2011

CLIENTS' AND PROVIDERS' PERSPECTIVES ON CAESAREAN SECTIONS: AN OPERATIONAL STUDY INTO THE HIGH CAESAREAN SECTION RATE IN GEORGIA

MAG
MIDWIVES ASSOCIATION OF GEORGIA
ETC CRYSTAL
Koninkrijk der Nederlanden
HERA XXI

Clients' and providers' perspectives on Caesarean sections: An operational study into the high Caesarean Section rate in Georgia

Table of contents

List of abbreviations

ANC	Antenatal care
C-section	Caesarean section
CME	Continuous medical education
CS	Caesarean section
EPC	Effective perinatal care
GEL	Georgian Lari
GOGA	Georgian Obstetrician and Gynaecologist Association
HF	Health Facilities
ICM	International Confederation of Midwives
JSC	Joint Stock Company
JSI	John Snow Incorporated
MAG	Midwives Association of Georgia
MH	Maternity House
MMR	Maternal Mortality Ratio
MoLSHA	Ministry of Labour, Health and Social Affairs
MU	Maternity Unit
MU	Maternity unit
NCDC	National Center for Disease Control and Public Health of Georgia
Ob/Gyn	Obstetrician/Gynaecologist
PNC	Postnatal care
PROM	Premature rupture of membranes
PS	Parents' school
SLR	Society with Limited Responsibility
TSMU	Tbilisi State Medical University
USAID	United States Agency for International Development
VD	Vaginal delivery
WCC	Women's consultation centre
WHO	World Health Organisation

List of tables and figures

1 Introduction

The study on Caesarean sections (C-sections, CS) in Georgia was conducted within the context of the project: 'Enhancing the Quality of Care: Upgrading the knowledge and skills of midwives in Georgia'[1]. This project aims to contribute to achieving MDG 4 and 5, the reduction of infant and maternal mortality in Georgia by the year 2015. Specifically, through the project the professional organization MAG (Midwives Association of Georgia) was established and support provided to the development of the Midwifery educational programme at the Tbilisi Medical State University (TSMU). Addressing the quality of care in the perinatal period in Georgia, including the role of the midwife in this process is an urgent call.

The Georgian health care system underwent hard times after the collapse of the Soviet Union at the beginning of the 1990s, and during the early years of independence. This has affected the quality and coverage of essential health services, including perinatal care. As illustrated in the *Concept of Perinatal System Strengthening in Georgia* (USAID/CoReform, 2009) scarce resources provided by the state were insufficient to ensure proper functioning of the health care system: "the operation of rural ambulatories and midwife stations was ruined, antenatal supervision service deteriorated, links between institutions were broken, which resulted in total destroy of basic principles of perinatal care: accessibility and continuous supervision. All this affected negatively maternal and child health, which was reflected in worsening of perinatal indicators". However, after a decade of first decline, the overall health status in Georgia started to improve at the beginning of the 21st century. As Chanturidze T et al. note in the 2009 Georgia Health System Review: "While still high in international comparison, maternal and infant mortality rates have been falling as socioeconomic conditions in the country improve". However, a recent overview of maternal mortality in the Lancet (Hogan, 2010) shows a relatively high MMR for Georgia (37 per 100 000 live births[2]), especially compared to other Caucasian countries and in Europe. Neonatal mortality – another important indicator of the health care status of the country – is critical, considering that in 2007 close to 70% of the neonatal deaths were due to mortality within the first six days (9.4 per 1 000 live births). (USAID/CoReform 2009)

In the 1990s the Georgian government embarked on a large-scale reform trajectory in health including the introduction of health insurance, provider payment schemes and user fees. Out-of-pocket payments (OPPs) – formal and informal – became the mayor source of health financing. According to estimates of Belli et al. (2004), almost half of the total revenues of OPPS were informally paid. According to the authors, "the OPPs were officially 'introduced' as a source of funding for health services, both as a reward to private practice, as well as in the form of co-payments and user fees". And although OPPs were most probably existing during the Soviet times, they became much more prevalent within the economic and fiscal collapse of the early 1990s.

It is against this background of health system changes that the project cited above has been supporting midwifery training and education, allowing for the development and growth of a professional midwifery workforce through the Tbilisi State Medical University. At the same time the Project supports recognition of the role of the midwife in perinatal care, through the newly established Midwives Association of Georgia (MAG).

