be sufficiently empowered and valued. It must be remembered that in any health care system activities should be carried out by the least trained person who is fully competent to perform them safely and effectively. This person is almost always the midwife in obstetric and perinatal care; she should therefore have her key role recognised, be adequately trained and supervised, and she should deserve more consideration and respect. Specific training should include normal delivery care (stressing the use of the partograph and hygienic practices) and essential obstetric care (prevention, diagnosis and management of infections, of hypertension in pregnancy, and of obstructed labour).

It is not clear whether these problems regarding the training and skills of midwives derive from poor basic pre-graduate training or from lack of post-graduate and on-the-job training and supervision. An assessment of the current pre-graduate training for midwives in terms of contents and quality would be needed to answer the first question. Meanwhile, it is necessary to deal with the problem of the midwives who are already graduated. They need apparently two types of training:

- A refreshing practical course on basic skills such as hygiene in obstetric care, sterilization and maintenance of equipment, care of the normal delivery and of the normal newborn infant, use of registers and records.
- A specific course on the management, including referral, of common obstetric (bleeding, infection, hypertensive disorders, obstructed labour) and neonatal (asphyxia, hypothermia, infection, breastfeeding) complications.

Some of the materials to be used for such courses are already available: the five modules on midwifery education (WHO, Geneva, 1996) and the 5-day course on essential newborn care and breastfeeding (WHO, Copenhagen, 1998). Some other training materials could become available in the next couple of years: the modules on integrated management of pregnancy and childbirth (WHO, Geneva, first draft, 1999). The last one in particular seems to suit the needs of midwives and doctors working at the level of care where this survey was carried out in Albania, though a pilot test would be needed before recommending its use. The available materials would also need adaptation and translation before use. Needless to say, follow-up and supervision would be necessary to ensure the reinforcement and application of the skills acquired with training.

Finally, training should be conducted in facilities where good evidence-based practices are commonly carried out. Facilities with these features are likely to be rare in Albania. The Ministry of Health should identify, after regionalization of obstetric and perinatal services, one hospital per region where health professionals implement in the best possible way the national guidelines based on evidence. These hospitals should be the training centres for their respective regions and should also be in charge of follow-up and supervision (in collaboration with the district hospitals) after training.

### *Quality of maternal and neonatal care*

Develop standard guidelines for obstetric and perinatal care.

Quality of care could be improved with simple and cost-effective interventions such as:

- Improving the content of antenatal visits. In addition to access and coverage, it is important to make sure that a short list of essential activities is carried out at each visit. This list should include health education and information to women for better use of services. In particular, pregnant women attending antenatal care at HCs should be told about warning signs of danger and what to do if they occur. The quality of each contact, more than the length and the number of contacts, should be stressed in antenatal care guidelines.
- Improving the diagnosis and treatment of STDs. Simple diagnostic tests, such as RPR, should be introduced and made available at each level of care. Case management guidelines should be available in all facilities, as well as the necessary antibiotics. Pregnant women should not be referred to other facilities (third level hospitals or special dermosyphilopathic clinics) for screening and treatment. It seems that there is no sufficient awareness about this problem. It would be important to assess STD prevalence and to train health workers. Cultural barriers could also be investigated.
- Improving safe/clean practices during delivery. Practices could be greatly enhanced through the introduction of the WHO partograph. It is obvious that this should be accompanied by guidelines and instructions for use, and by proper training.
- Improving essential neonatal care and resuscitation practices. Guidelines and training should include the appropriate use of simple technologies (e.g. bag and mask), and simple practices such as drying the newborn baby to keep it warm. Guidelines and training for the initiation and support of exclusive breastfeeding, including the prohibition to separate the baby from the mother, are also necessary.
- Improving the use of essential drugs through simple standard case management guidelines and subsequent training.

National guidelines should also take into consideration the management of common obstetric complications and protocols for referral.

The Ministry of Health states that guidelines, protocols and task for doctors and midwives operating at primary health care and in second-level hospitals have already been developed in the last two years. If this is true, they were not found, except for a few exceptions, during the survey; and in any case these documents do not seem to be known and used, at least by the health workers who were interviewed. As guidelines and protocols constitute important requirements for improvement of the quality of care (and for this reason they are mentioned in all the points above), a working group on perinatal care from the Ministry of Health, with support from other agencies and organizations, should make an inventory of the available guidelines and should check them for quality (i.e. the evidence on which they are based) and consistency. Missing guidelines should be developed from scratch in due time, of course. Moreover, guidelines and

protocols serve the purpose for which they are developed only if they are disseminated and used, including their use for training; the working group should develop a workplan in this direction.

### *Equipment and supplies*

|                                                                                        |
|----------------------------------------------------------------------------------------|
| Ensure essential equipment and supplies for the activities described in the guidelines |
|----------------------------------------------------------------------------------------|

Quality of care can only be ensured by the availability of the essential equipment and supplies mentioned in the guidelines for the various obstetric and perinatal care activities. These include the drugs needed for the case management of the selected diseases and conditions, the equipment needed for antenatal care (e.g. blood pressure apparatus, stethoscope), for delivery care (e.g. aspirator, vacuum extractor, wall clock), neonatal care (e.g. bag and mask), family planning (e.g. contraceptives). But include also basic commodities such as light and clean water for which intersectoral action is needed. It is currently impossible to prepare lists of equipment and supplies to be acquired, because such lists should be based on inventories in all facilities. Furthermore, it is necessary to at least approve a draft of a national plan to estimate what is needed and at what level of care. It is hoped that this plan will be developed as soon as possible after this needs assessment, with clear indications about what activities should be implemented and by whom in maternity hospitals and health centres. It is easy to predict that some materials, if not already available, will be needed everywhere; this is for example the case for blood pressure materials and for neonatal bags and masks. But for other types of equipment it is better to wait for a national plan; the typical example, among those mentioned, is the vacuum extractor, which has to be acquired only for facilities where trained staff is meant to use it with a predetermined minimum frequency. Ultrasound machines are another example of equipment that should be acquired only after the development of a national plan.

### *Routine reporting system*

|                                              |
|----------------------------------------------|
| Adopt standard simple records and registers. |
|----------------------------------------------|

The use of a simple standard home-based maternal card (see above) is highly recommended. Its introduction should be accompanied by some standardisation of definitions; for instance, many health professionals still call nephropathy or toxæmia what is internationally known as pre-eclampsia. Coupled with simple registers for antenatal care, delivery care and neonatal care (that the Ministry of Health is apparently already developing, but are not used yet, at least from the findings of this survey), such a simple home-based record could form the basis for a routine reporting system that allows the periodic estimation of essential indicators. These would include the classic indicators of outcome (maternal and perinatal mortality plus some indicators of morbidity and health, such as eclampsia and breastfeeding) and some indicators of activities (coverage, types of delivery, some indicators of quality of care). A minimum set of maternal and child health indicators is suggested in a WHO document (Indicators to monitor maternal health goals; WHO/FHE/MSM/94.14). The Ministry of Health is already gathering and consolidating data for some of these indicators and the system may only need to be improved. It must be remembered, for example, that maternal mortality is very difficult to calculate and is underestimated also in countries such as France and the USA. If these countries make an effort to improve their reporting system, it is only obvious that Albania too will have to improve. Moreover, it must be remembered that for a reasonable estimate of the value of the indicators it is also important to get reliable data on denominators (population by district and catchment area). This might be particularly difficult at the moment in Albania due to internal and external migration of the population. Finally, indicators must be periodically analysed, interpreted and used to update the assessment of needs and the action plans.