Rationale for the study

The current study into C-sections follows a series of assessments of perinatal care, which have been addressing current practice in perinatal care. One report (USAID/CoReform 2009) rang the alarm bell on an absolutely insufficient utilization of antenatal services: in 2007 only 49.7% of pregnant women were registered for antenatal supervision before 12 weeks of gestation; 70.6% of these completed at least four visits, but only part of them underwent all the required investigations. Other studies (UNICEF/Curatio IF 2006) report dissatisfaction among pregnant women with the services obtained. Both studies found a high Caesarean Section rate of around 22% (rates ranging between institutions from 2 to 76%), more than half of which were emergency C-sections. Vacuum extraction and forceps were employed in less than 1% of all hospital-based deliveries.

1 The project (2008-2011) is funded through the Netherlands Ministry of Foreign Affairs/Matra programme. Implementing partners in Georgia are: HERA XXI, Tbilisi State Medical University and Georgian Obstetricians and Gynaecologists Association. Implementing partners in the Netherlands are ETC Foundation, Rotterdam Academy of Midwifery and the International Confederation of Midwives.

2 WHO 2006 states a MMR of 32 per 100 000 live births; according to NCDC data the MMR in 2008 was 14.3 and 27 per 100 000 live births in 2009.

More than 20 years have passed since the WHO stated that there is no justification for any region to have CS rates higher than 10-15%[1] (WHO 1985). Since then however the rates in Georgia have only increased, as the findings reported in Chapter 4 will demonstrate. This is a matter of concern, not only because of the fact that it has become one of most common surgical operations in the world today (with financial and human resource consequences), but in particular because many of them seem to be conducted without medical indication. A rising number would suggest that both health care workers and their clients perceive the operation to be free from serious risks. Though many studies have attempted to evaluate the risks (and benefits) associated with the procedure being performed without medical indication, a clear causal relationship between the surgical operation and maternal complications is difficult to substantiate. However, findings from the 2004-2008 WHO Global Survey on Maternal and Perinatal Health indicate that the incidence rate for severe maternal outcomes[2] associated with C-section without medical indication was about three times greater than that associated with spontaneous vaginal delivery (WHO 2010). The authors conclude that in the absence of a medical need, delivery by C-section carries an increased risk of short-term adverse outcomes for the mother, especially in an African setting. Concerns also are related to costs of such procedures and a rise in antibiotic resistance (as a result of routine use of antibiotics during or after Caesarean section).

Purpose

Georgia is not unique in its rising trend of C-sections. World averages are as high as 40% in Eastern Asia, currently one of the places with the highest rates (Costa 2010)[3]. The current study intends to establish the trend over the years in Georgia and investigate the reasons underlying the high CS rate in Georgia, and to determine factors associated with the current practice. At the same time the study was conducted to strengthen the midwives' capacity in conducting (operational) research and enhance their analytical skills by involving them at all stages of the research. The findings of the research into current day attitude and practice in C-sections in Georgia would serve as an evidence base to be used by the MAG in their advocacy work for improvements in perinatal care, among others increased acknowledgement of clients' rights in maternal health, and the social and professional recognition of midwives.

Logistics and acknowledgements

This study into Caesarean sections was initiated by the professional organisations MAG and the Georgian Obstetrician and Gynaecologist Association (GOGA). It is implemented as a joint venture between MAG, GOGA and HERA XXI, with technical support from ETC Crystal.

The research team wishes to thank all the women who participated in the study. Midwives and obstetricians/gynaecologists (Ob/Gyn) who participated are thanked for their willingness to participate and their openness in responding. In addition, the study team thanks the management of the health facilities that were included in the study for their willingness to be part of the study. Without their permission, this research would not have been possible.

1 In its latest 2009 publication, "Monitoring Emergency Obstetric Care: a handbook', the WHO states that: 'Both very low and very high rates of caesarean section can be dangerous, but the optimum rate is unknown. Pending further research, users of this handbook might want to continue to use a range of 5-15% or set their own standards."

2 (i) severe maternal outcomes including maternal death, admission to intensive care unit, and blood transfusion or hysterectomy (ii) severe perinatal outcomes including foetal death, neonatal mortality up to hospital discharge limited to the first week of life, and stay > 7 days in neonatal intensive care unit.

3 In contrast, in the African region the average CS rate is as low as 3.5%.

2 Objectives

Overall research objective: To determine the reasons for the high rate of Caesarean sections in Georgia.

Analysis of existing records:

1. To identify the trend over the past 10 years in Caesarean section rates.
2. To identify regional/geographical variations in Caesarean section rates in Georgia.

Provider perspective:

3. To document the changes over time in the type of conditions that are considered 'obstetrical complications', and in particular those that require Caesarean sections.
4. To compare the profile of women who underwent CS with that of women who had a physiological delivery (10 medical categories; and in terms of other characteristics).
5. To ascertain perspectives of midwives and obstetricians/gynaecologists on C-sections: trends in general, situation in Georgia and in selected maternity houses/maternity units.

Client perspective:

6. To obtain the clients' perspectives on C-sections, including their current levels of information level and their attitudes, and the reasons why women themselves at times request for C-sections.
7. To find out at which stage of pregnancy the decision as to the type of delivery is being taken (physiological delivery or C-section).

3 Methodology

3.1 Study type & populations, sample

The study is a cross-sectional comparative and descriptive study. The composition and the size of the sample of the Maternity Houses (MH) was determined by taking into consideration the following elements:

- regional spread including the Eastern, Western regions, and the capital;
- size of the MH: including small (<200 deliveries per year) and large size MHs (>200 deliveries per year);
- number of Caesarean sections: including MHs with high and low numbers of Caesarean sections;
- management structure of the MH: including private and (previously) public MHs.

Table 1 below gives an overview of the study population per objective, and the sample (size, method).

Table 1: Study population and sample		
Data collection instruments **(objective)**	**Study population and expected sample size**	**Sample method and actual size**
Checklist for retrieval of data from delivery log and patients cards **(objective 4)**	**Study population:** between 95 and 114, spread over 11 regions **Expected sample size:** 14 MH from 6 regions and Tbilisi: 11 MH's and 3 MCH units/depts within national hospitals	**Method:** purposive sampling **Sample size:** 19 MHs from 6 regions and **Tbilisi, of which:** - 1 recently opened - 10 private, 4 Joint Stock Companies (JSC) and 5 with the status of Society with Limited Responsibility (SLR) **Comments:** None of the MHs included in the sample has a national/referral status
Interview with postpartum women, before their discharge from the MH **(objective 5, 6, 7)**	**Study population:** approximately 56 000 of which: - 14 000 women with CS and - 42 000 women with VD. **Expected sample size**: - 200 women with CS - 200 women with VD.	**Method:** convenience sampling in small facilities; systematic sampling in larger ones (7-8 per facility) **Sample size:** women with CS: 119, from 15 health facilities; women with VD: 175, from 19 health facilities **Comments:** the sample size was lower than expected because of the difficulty in reaching an expected 7-8 women per health facility (due to limited deliveries during time of visit or refusal of potential interviewees)
Interview with pregnant women **(objective 5, 6, 7)**	5, 6, 7 … …	**Method:** Convenience sampling at the Women's Consultation Centre **Sample size:** 171 women, from 15 health facilities
Interview with midwives **(objective 4, 5)**	**Study population:** approximately 900 nationwide (2008 data) **Expected sample size:** 50	**Method:** Convenience sampling (3-4 per facility) **Sample size:** 83 (from 18 health facilities) **Comments:** the sample size exceeded the expected size because of interest among midwives to participate in the study
Interview with obstetricians/ gynaecologists **(objective 3)**	**Study population:** 1400 **Expected sample size:** 30	**Method:** **Sample size:** **Comments:** Convenience sampling (2 per facility) 109 (from 18 health facilities) The sample size exceeded the expected size because of interest of the Ob/Gyn to participate in the study

Although the sample of 19 facilities represents only 19% of all health facilities in Georgia that offer delivery services, they account for around 44% of all registered institutional deliveries in 2010, and for 43% of all C-sections nationwide (see table 2 below).

Table 2: Sample of 19 health facilities in relation to the total of 98 facilities in Georgia

	Georgia (total)	Sample	%
Health facilities providing delivery services (including Caesarean sections)	98	19	19%
Obstetricians/gynaecologists	+/- 1 700	109	6-7%
Midwives	+/- 900	83	9-10%
No of deliveries (2010)	61 653	27 137	44%
No of C-sections (2010)	19 418	8 446	43%
No of deliveries (2009)	61 441		
No of C-sections (2009)	17 772		
No of deliveries (2008)	55 850		
No of C-sections (2008)	13.870		
Source: NCDC data			

3.2 Data collection

Prior to the data collection, the study administrator visited all selected health facilities to secure permission for the data collection. All selected facilities approved of the data collection in their MH/MU, and in addition some others were included. This is due to the fact that in the process of requesting permission some who initially refused gave permission at a later stage. In one area all three – rather small – facilities were included instead of selecting one out of the three.