## Annex A

### Some information about maternal and child health in Albania.

|                                                             |                     |
|-------------------------------------------------------------|---------------------|
| Total population (UNFPA, 1998)                              | 3,300,000           |
| Population under 15 years of age (UNFPA, 1998)              | 34%                 |
| Urban population (UNFPA, 1998)                              | 37%                 |
| GNP per capita (WB, 1993)                                   | 340 US\$            |
| Life expectancy at birth (WHO, 1997)                        | 71 years            |
| Crude birth rate (UNFPA, 1998)                              | 17 per 1000         |
| Adult literacy rate (both sexes, 1991-93)                   | 85%                 |
| Total births (MoH)                                          |                     |
| 1995                                                        | 72,081              |
| 1996                                                        | 68,352              |
| Births in health facilities (MoH, 1996)                     | 88%                 |
| Rate of low birth weight (<2500g) (MoH, 1996)               | 10%                 |
| Neonatal mortality rate (MoH)<br>(per 1000 live births)     |                     |
| 1995                                                        | 11.3 (22 in Tirana) |
| 1996                                                        | 10.8                |
| Causes of neonatal mortality (Tirana maternity, 1995)       |                     |
| prematurity                                                 | 37%                 |
| infections                                                  | 25%                 |
| asphyxia                                                    | 14%                 |
| other                                                       | 24%                 |
| Perinatal mortality rate (MoH)<br>(per 1000 live births)    |                     |
| 1995                                                        | 13.2                |
| 1996                                                        | 12.4                |
| Infant mortality rate per 1000 live births (WHO, 1997)      | 34                  |
| Maternal mortality ratio (MoH)<br>(per 100,000 live births) |                     |
| 1991                                                        | 29.7                |
| 1992                                                        | 25.1                |
| 1993                                                        | 22.8                |
| 1994                                                        | 40.6                |
| 1995                                                        | 29.5 (67 in Tirana) |
| 1996                                                        | 25.8                |
| Caesarean section rate (MoH, 1996)                          | 8% (21% in Tirana)  |

## **Annex B**

### Tables

**Table 1. Availability of essential care for obstetric complications in referral hospitals**

| Complication                                                        |        | District |      |      |      |      |      |
|---------------------------------------------------------------------|--------|----------|------|------|------|------|------|
|                                                                     |        | All      | 1    | 2    | 3    | 4    | 5    |
| Postpartum haemorrhage                                              |        |          |      |      |      |      |      |
| Services are provided                                               | FAC4E  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Ergometrine or oxytocin is available                                | FAC27A | 83%      | 100% | 100% | 100% | 0%   | 100% |
| IV kit is available                                                 | FAC15C | 100%     | 100% | 100% | 100% | 100% | 100% |
| IV solution available                                               | FAC29A | 100%     | 100% | 100% | 100% | 100% | 100% |
| Severe anaemia                                                      |        |          |      |      |      |      |      |
| Services are provided                                               | FAC4A  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Blood transfusion services available                                | FAC3K  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Haemoglobin testing available                                       | FAC6B  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Eclampsia                                                           |        |          |      |      |      |      |      |
| Services are provided                                               | FAC4D  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Urine protein testing available                                     | FAC6C  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Magnesium Sulphate or Diazepam is available                         | FAC24A | 83%      | 100% | 100% | 100% | 0%   | 100% |
| Hydralazine is available                                            | FAC23B | 17%      | 50%  | 0%   | 0%   | 0%   | 0%   |
| Obstructed or prolonged labour                                      |        |          |      |      |      |      |      |
| Vacuum extraction services provided                                 | FAC3E  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Caesarean section surgery is performed                              | FAC3L  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Supplies and equipment required for caesarean section are available | FAC14B | 100%     | 100% | 100% | 100% | 100% | 100% |
| Sepsis                                                              |        |          |      |      |      |      |      |
| Services are provided                                               | FAC4J  | 67%      | 100% | 0%   | 0%   | 100% | 100% |
| Benzylpenicillin available                                          | FAC19B | 100%     | 100% | 100% | 100% | 100% | 100% |
| Ampicillin is available                                             | FAC19A | 100%     | 100% | 100% | 100% | 100% | 100% |
| Abortion                                                            |        |          |      |      |      |      |      |
| Voluntary termination of pregnancy services are provided            | FAC3J  | 100%     | 100% | 100% | 100% | 100% | 100% |
| Complications are managed                                           | FAC4F  | 83%      | 100% | 0%   | 100% | 100% | 100% |
| Manual vacuum aspiration available                                  | FAC10G | 67%      | 100% | 0%   | 0%   | 100% | 100% |
| Neonatal resuscitation                                              |        |          |      |      |      |      |      |
| Bag and mask available                                              | FAC12C | 67%      | 100% | 100% | 100% | 0%   | 0%   |
| Number of facilities sampled                                        |        | 6        | 2    | 1    | 1    | 1    | 1    |

**Table 2. Total number of facilities and sample sizes, by facility type and district**

| District   | Facility type |         |               |         |          |         |
|------------|---------------|---------|---------------|---------|----------|---------|
|            | Health post   |         | Health centre |         | Hospital |         |
|            | Total         | Sampled | Total         | Sampled | Total    | Sampled |
| District 1 | 70            | 0       | 30            | 4       | 3        | 2       |
| District 2 | 60            | 0       | 36            | 2       | 1        | 1       |
| District 3 | 60            | 0       | 48            | 2       | 2        | 1       |
| District 4 | 50            | 0       | 29            | 2       | 1        | 1       |
| District 5 | 100           | 0       | 44            | 2       | 2        | 1       |
| Total      | 250           | 0       | 187           | 12      | 9        | 6       |

**Table 4. Sample size, by survey form**

| <i>Survey form</i> |                                           | <i>Actual number</i> |
|--------------------|-------------------------------------------|----------------------|
| DHT                | District health team interview            | 5                    |
| FAC                | Facility management                       | 18                   |
| NMW                | Interview with midwife or maternity nurse | 37                   |
| ANC                | Antenatal client exit interview           | 57                   |
| NDR                | Normal delivery record review             | 239                  |
| SOV                | Surveyor observations                     | 35                   |

**Table B1. Knowledge by antenatal clients of warning signs or problems during pregnancy, by facility type**

| <i>Warning Sign</i>                                                    | <i>Total</i> |
|------------------------------------------------------------------------|--------------|
| Previous bad obstetric history / abdominal scars / previous stillbirth | 23%          |
| Hypertension / headache / swelling / fits                              | 68%          |
| Anaemia / pallor / fatigue / breathlessness                            | 28%          |
| Cessation of fetal movement / baby does not move                       | 30%          |
| Abnormal lie / position of fetus                                       | 14%          |
| Sepsis / foul smelling discharge / postpartum abdominal pain           | 35%          |
| Light bleeding / spotting                                              | 32%          |
| Haemorrhage / heavy bleeding                                           | 72%          |
| Multiple pregnancy / large abdomen                                     | 5%           |
| Obstructed / prolonged labour / "sun set two times"                    | 4%           |
| Persistent headache, swelling, etc.                                    | 2%           |

**Table C1. Institutional delivery coverage rates, by facility type and district**

| <i>Facility type</i> | <i>Expected number of births in catchment area</i> | <i>Number of deliveries in facilities sampled</i> | <i>Institutional delivery coverage rate</i> |
|----------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------|
| <i>District</i>      |                                                    |                                                   |                                             |
| Health centre        | 4526                                               | 2116                                              | 47%                                         |
| Hospital             | 26172                                              | 21357                                             | 82%                                         |
| District 1           | 11200                                              | 10534                                             | 94%                                         |
| District 2           | 2700                                               | 3999                                              | 114%                                        |
| District 3           | 6080                                               | 3329                                              | 55%                                         |
| District 4           | 6540                                               | 3229                                              | 50%                                         |
| District 5           | 4100                                               | 2400                                              | 58%                                         |

**Table C2. Provision of maternity services, by facility type**

| Service                                             | Facility type |          |       |
|-----------------------------------------------------|---------------|----------|-------|
|                                                     | HC            | Hospital | Total |
| Antenatal care                                      | 100%          | 67%      | 89%   |
| Tetanus toxoid immunization                         | 100%          | 50%      | 83%   |
| Management of sexually transmitted diseases         | 75%           | 33%      | 61%   |
| Normal delivery care                                | 100%          | 100%     | 100%  |
| Vacuum extraction delivery                          | 8%            | 100%     | 39%   |
| "Rooming in" for postpartum care of mother and baby | 75%           | 67%      | 72%   |
| Postpartum check up                                 | 100%          | 83%      | 94%   |
| Family planning services                            | 67%           | 100%     | 72%   |
| Voluntary termination of pregnancy                  | 0%            | 100%     | 33%   |
| Blood transfusion or replacement                    | 0%            | 100%     | 33%   |
| Caesarean section                                   | 0%            | 100%     | 33%   |
| Number of facilities sampled                        | 12            | 6        | 18    |

**Table C7. Timing of first antenatal care visit, by facility type**

| Timing of first antenatal visit | Facility type |          |
|---------------------------------|---------------|----------|
|                                 | Health centre | Hospital |
| Less than 3 months              | 40%           | 50%      |
| 3-6 months                      | 40%           | 44%      |
| 6 months or more                | 20%           | 6%       |
| Number of clients sampled       | 5             | 50       |

**Table C8. Antenatal services received this visit, by facility type**

| Services received               | Facility type |          |       |
|---------------------------------|---------------|----------|-------|
|                                 | Health centre | Hospital | Total |
| Blood pressure checked          | 80%           | 83%      | 83%   |
| Abdominal examination performed | 100%          | 93%      | 93%   |
| Fetal heart beat monitored      | 60%           | 54%      | 54%   |
| Number of clients sampled       | 5             | 52       | 57    |

**Table C9. Antenatal activities carried out during any visit this pregnancy, by health facility**

| <i>Procedure conducted</i>                                        | <i>Facility type</i> |          |       |
|-------------------------------------------------------------------|----------------------|----------|-------|
|                                                                   | HC                   | Hospital | Total |
| History taken                                                     | 100%                 | 91%      | 92%   |
| Blood sample drawn                                                | 67%                  | 85%      | 83%   |
| Urine sample / urine protein analysis                             | 67%                  | 91%      | 89%   |
| Iron supplements given                                            | 33%                  | 24%      | 25%   |
| Advice given about diet and nutrition                             | 67%                  | 82%      | 81%   |
| Place of delivery discussed                                       | 0%                   | 76%      | 69%   |
| Benefit of delivery in the health facility discussed              | 33%                  | 85%      | 81%   |
| Advice given on what to do if there is a problem during pregnancy | 33%                  | 61%      | 58%   |
| Family planning or child spacing discussed                        | 67%                  | 39%      | 42%   |
| HIV/AIDS and other STDs discussed                                 | 0%                   | 36%      | 33%   |
| Advice given on child care                                        | 33%                  | 76%      | 72%   |
| Emergency transport discussed                                     | 67%                  | 76%      | 75%   |
| Number of clients sampled                                         | 3                    | 33       | 36    |

**Table C10. Quality of antenatal care as measured by the level of provider-client communication, by facility type**

| <i>Indicator of antenatal quality of care</i>                                      | <i>Facility type</i> |            |            |
|------------------------------------------------------------------------------------|----------------------|------------|------------|
|                                                                                    | Health centre        | Hospital   | Total      |
| Average length of time spent with health care provider (excluding waiting time)    | 7 minutes            | 10 minutes | 10 minutes |
| Percentage who met privately with health care provider                             | 20%                  | 67%        | 63%        |
| Percentage who received briefing on progress of pregnancy during visit             | 100%                 | 90%        | 91%        |
| Percentage who reported that "staff answered questions in a way that I understood" | 10%                  | 100%       | 100%       |
| Percentage who reported that staff set another appointment                         | 80%                  | 87%        | 86%        |
| Number of clients sampled                                                          | 5                    | 52         | 57         |

**Table C12. Qualification of staff who attended delivery in hospital**

| <i>Qualification</i>                      | <i>Facility type: Hospital</i> |
|-------------------------------------------|--------------------------------|
| Nurse or midwife                          | 22%                            |
| Doctor or medical officer                 | 78%                            |
| Ward or patient attendant                 | 0%                             |
| Medical assistant                         | 0%                             |
| TBA who attended delivery at facility     | 0%                             |
| Mother or other family member at facility | 0%                             |
| Number of clients sampled                 | 32                             |

**Table C13. Assessment of overall quality of normal delivery practice, using five indicators of performance**

| <i>Action</i>                                    | <i>Norm</i>                             | <i>Unacceptable/<br/>substandard practice</i> |
|--------------------------------------------------|-----------------------------------------|-----------------------------------------------|
| Vaginal examination                              | at least 4-hourly                       | 14%                                           |
| Fetal heartbeat monitoring                       | at least hourly                         | 40%                                           |
| Blood pressure monitoring                        | at least 4-hourly                       | 34%                                           |
| Birth weight recorded on card                    | should always<br>be recorded<br>on card | 0%                                            |
| Assessment of condition of baby recorded on card |                                         | 33%                                           |
| Antenatal care information recorded on card      |                                         | 99%                                           |