The data were collected using the following tools:

- **A checklist** for the retrieval of data from MH/MU. In case of a large facility, with more than 200 deliveries per month, the data for the last full month were retrieved. In case of a small facility, with less than 200 deliveries per month, the data for the last two months were retrieved. The checklist was constructed based on the 'Robson classification system of C-sections' (10 clinically relevant categories).

- **For the clients, three different questionnaires with semi-open questions** for each one of the following three categories of women:

  - postpartum women (with CS and VD, 1 or 2 days after the delivery);

  - pregnant women (between 25 and 32 weeks of gestation) visiting the antenatal clinics (within the MH/MU). For practical reasons partners of the pregnant women were not included in the study[1].

- **For the providers, two different questionnaires with semi-open questions**, one for the midwives and one for the Ob/Gyn.

Table 3 below shows data collection tools and the number of participants per category. Interviews were held in all 19 facilities, though the checklist for retrieval of data from the delivery logbooks was used in only 17 facilities. The table in annex 1 presents a comprehensive overview of the tools, outcome variables and data sources in relation to the outcome variables. An overview in annex 2 presents the distribution of interviewees over the 19 health facilities.

1 The study did not look into gender differences regarding perspectives on C-section in particular and pregnancy, parenting and safe motherhood, therefore men were not included in the study. A follow-up study is needed to ascertain differences, if any, on attitude and practices on safe motherhood, birth preparedness, delivery, parenting etc.

Table 3: Data collection tools	
Checklist (MH)	17
Questionnaire pregnant women	171
Questionnaire women with VD	175
Questionnaire who underwent C-section	119
Questionnaire midwives	83
Questionnaire obstetricians/gynaecologists	109

All instruments were developed during an HSR training workshop in October 2010[1] as a collaborative effort of all members of the research team. The questionnaires and the checklist were revised, adapted and finalised after a pre-test in one of the health facilities. The final versions of the research instruments are found in annex 3-8.

The data collection took place from November 2010 to February 2011. The data collection teams each comprised of four research assistants (midwives) and one researcher (gynaecologist). Each group covered a particular region, which involved working in the region for 4 days, visiting all health facilities included in the sample (in Tbilisi and Rustavi the timeframe was 2 days). The researchers had the role of group leader: all groups were under the supervision of the principal investigator. See annex 9 for the team composition and role and responsibilities.

All questionnaires were numbered, categorized and coded by the data collectors themselves. Responses to open questions were coded, and together with the answers to the closed questions, included in the data entry sheets. Prior to the data analysis workshop in March 2011, the team did a preliminary analysis of the data and discussed their findings and observations.

3.3 Ethical considerations

Prior to each interview, the interviewees gave their informed consent and were ensured of confidentiality; as it reads in the questionnaire: "All answers will be handled confidentially, and processed anonymously, so you may speak freely". Interviewers made conscientious efforts to conduct the interviews in a quiet environment. Responses were recorded and handled anonymously.

3.4 Study limitations

Design

- Weaknesses in the *clients' questionnaires*: though we did ask whether they were insured (and whether they were fully or partially insured), we did not include any additional questions on the actual total costs of the delivery for the women/families.

- Weakness in the *clients' questionnaires*: only in the questionnaire for women with CS their ethnicity was established. Making it impossible to compare the three groups on this aspect.

- Weakness in the *clients' questionnaire*: only women with CS and pregnant women were asked their preferred type of delivery in case of future pregnancies, making comparison between the groups on this aspect not possible.

- The study did not look into male and community perspectives on safe motherhood, birth preparedness, delivery and parenting. This was a deliberate choice given the limited time and the interest of the research team.

1 In October 2010 and in March 2011 the health systems research (HSR) workshops were organised (each one week). The first was to familiarise the team with HSR; to jointly develop the study design and the data collection tools; and to arrange the fieldwork. The second workshop was dedicated to analyse and interpret the data; to prepare a zero draft of the study report; and to present the preliminary findings for feedback from a few invited guests.