**Table C17. Provision of services for management of complications, by facility type (last six months)**

| <i>Complication</i>          | <i>Facility type</i> |          |       |
|------------------------------|----------------------|----------|-------|
|                              | Health centre        | Hospital | Total |
| Severe anaemia               | 0%                   | 100%     | 33%   |
| Antepartum haemorrhage       | 0%                   | 100%     | 33%   |
| Pre-eclampsia                | 0%                   | 100%     | 33%   |
| Eclampsia                    | 0%                   | 100%     | 33%   |
| Postpartum haemorrhage       | 50%                  | 100%     | 66%   |
| Abortion complications       | 8%                   | 83%      | 33%   |
| Retained placenta            | 25%                  | 83%      | 44%   |
| Breech presentation/delivery | 33%                  | 83%      | 50%   |
| Sepsis                       | 0%                   | 67%      | 22%   |
| Ectopic pregnancy            | 8%                   | 83%      | 33%   |
| Ruptured uterus              | 0%                   | 67%      | 22%   |
| Number of facilities sampled | 12                   | 6        | 18    |

**Table C18. Service provision at nights and at weekends, by facility type**

| <i>Service</i>                                                                              | <i>Facility type</i> |          |       |
|---------------------------------------------------------------------------------------------|----------------------|----------|-------|
|                                                                                             | Health centre        | Hospital | Total |
| Maternity services are available at night and at weekends                                   | 83%                  | 100%     | 89%   |
| On-call services for care for complicated deliveries are available at night and at weekends | 0%                   | 100%     | 33%   |
| On-call services for caesarean section are available at night and at weekends               | 0%                   | 100%     | 33%   |
| Number of facilities sampled                                                                | 12                   | 6        | 18    |

**Table C24. Timing after delivery of postpartum visit, as recommended by nurses/midwives**

| Timing of postpartum visit                 | District |     |     |      |     |       |
|--------------------------------------------|----------|-----|-----|------|-----|-------|
|                                            | 1        | 2   | 3   | 4    | 5   | Total |
| During first week                          | 46%      | 72% | 29% | 100% | 60% | 60%   |
| During first 6 weeks                       | 9%       | 0%  | 0%  | 0%   | 0%  | 3%    |
| Only if mother is ill / in case of problem | 45%      | 14% | 0%  | 0%   | 0%  | 16%   |
| Never                                      | 0%       | 14% | 71% | 0%   | 40% | 22%   |
| Number of midwives/nurses sampled          | 11       | 7   | 7   | 7    | 5   | 37    |

**Table C28. Family planning method mix, by facility type (last 3 months)**

| Commodity                                                                              | Facility type |          |       |
|----------------------------------------------------------------------------------------|---------------|----------|-------|
|                                                                                        | Health centre | Hospital | Total |
| Oral contraceptives: combined high oestrogen or combined low oestrogen or progesterone | 100%          | 83%      | 89%   |
| Depot medroxyprogesterone acetate or norethisterone enanthate                          | 100%          | 83%      | 89%   |
| Condoms                                                                                | 100%          | 66%      | 78%   |
| IUD                                                                                    | 67%           | 83%      | 78%   |
| Spermicide: foam tablet, foam, jelly or cream                                          | 0%            | 50%      | 33%   |
| Sterilization: female                                                                  | ?             | ?        | ?     |
| Sterilization: male                                                                    | ?             | ?        | ?     |
| Number of FP client records sampled                                                    | 3             | 6        | 9     |

**Table C34. Indicators of STD services provision, by facility type**

| Indicator                                                                     | Facility type |          |       |
|-------------------------------------------------------------------------------|---------------|----------|-------|
|                                                                               | Health centre | Hospital | Total |
| STD treatment is provided in facility                                         | 75%           | 33%      | 61%   |
| Syphilis testing is done in facility                                          | 0%            | 0%       | 0%    |
| Syphilis test kits are available in facility                                  | 0%            | 0%       | 0%    |
| Educational materials on STDs and HIV/AIDS are available                      | 0%            | 0%       | 0%    |
| Antenatal clients are given information and education about STDs and HIV/AIDS | 0%            | 44%      | 40%   |
| Number of facilities sampled                                                  | 12            | 6        | 18    |
| All FP equipment is available and satisfactory                                | 88%           | 83%      | 86%   |
| Number of facilities sampled                                                  | 8             | 6        | 14    |

**Table D2. Births, maternal and perinatal deaths, and still births in facilities by facility type**

| Indicator             | Facility type |            |          |            |                |            |
|-----------------------|---------------|------------|----------|------------|----------------|------------|
|                       | Health centre |            | Hospital |            | All Facilities |            |
|                       | Number        | Ratio/Rate | Number   | Ratio/Rate | Number         | Ratio/Rate |
| Total births          | 2116          |            | 21375    |            | 23491          |            |
| Live births           | 2111          |            | 21146    |            | 23257          |            |
| Cesarean sections     | 0             | 0          | 3748     | 17,5%      | 3748           | 17,5%      |
| Maternal deaths       | 0             | 0          | 7        | 33/100.000 | 7              | 33/100.000 |
| Total still births    | 5             | 2,4/1000   | 229      | 11/1000    | 234            | 10/1000    |
| Early neonatal deaths | 1             | 0,5/1000   | 225      | 10,6/1000  | 226            | 9,7/1000   |
| Perinatal deaths      | 6             | 2,8/1000   | 324      | 15,1/1000  | 330            | 14/1000    |

**Table D3. Births, maternal and perinatal deaths, and still births in facilities by district**

| Indicator                     | District 1 |             | District 2 |             | District 3 |             | District 4 |             | District 5 |       | Total | Rate |
|-------------------------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------|-------|------|
|                               | Nº         | Ratio /Rate | Nº         | Ratio /Rate | Nº         | Ratio /Rate | Nº         | Ratio /Rate | Nº         |       |       |      |
| Total births                  | 10534      |             | 3999       |             | 3329       |             | 3229       |             | 2400       |       | 23491 |      |
| Live births                   | 10408      |             | 3966       |             | 3288       |             | 3210       |             | 2385       |       | 23257 |      |
| Cesarean section              | 2124       | 20%         | 387        | 9,7%        | 463        | 13,9%       | 427        | 12,9%       | 357        | 14,8% | 3748  |      |
| Maternal deaths x100.000      | 6          | 57          | 0          | 0%          | 1          | 30          | 0          | 0%          | 0          | 0%    | 7     | 29,7 |
| Total still births x1000      | 126        | 12          | 33         | 8,2         | 41         | 12,3        | 19         | 6           | 15         | 6,2   | 234   | 10   |
| Early neonatal deaths (x1000) | 140        | 13,4        | 24         | 6           | NA         | NA          | 34         | 10,5        | 15         | 6,2   | 96    | 4    |
| Perinatal deaths x1000        | 149        | 14          | 57         | 14,2        | 41         | 12,3        | 53         | 16,4        | 30         | 12,5  | 330   | 15,4 |

**Table D4. Monitoring of performance at health centres, by district**

| District                     | Delivery coverage rate quoted during facility visit |      |
|------------------------------|-----------------------------------------------------|------|
|                              | Realistic estimate quoted                           | Mean |
| District 1                   | 53,1%                                               | 0.0% |
| District 2                   | 85%                                                 | 0.0% |
| District 3                   | 36,2%                                               | 0.0% |
| District 4                   | 41,3%                                               | 0.0% |
| District 5                   | 46%                                                 | 0.0% |
| All health centres sampled   | 46,8%                                               | 0.0% |
| Nº of health centres sampled | 12                                                  |      |

**Table D5. Monitoring activities in districts sampled**

| Type of monitoring activity                                                             | Frequency |           |       |
|-----------------------------------------------------------------------------------------|-----------|-----------|-------|
|                                                                                         | Always    | Sometimes | Never |
| Maternal deaths are routinely reported from the health facilities to the district level | 5 (100%)  | 0%        | 0%    |
| Maternal deaths are routinely reported from districts to the national level             | 5(100)%   | 0%        | 0%    |
| Standard antenatal records are used in all facilities in the district                   | 1 (20%)   | 4 (80%)   | 0%    |
| Standard delivery records are used in all facilities in the district                    | 0%        | 5 (100%)  | 0%    |
| Confidential enquiries or audits are routinely done following maternal deaths           | 5 (100%)  | 0%        | 0%    |

**Table D6. Status of national maternal health personnel (1990)**

| Position                                                      | Posts occupied |                      |
|---------------------------------------------------------------|----------------|----------------------|
|                                                               | Number         | x 100,000 population |
| Registered midwives and nurse/midwives (fully qualified)      | 0              | 406                  |
| Enrolled midwives and nurse/midwives (limited qualifications) | 0              | 0.0                  |
| Physicians (both generalist and obstetrician/gynaecologist)   | 0              | 177                  |
| Anaesthetists and nurse-anaesthetists                         | 0              | 0.0                  |
| Pharmacists                                                   | 0              | 0.0                  |

**Table D7. Maternal health posts occupied per 100,000 population, by district**

| Position                                                      | District |     |     |      |     |      |
|---------------------------------------------------------------|----------|-----|-----|------|-----|------|
|                                                               | 1        | 2   | 3   | 4    | 5   | All  |
| Registered midwives and nurse/midwives (fully qualified)      | 26       | 80  | 45  | 159  | 37  | 56.8 |
| Enrolled midwives and nurse/midwives (limited qualifications) | 20       | 136 | 77  | 108  | 62  | 64   |
| Physicians (both generalist and obstetrician/gynaecologist)   | 62       | 46  | 44  | 51   | 38  | 51.4 |
| Anaesthetists and nurse-anaesthetists                         | 8        | 6   | 2.7 | 11.4 | 1.8 | 6.4  |
| Pharmacists                                                   | 2.6      | 5.5 | 1.8 | 1    | 3   | 2.7  |

**Table D8. Number of health workers by districts and by facility type surveyed**

| <i>Category of Personnel</i>                                  | <i>Total number in districts</i> | <i>N° in facilities surveyed</i> |
|---------------------------------------------------------------|----------------------------------|----------------------------------|
| Registered midwives and nurse/midwives (fully qualified)      | 853                              | 568                              |
| Enrolled midwives and nurse/midwives (limited qualifications) | 960                              | 84                               |
| Physicians (both generalist and obstetrician/gynaecologist)   | 772                              | 164                              |
| Anaesthetists and nurse-anaesthetists                         | 97                               | 33                               |
| Pharmacists                                                   | 41                               | 8                                |

**Table D9. Midwifery staff trained in past year, by district**

| <i>District</i> | <i>Midwifery staff training</i> |                                      |                                                       |
|-----------------|---------------------------------|--------------------------------------|-------------------------------------------------------|
|                 | Number of staff                 | Number of staff trained in past year | Last training offered in district, as reported by DHT |
| District 1      | 156                             | 118                                  | 1mo                                                   |
| District 2      | 160                             | 0                                    | 5y                                                    |
| District 3      | 100                             | 30                                   | 1y                                                    |
| District 4      | 335                             | 248                                  | 6mo                                                   |
| District 5      | 102                             | 80                                   | 1mo                                                   |
| All districts   | 5                               | 476                                  |                                                       |

**Table D10. Last time nurse/midwife received training in midwifery skills, by facility type**

| <i>Last training</i>              | <i>Facility type</i> |          |       |
|-----------------------------------|----------------------|----------|-------|
|                                   | Health centre        | Hospital | Total |
| In the past week                  | 0%                   | 13%      | 8%    |
| In the past month                 | 23%                  | 21%      | 22%   |
| In the past 6 months              | 15%                  | 8%       | 11%   |
| In the past year                  | 8%                   | 13%      | 11%   |
| In the past 5 years               | 15%                  | 0%       | 5%    |
| 5 years ago or longer             | 15%                  | 8%       | 11%   |
| Never                             | 23%                  | 38%      | 32%   |
| Number of midwives/nurses sampled | 13                   | 24       | 37    |

**Table D11. Last time any training in family planning skills was provided for maternal health workers in district**

| <i>Last training</i>        |         |
|-----------------------------|---------|
| In the past month           | 2 (40%) |
| In the past 6 months        | 1(20%)  |
| In the past year            | 1(20%)  |
| In the past 5 years         | 1(20%)  |
| 5 years ago or longer       | 0%      |
| Never                       | 0%      |
| Number of districts sampled | 5       |

**Table D12. Last time nurse/midwife received training in family planning skills, by facility type**

| <i>Last training</i>              | <i>Facility type</i> |          |       |
|-----------------------------------|----------------------|----------|-------|
|                                   | Health centre        | Hospital | Total |
| In the past week                  | 0%                   | 4%       | 3%    |
| In the past month                 | 46%                  | 0%       | 16%   |
| In the past 6 months              | 8%                   | 21%      | 16%   |
| In the past year                  | 0                    | 8%       | 5%    |
| In the past 5 years               | 8%                   | 0%       | 3%    |
| 5 years ago or longer             | 0%                   | 0%       | 0%    |
| I don't know                      | 0%                   | 8%       | 5%    |
| Never                             | 39%                  | 58%      | 51%   |
| Number of nurse/ midwives sampled | 13                   | 24       | 37    |

**Table D13. Last training in communication and counselling skills provided for maternal health workers in district**

| <i>Last training</i>        |         |
|-----------------------------|---------|
| In the past month           | 0%      |
| In the past 6 months        | 2 (40%) |
| In the past year            | 0       |
| In the past 5 years         | 1 (20%) |
| 5 years ago or longer       | 0       |
| Never                       | 2 (40%) |
| Number of districts sampled | 5       |