Data collection

- Not all delivery logbooks were adequately filled, hence the researchers could not always obtain the data required in the checklist.
- Two MHs were excluded from the delivery log analysis, because of incomplete information.
- Fear or anxiety among interviewees about the purpose of the interview and whether the results would affect their institutions or themselves personally, might have influenced responses in some of the cases.
- Language barriers: three or four clients could not be interviewed because of a language barrier. In the case of four interviews a translator was involved, which may have influenced the recording of the answers.
- In some facilities it was difficult to find a quiet/private environment for the interview, in particular for client interviews. This may in certain cases have affected the quality of the answers obtained.

4. Findings

4.1 Trends over time in deliveries and regional variations in Georgia

Over the past ten years, the number of C-sections rose from 9.3% in 2000 to 31.5% in 2009. During the same period, the number of vaginal deliveries decreased (physiological vaginal deliveries from 79% to 63%; and pathological vaginal deliveries from 12% to 6%).

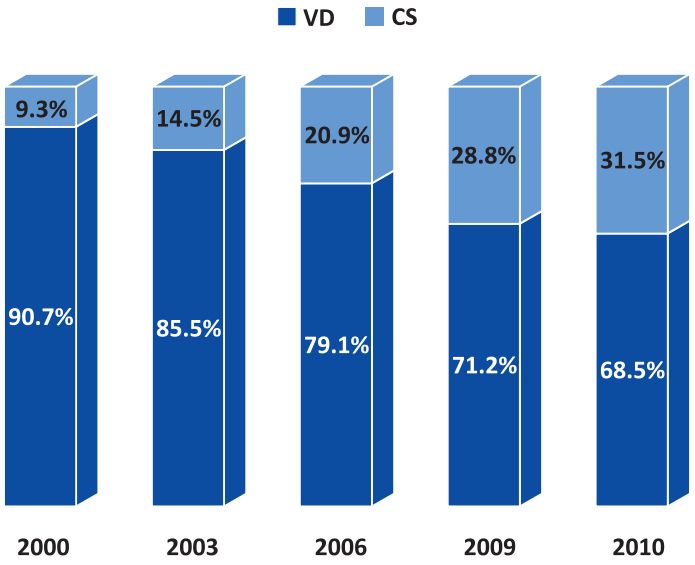
In annex 10, NCDC data on deliveries in Georgia over the past decade are presented in an overall table. The table and figure below show some of the trends that can be observed more in detail.

Table 4: Trend in planned and emergency C-sections

		2000	2006	2007	2008	2009	2010
Total deliveries in HF		45 156	47 593	49 317	55 850	61 441	61 653
Planned C-section*	1st C-section	1 164	3 046	3 150	4 034	5 065	6 225
	Repeat	871	1 865	2 154	2 900	3 433	3 993
Emergency/urgent C-section**	1st C-section	1 754	3 726	4 172	5 176	6 975	6 495
	Repeat	593	1 277	1 468	1 760	2 249	2 705
Total C-sections * **		4 382	9 934	11 008	13 870	17 722	19 418
% C-sections of total del		***9.3%***	***20.9%***	***22.3%***	***24.8%***	***28.8%***	***31.5%***

** Planned C-section (medical indication or clients' demand)*
*** Emergency/urgent C-section: decided after onset of labour*
**** Including the number of unspecified C-sections (20 in 2006 and 64 in 2007)*