**Table D14. Last time health personnel attended delivery, by facility type**

| Last delivery                     | Facility type |          |       |
|-----------------------------------|---------------|----------|-------|
|                                   | HC            | Hospital | Total |
| In the past week                  | 54%           | 63%      | 60%   |
| In the past month                 | 31%           | 25%      | 27%   |
| In the past 6 months              | 8%            | 0%       | 3%    |
| 6 months ago or longer            | 0%            | 13%      | 8%    |
| Never                             | 8%            | 0%       | 3%    |
| Number of nurses/midwives sampled | 13            | 24       | 374   |

**Table D15. Recent nurse/midwife practice in life-saving skills, by facility type**

| Complication managed within past 6 months | Facility type |          |       |
|-------------------------------------------|---------------|----------|-------|
|                                           | Health centre | Hospital | Total |
| Postpartum haemorrhage                    | 46%           | 75%      | 65%   |
| Obstructed labour                         | 15%           | 71%      | 51%   |
| Puerperal sepsis                          | 8%            | 17%      | 14%   |
| Eclampsia                                 | 8%            | 33%      | 24%   |
| Abortion complications                    | 31%           | 29%      | 30%   |
| Number of nurses/midwives sampled         | 13            | 24       | 37    |

**Table D18. Last time health personnel received supervisory support, by facility type**

| Last visit                        | Facility type |          |       |
|-----------------------------------|---------------|----------|-------|
|                                   | Health centre | Hospital | Total |
| In the past week                  | 61%           | 50%      | 54%   |
| In the past month                 | 15%           | 29%      | 24%   |
| Never                             | 23%           | 21%      | 22%   |
| Number of nurses/midwives sampled | 13            | 24       | 37    |

**Table D19. Last time personnel received supervisory support, by district**

| Last supervisory visit                                             | District |     |     |     |     |       |
|--------------------------------------------------------------------|----------|-----|-----|-----|-----|-------|
|                                                                    | 1        | 2   | 3   | 4   | 5   | Total |
| Actual supervision reported by staff                               |          |     |     |     |     |       |
| In the past week                                                   | 46%      | 71% | 71% | 43% | 40% | 54%   |
| In the past month                                                  | 27%      | 14% | 0%  | 43% | 40% | 24%   |
| Never                                                              | 27%      | 14% | 29% | 14% | 20% | 22%   |
| Number sampled                                                     | 11       | 7   | 7   | 7   | 5   | 37    |
| Supervision plan for District, as reported by District health team |          |     |     |     |     |       |
| Plan                                                               | 0        | 0   | 0   | 0   | 0   | 0     |

**Table D21. Availability of basic maternity equipment, by facility type**

| Equipment                                                   | Facility type |          |       |
|-------------------------------------------------------------|---------------|----------|-------|
|                                                             | HC            | Hospital | Total |
| <i>Basic maternity equipment available and satisfactory</i> |               |          |       |
| Blood pressure apparatus                                    | 58%           | 83%      | 67%   |
| Stethoscope                                                 | 42%           | 33%      | 39%   |
| Infant weighing scale                                       | 75%           | 83%      | 78%   |
| Fetal stethoscope                                           | 100%          | 100%     | 100%  |
| Sterilizer                                                  | 75%           | 50%      | 67%   |
| Clinical oral thermometer                                   | 58%           | 50%      | 56%   |
| Manual vacuum aspirator (MVA)                               | 17%           | 67%      | 33%   |
| Protective clothing                                         | 8%            | 0%       | 6%    |
| Clinical guidelines or flow charts                          | 25%           | 0%       | 17%   |
| <i>Delivery equipment available and satisfactory</i>        |               |          |       |
| Speculum                                                    | 67%           | 33%      | 28%   |
| Vacuum extractor                                            | 0%            | 0%       | 0%    |
| Obstetric forceps                                           | 0%            | 100%     | 33%   |
| Number of facilities sampled                                | 12            | 6        | 18    |

**Table D22. Availability of minimum equipment for assisted delivery, by facility type**

| Minimum equipment available and satisfactory | Facility type |          |       |
|----------------------------------------------|---------------|----------|-------|
|                                              | HC            | Hospital | Total |
| Scissors                                     | 50%           | 50%      | 50%   |
| Suture needles and suture material           | 58%           | 83%      | 67%   |
| Needle holder, long                          | 8%            | 75%      | 22%   |
| Number of facilities sampled                 | 12            | 6        | 18    |

**Table D23. Availability of equipment and supplies for care of the neonate, by facility type**

| Equipment available and satisfactory    | Facility type |          |       |
|-----------------------------------------|---------------|----------|-------|
|                                         | Health centre | Hospital | Total |
| Cloth or towel to dry baby              | 75%           | 50%      | 67%   |
| Blanket to wrap baby                    | 67%           | 33%      | 56%   |
| Bag and mask for neonatal resuscitation | 42%           | 67%      | 50%   |
| Number of facilities sampled            | 12            | 6        | 18    |

**Table D24. Availability of equipment for caesarean section and FP, by facility type**

| Equipment available and satisfactory       | Facility type |          |       |
|--------------------------------------------|---------------|----------|-------|
|                                            | Health centre | Hospital | Total |
| All equipment needed for caesarean section | 0%            | 100%     | 33.3% |
| All equipment needed for FP services       | 67%           | 100%     | 78%   |
| Number of facilities sampled               | 12            | 6        | 18    |

**Table D25. Availability of consumable supplies, by facility type**

| Consumable supplies seen at facility                     | Facility type |          |       |
|----------------------------------------------------------|---------------|----------|-------|
|                                                          | HC            | Hospital | Total |
| Gloves                                                   | 100%          | 100%     | 100%  |
| Disposable syringes and needles                          | 83%           | 83%      | 83%   |
| IV kit                                                   | 58%           | 100%     | 72%   |
| Blank "labourgraphs" or "partographs"                    | 0%            | 0%       | 0%    |
| Blank antenatal client cards                             | 75%           | 100%     | 83%   |
| Cord ties                                                | 100%          | 100%     | 100%  |
| Blood giving sets                                        | 0%            | 50%      | 0%    |
| Syphilis test kits                                       | 0%            | 0%       | 0%    |
| Urine dip sticks or urine protein analysis test supplies | 67%           | 100%     | 78%   |
| Number of facilities sampled                             | 12            | 6        | 18    |

**Table D26. Method for estimation of drug needs**

| Estimation method                                                          | Level              |              |
|----------------------------------------------------------------------------|--------------------|--------------|
|                                                                            | For district needs | For HC needs |
| Order based on consumption                                                 | 1 (20%)            | 1 (20%)      |
| Order based on estimated need<br>(standard treatment and morbidity method) | 2 (40%)            | 2 (40%)      |
| Order the same as last time                                                | 1 (20%)            | 1 (20%)      |
| Order two times what is needed                                             | 1 (20%)            | 1 (20%)      |
| Never order drugs, the shipments or kits arrive                            | 0%                 | 0%           |
| Other                                                                      | 0%                 | 0%           |
| Number of districts sampled                                                | 5                  | 0            |

**Table D27. Timing of drug ordering**

| Rationale for timing                                 | Level                                          |                                                     |
|------------------------------------------------------|------------------------------------------------|-----------------------------------------------------|
|                                                      | Quantification<br>method for district<br>needs | Quantification<br>method for health<br>centre needs |
| Order same time each week/month                      | 4 (80%)                                        | 2 (40%)                                             |
| Order whenever stocks reach the "re-order level"     | 0%                                             | 2                                                   |
| Re-order when supply runs out                        | 1 (20%)                                        | 1 (20%)                                             |
| Never order drugs, the shipments come or kits arrive | 0%                                             | 0%                                                  |
| Other                                                | 0%                                             | 0%                                                  |
| Number of districts sampled                          | 5                                              | 5                                                   |

**Table D28. Anti-infective drugs for maternity care, by facility type**

| Drug in stock                                                                                        | Facility type |          |       |
|------------------------------------------------------------------------------------------------------|---------------|----------|-------|
|                                                                                                      | HC            | Hospital | Total |
| <i>Anti-infective drugs: antibacterial (mother)</i>                                                  |               |          |       |
| Ampicillin (capsules or injection)                                                                   | 8%            | 100%     | 39%   |
| Benzathine penicillin (injection) or benzylpenicillin (injection) or procaine penicillin (injection) | 25%           | 100%     | 50%   |
| Ceftriaxone (injection) or ciprofloxacin (tablet)                                                    | NA            | 67%      | 0%    |
| Gentamicin (injection) or kanamycin (injection)                                                      | NA            | 83%      | 0%    |
| Sulfamethoxazole + trimethoprim (tablets)                                                            | 17%           | 50%      | 28%   |
| <i>Anti-infective drugs: antibacterial (neonate)</i>                                                 |               |          |       |
| Tetracycline (ointment) or silver nitrate (eye drops)                                                | 0%            | 0%       | 0%    |
| Number of facilities sampled                                                                         | 12            | 6        | 18    |

**Table D29. Drugs for basic maternity care, by facility type**

| Drug in stock                                     | Facility type |          |       |
|---------------------------------------------------|---------------|----------|-------|
|                                                   | HC            | Hospital | Total |
| <i>Anaesthetics: local</i>                        |               |          |       |
| Lidocaine 2% or other                             | 33%           | 100%     | 56%   |
| <i>Analgesics</i>                                 |               |          |       |
| Pethidine                                         | NA            | 50%      | 0%    |
| <i>Antianaemia drugs</i>                          |               |          |       |
| Ferrous salt + folic acid (combined or separate)  | 17%           | 67%      | 33%   |
| <i>Immunologicals: vaccines</i>                   |               |          |       |
| Tetanus toxoid (injection) stored in refrigerator | 83%           | 17%      | 61%   |
| <i>Disinfectants and antiseptics</i>              |               |          |       |
| Chlorhexidine or surgical spirit or any other     | 100%          | 100%     | 100%  |
| Number of facilities sampled                      | 12            | 6        | 18    |

**Table D30. Drugs for care of complications, by facility type**

| Drug in stock                                                         | Facility type |          |       |
|-----------------------------------------------------------------------|---------------|----------|-------|
|                                                                       | HC            | Hospital | Total |
| <i>Anaesthetics: general</i>                                          |               |          |       |
| Nitrous oxide or other general anaesthetic agent                      | NA            | 100%     |       |
| Ketamine (injection)                                                  | NA            | 100%     |       |
| <i>Anticonvulsive drugs</i>                                           |               |          |       |
| Magnesium sulphate or Diazepam injection                              | 83%           | 83%      | 83%   |
| <i>Antihypertensive drugs</i>                                         |               |          |       |
| Methyldopa (Tablets) or Propranolol (Tablets)                         | 17%           | 33%      | 22%   |
| Hydralazine (injection)                                               | 0%            | 17%      | 6%    |
| <i>Oxytocics</i>                                                      |               |          |       |
| Ergometrine (injection) or Oxytocin (injection)                       | 75%           | 83%      | 78%   |
| <i>Intravenous solutions</i>                                          |               |          |       |
| Water for injections or Sodium lactate "Ringer's" solution or Glucose | 58%           | 100%     | 72%   |
| Number of facilities sampled                                          | 12            | 6        | 18    |

**Table D31. Family planning commodities, by facility type**

| Commodity in stock                   | Facility type |          |       |
|--------------------------------------|---------------|----------|-------|
|                                      | HC            | Hospital | Total |
| Oral contraceptives (any type)       | 88%           | 83%      | 86%   |
| Injectable contraceptives (any type) | 88%           | 83%      | 86%   |
| Condoms                              | 88%           | 67%      | 77%   |
| IUCD / IUD                           | 63%           | 67%      | 64%   |
| Number of facilities sampled         | 8             | 6        | 14    |

**Table D32. Facilities in districts studied**

| Facility type | Districts population | Catchment population |
|---------------|----------------------|----------------------|
| District 1    | 600.000              | 624.700              |
| District 2    | 200.000              | 150.800              |
| District 3    | 220.000              | 338.000              |
| District 4    | 210.000              | 363.500              |
| District 5    | 270.000              | 228.492              |
| Total         | 1.500.000            | 1.705.492            |

**Table D33. Estimated maternity bed occupancy rate**

| Facility type<br>District | Number of<br>facilities per<br>100,000 population | Average total<br>number of beds<br>per facility | Average number of<br>maternity beds per<br>facility | Maternity bed<br>occupancy rate |
|---------------------------|---------------------------------------------------|-------------------------------------------------|-----------------------------------------------------|---------------------------------|
| Health centre             | 4,7                                               | 10,1                                            | 6,8                                                 | 14%                             |
| Hospital                  | 0,4                                               | 249,1                                           | 128,8                                               | 15%                             |
| District 1                | 0,96                                              | 79,1                                            | 72,3                                                | 13%                             |
| District 2                | 0,19                                              | 44,3                                            | 23,6                                                | 31%                             |
| District 3                | 0,8                                               | 47,6                                            | 41,6                                                | 15%                             |
| District 4                | 0,8                                               | 145,3                                           | 44,3                                                | 13%                             |
| District 5                | 1,3                                               | 143,3                                           | 30,6                                                | 14%                             |
| All facilities            | 1                                                 | 89,8                                            | 47,5                                                | 15%                             |