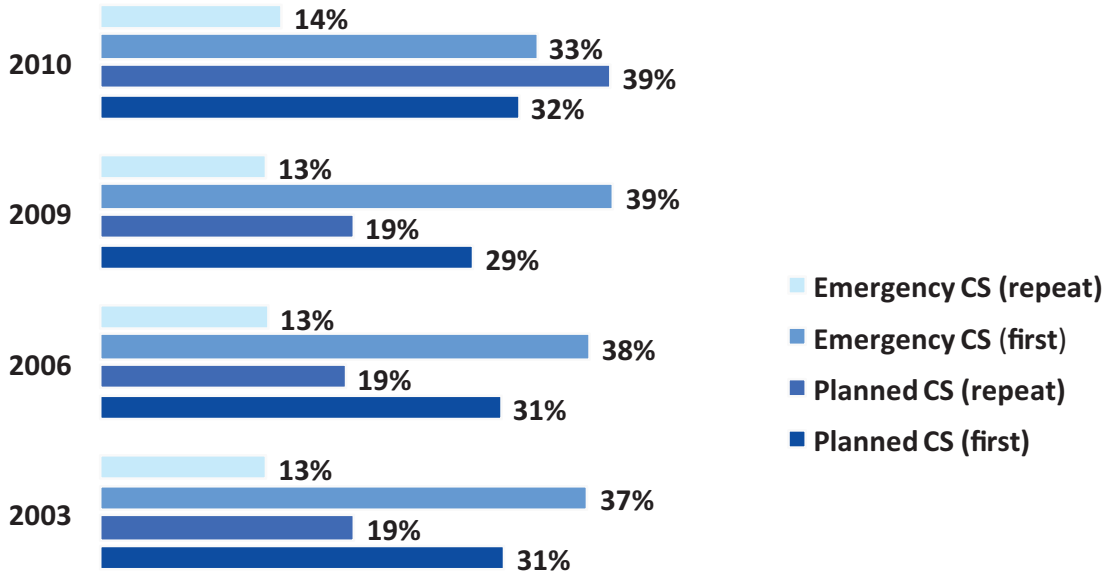
Figure 1: Deliveries (VD and CS) as percentage of total institutional births



Overall, the national data on deliveries do not state the reasons for the C-sections, making it impossible to distinguish which proportion of C-sections are conducted based on medical indications (and which type of medical indication). Below, conclusions on the observed trends:

- The percentage of deliveries that are conducted through C-section increased from 9.3% in 2000 to 31.5% in 2010, which is more than threefold over a period of 10 years.
- The observed increase in C-sections between 2008 and 2009 can be attributed relatively more to the higher number of 1st emergency C-sections, and relatively less to a higher number of planned repeat C-sections.
- About 50% of all C-sections are planned in advance, that is **before** onset of labour. The other half involves emergency C-sections, which are decided upon **after** onset of labour. The distribution of planned versus emergency CS appears about equal (50%-50%) and relatively consistent over time.
- The percentage planned CS in case of a repeat delivery saw the highest increase over the past decade (compared to the other categories): from 20% in 2000 and 39% in 2010. See table 2 below.

Figure 2: Trends in C-sections (planned/emergency as proportion of total CS)



4.2 Profile of health institutions providing delivery services

In the course of the Health Reform process many changes have occurred in the health sector. On the demand side, most noticeable for the clients was the introduction of health insurance schemes and user fees. On the supply side also many changes occurred: the State selling MHs to the private sector, whilst keeping some under State control assigning them the status of 'Society with Limited Responsibility' (SLR). These changes have impacted greatly on clients and providers. Since the abolition of social insurance in 2003 all health insurance in Georgia is private.

On the supply side, medical personnel lost their civil servant status in 1996, and gradually all facilities obtained autonomy, with their own autonomous management structure. As of 2011, all health facilities are privatized: either under independent SLR status, JSC, or otherwise classifiable as private; and owned by private persons, insurance companies.

Nineteen maternity houses and maternity units[1] participated in the study, varying in size and geographical location, from six different regions and Tbilisi. For analysis purposes their profile was assessed, resulting in the following classification:

- Among the 19, there are 10 private maternity houses, 5 Societies with Limited Responsibility (SLR) and 4 are so-called Joint Stock Companies (JSC).
- Four maternity units form part of Regional or district hospitals – some of which are JSC and some are private), sharing the same building with other health departments.
- One of the private maternity houses was recently established (mid 2010).

Below an overview of observations and comments from the research team:

- Most of the health facilities in the sample are located in buildings dating back to the soviet period. Only four MHs are located in new buildings. Some of MH/MU has problems with water supply and hygiene. According to the recent plans of the Ministry of Labour, Health and Social Affairs (MoLSHA) some 46 new hospitals will be build throughout Georgia, which will be financed and owned by the insurance companies. The insurance companies geographically divided the country, as well as subsequent areas of responsibility (MoLSHA 2010).
- These plans influenced renovation plans of old buildings, which for the most part have stopped. This also explains why some of the MHs included in the study are in poor condition. It also may explain why many medical staff members of the previously public MHs lack motivation to implement new guidelines and protocols. Many fear losing their jobs as insurance companies may rehire only a small proportion of the existing staff.
- Many facilities have their own rules, regulations and standards. User fees for delivery and Caesarian Sections vary widely among the MH/MU. With the intention to decrease C-section on demand, one of the health facilities introduced an increase fee for C-sections on demand of 1900 Georgian Lari (GEL), up to two to four times the average fee of 400 GEL for a delivery. This action however did not motivate clients to rethink C-section; rather it made them choose for a neighboring MH with much lower prices (in this particular case: 750 GEL). The example illustrates how one MH was able to expand, at the expense of another MHs, and that the effect of initiatives to revert an increasing CS trend will be minimal if such action is taken by a single institution without any coordination with other clinics, and are supported by a national guideline/policy.
- The State introduced an insurance programme (State Health Insurance) for vulnerable populations (the population under the poverty line, teachers, military workers and so on) with a fixed price of 400 GEL, without distinguishing whether it concerns a C-section or a vaginal delivery. This amount is not sufficient to cover the costs of C-sections, leading to financial problems. A situation which, according to some directors of the maternity houses, is aggravated by delayed transfers of health insurance companies.
- The management of the MH/MU is free to hire medical staff. This had lead to unusual staffing patterns: for example, in one facility apparently there are no midwives involved in perinatal care; in another facility, in stead of a gynaecologist a reproductive health specialist is working in the Women's Consultation Centre. Also in this MH, the same person held the positions of anesthesiologist and ultrasound investigation specialist.

1 Both maternity units and maternity houses provide care for women during pregnancy and childbirth, and for newborn infants; a MU is located within a general hospital whereas a maternity house is a separate/independent facility.

- The majority of the managers of the MH/MUs addressed the low qualification of midwives and doctors, and expressed the need to invest in their Continuous Medical Education (CME). About half of the MH/MU in the sample were so-called 'JSI sites', in which JSI had implemented the 'Healthy Women in Georgia', and some still receive support, among others training for doctors and midwives. However not all managers seem eager to adopt and/or to implement new guidelines, innovations and to improve services. To some improved physical infrastructure is more needed than strengthening of professional skills.
- Four of the 19 facilities stand out when it comes to parental support and education, operating Parent's Schools (PS) at locations within the health facility. In three of them gynaecologists facilitate the sessions for expecting parents, and in one of the facilities midwives are also involved in the PS. Attending PS is free of charge. Please see the case studies below.
- The endo-tracheal method is a popular method for anesthesia, which is being used in the majority of the facilities. Only a few use spinal or epidural anesthesia.
- One (private) clinic in Tbilisi stands out on a number of accounts. First of all, this particular MH continues to show low C-section rates (one of the lowest in the country), against the current trend of an increased rate. The management values the midwife in her role as intermediate between the pregnant woman and the Ob/Gyn, and in the perinatal process. It therefore supports their training and professional growth, and implemented measures to increase their role and involvement in the perinatal process at the workplace, thus enabling them to fulfil many of their core competences. Midwives in this MH are involved in antenatal care and in the Parents' School. They monitor labour independently by making use of the partogram, are involved in the 'warm chain'[1], as well as in the Active Management of the Third Stage of Labour (AMTSL). The MH conducts audits of maternal deaths, follows international developments, and implements guidelines.

Zugdidi Parents' School

The research team had an opportunity to observe the meeting of the Parents' School in Zugdidi, in Samegrelo region. This school is a part of the women's consultation center of the multi-profile hospital "Republic" (in 2010 the hospital was renamed as "Tsminda Luka"s hospital). The PS was established with support from JSI. The room for the Parents' School is situated next to the WCC and is equipped a TV, DVD, elastic balls; and various posters and booklets about the delivery, breast-feeding, and family planning. The facilitator is a gynaecologist of the maternity unit. The participants are pregnant women in various stages of gestation and their partners, mothers and/or mothers-in-law. The Parents' School is held once a week, on Wednesday.

During the visit of the research team, participants watched a very interesting film about pregnancy and the delivery. After the film they discussed the topic of the women's nutrition during pregnancy. The facilitator invited the women to join the discussion and bring questions next time. At the end of the meeting the facilitator distributed booklets among the participants.

1 Warm chain is a set of ten interlinked procedures carried out at birth and during the following hours and days to minimize the likelihood of hypothermia in newborns and includes: a warm delivery room, immediate drying, warm resuscitation, warm transportation, skin-to-skin contact, breastfeeding, postponement of bathing, appropriate clothing and bedding, rooming-in and bedding-in.