**Table D34. Physical infrastructure for maternity care, by facility type**

| Infrastructure                                  | Facility type |          |       |
|-------------------------------------------------|---------------|----------|-------|
|                                                 | Health centre | Hospital | Total |
| Examination room                                | 83%           | 33%      | 67%   |
| Table and stool for gynaecological examinations | 58%           | 50%      | 57%   |
| Storage area - for drugs and other supplies     | 67%           | 17%      | 50%   |
| Toilet facilities                               | 58%           | 33%      | 50%   |
| Delivery/labour room with bed and lighting      | 50%           | 50%      | 50%   |
| Refrigerator                                    | 67%           | 50%      | 61%   |
| Water supply                                    | 67%           | 50%      | 61%   |
| Telephone or radio transmitter                  | 8%            | 50%      | 22%   |
| Ambulance or vehicle for referral               | 17%           | 33%      | 22%   |
| Number of facilities sampled                    | 12            | 6        | 18    |

**Table D36. Knowledge by nurses/midwives of warning signs and symptoms of pregnancy, delivery and puerperium which prompt referral**

| Warning signs recalled                                                 | Facility type |          |
|------------------------------------------------------------------------|---------------|----------|
|                                                                        | HC            | Hospital |
| Previous bad obstetric history / abdominal scars / previous stillbirth | 46%           | 33%      |
| Hypertension / headache / swelling / fits                              | 91%           | 93%      |
| Anaemia / pallor / fatigue / breathlessness                            | 54%           | 40%      |
| Cessation of fetal movement / baby does not move                       | 36%           | 40%      |
| Abnormal lie / position of fetus                                       | 91%           | 40%      |
| Sepsis / foul smelling discharge / postpartum abdominal pain           | 18%           | 27%      |
| Light bleeding / spotting                                              | 9%            | 47%      |
| Haemorrhage / heavy bleeding                                           | 64%           | 87%      |
| Multiple pregnancy / large abdomen                                     | 27%           | 7%       |
| obstructed / prolonged labour / "sun set two times"                    | 27%           | 33%      |
| Number of midwives/nurses sampled                                      | 11            | 15       |

**Table D38. Referral indicators for health centres, by district**

| Referral indicators                                                                   | District |        |        |        |        |        |
|---------------------------------------------------------------------------------------|----------|--------|--------|--------|--------|--------|
|                                                                                       | 1        | 2      | 3      | 4      | 5      | Total  |
| Mean emergency referral time                                                          | 1 hour   | 1 hour | 1 hour | 1 hour | 1 hour | 1 hour |
| Maximum emergency referral time                                                       | 1 hour   | 1 hour | 1 hour | 1 hour | 1 hour | 1 hour |
| Percentage of facilities with referral time of less than 2 hours                      | 100%     | 100%   | 100%   | 100%   | 100%   | 100%   |
| Percentage of facilities within 10 km of referral facility                            | 0%       | 0%     | 50%    | 50%    | 0%     | 0%     |
| Percentage of facilities with communication capability, as estimated by district team | NA       | NA     | NA     | NA     | NA     | NA     |
| Percentage of facilities with transport capability, as estimated by district team     | 71%      | 70%    | 60%    | 60%    | 72%    | 66%    |
| Number of facilities sampled                                                          | 6        | 3      | 3      | 3      | 3      | 18     |

**Table D39. Persons accompanying emergency referral patients, by health facility**

| Person accompanying       | District |     |      |     |     |       |
|---------------------------|----------|-----|------|-----|-----|-------|
|                           | 1        | 2   | 3    | 4   | 5   | Total |
| Nurse or midwife          | 100%     | 50% | 100% | 50% | 50% | 75%   |
| Other health personnel    | 0%       | 0%  | 0%   | 50% | 50% | 17%   |
| Family members            | 0%       | 50% | 0%   | 0%  | 0%  | 8%    |
| Other                     | 0%       | 0%  | 0%   | 0%  | 0%  | 0%    |
| Number of clients sampled | 4        | 2   | 2    | 2   | 2   | 12    |

**Table D40. Transport for antenatal care, by facility type**

| Mode of transport                            |         | Facility type |              |              |
|----------------------------------------------|---------|---------------|--------------|--------------|
|                                              |         | Health centre | Hospital     | Total        |
| Walked                                       |         | 40%           | 65%          | 63%          |
| Horse, donkey or other animal                |         | 0%            | 0%           | 0%           |
| Bicycle                                      |         | 0%            | 2%           | 2%           |
| Motorcycle                                   |         | 20%           | 0%           | 2%           |
| Automobile                                   |         | 20%           | 23%          | 23%          |
| Bus                                          |         | 20%           | 10%          | 10%          |
| Other                                        |         | 0%            | 0%           | 0%           |
| Length of time to travel from home to clinic | Mean    | 12,8 minutes  | 18,9 minutes | 18,4 minutes |
|                                              | Maximum | 0 hours       | 1,3 hours    | 1,3 hours    |
| Number of clients sampled                    |         | 5             | 52           | 57           |

**Table D42. Percentage of antenatal clients confirming IEC activity carried out in pregnancy, by health facility**

| Activity conducted                                                                                     | Facility type |          |       |
|--------------------------------------------------------------------------------------------------------|---------------|----------|-------|
|                                                                                                        | HC            | Hospital | Total |
| Advice given about diet and nutrition                                                                  | 67%           | 82%      | 81%   |
| Place of birth discussed                                                                               | 0%            | 76%      | 69%   |
| Benefits of birth in facility discussed                                                                | 33%           | 85%      | 81%   |
| Advice given on what to do if there is a problem during pregnancy such as bleeding, convulsion or fits | 35%           | 61%      | 58%   |
| Child spacing or family planning discussed                                                             | 67%           | 39%      | 42%   |
| HIV/AIDS and other STDs discussed                                                                      | 0%            | 36%      | 33%   |
| Care of baby discussed                                                                                 | 33%           | 76%      | 72%   |
| Transport to facility in case of emergency discussed                                                   | 67%           | 76%      | 75%   |
| Number of clients sampled                                                                              | 3             | 33       | 36    |

**Table D43. IEC materials at district office and distribution of IEC messages in the district**

| Type of IEC materials available                                |    |
|----------------------------------------------------------------|----|
| Posters                                                        | 0% |
| Counselling cards                                              | 0% |
| Take home leaflets                                             | 0% |
| Materials to support community IEC                             | 0% |
| Other                                                          | 0% |
| Distribution of IEC messages in the district                   |    |
| Community health workers deliver safe motherhood messages      | 0% |
| IEC activities relating to maternal health are targeted at men | 0% |
| None                                                           | 0% |
| Number of districts sampled                                    | 5  |

**Table D44. Availability of satisfactory educational materials, by facility type**

| Type of materials                                 | Facility type |          |       |
|---------------------------------------------------|---------------|----------|-------|
|                                                   | HC            | Hospital | Total |
| Warning signs of complications during pregnancy   | 0%            | 0%       | 0%    |
| Postpartum care or newborn care or breast-feeding | 0%            | 17%      | 6%    |
| Family planning                                   | 8%            | 50%      | 22%   |
| STDs and/or HIV/AIDS                              | 0%            | 17%      | 6%    |
| Antenatal nutrition or anaemia                    | 0%            | 0%       | 0%    |
| Number of facilities sampled                      | 12            | 6        | 18    |