Case study: Zestafoni Parents' School

Zestafoni is a town in Imereti region, western Georgia, which has a maternity house that is receiving support from JSI. The delivery logbooks are organized according to the latest guidelines. The manager of the facility is always trying to implement the new guidelines and protocols.

The WCC is located within the MH, which also includes a Parents' School. The school is open once a week for pregnant women and their partners or other companions. The room is equipped with comfortable furniture, there is a 'Swedish wall', and equipment including a TV, DVD, various posters and booklets about delivery, breast-feeding, and family planning. Participants receive information and advice about pregnancy, the various stages of the delivery, breastfeeding, and nutrition, among others. This allows women to better prepare themselves for the delivery, especially psychologically. Midwives and gynaecologists of this maternity house are convinced of the benefits of the PS, based on their observations of women/couples that did visit the schools and those that didn't.

4.3 Pattern of deliveries and C-sections across health facilities

Figure 3 below shows a comparison of the 18 MHs that are included in the sample, considering the total number of institutional deliveries and their distribution between vaginal deliveries (VD) and C-sections (CS). The NCDC data[1] show wide variations in C-sections, between 5.4% in one of the district hospital maternity units and well over 50% in three institutions: 55.7% at Kambarashvili clinic in Telavi, 63.3% at Sena-medi maternity house in Senaki and 78.9% at Bo-mondi maternity house in Kutaisi.

Figure 3: Number of VD and CS in 18 sampled health institutions in 2009

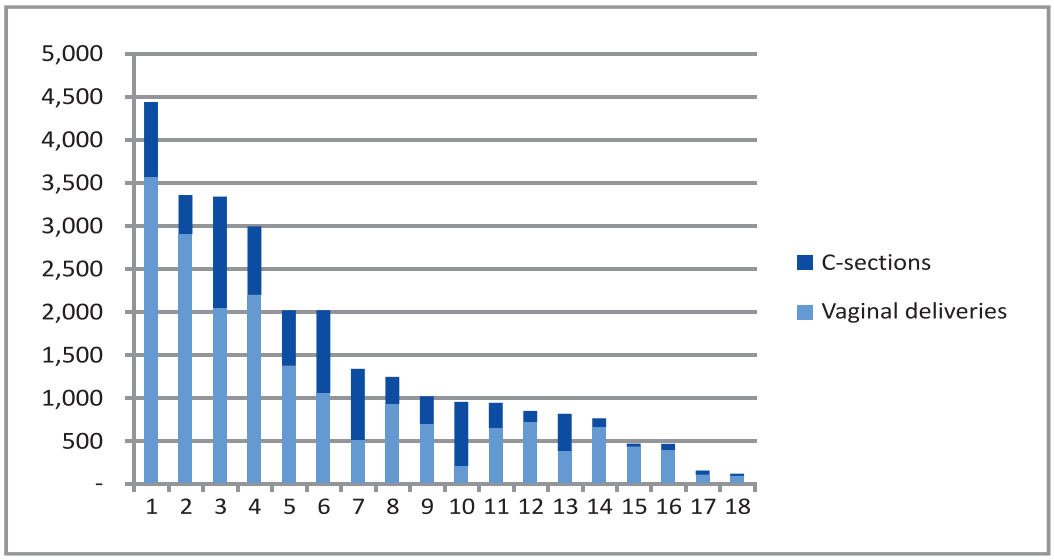


Table 5 below shows that the percentage of C-sections in SLR institutions is much lower than in private facilities and joint stock companies: 19.7% versus 32-33% (NCDC data).

Table 5: Proportion of C-sections in 2009 by type of institution

	Number of deliveries	Number of C-sections	Percentage of C-sections
SLR institutions (n=5)	3 123	615	19.7%
Joint stock companies (n=4)	7 081	2 362	33.4%
Private institutions (n=9)	16 934	5 469	32.3%
TOTAL	27 138	8 446	31.1%

1 NCDC reports; NCDC website: www.ncdc.ge

4.4 Analysis of delivery logbooks

Two of the delivery logs could not be included in the study, in one case because the book was not available to the team during their visit and in the other case the book was not filled according to the 10 classification categories, making it impossible to state the correct diagnosis. In MHs with less than 200 deliveries per month, the researchers reported the results of two months (in 14 facilities). In the remaining 4 facilities, retrieval of data of one month was enough.

The findings presented below involve a total of 3 040 deliveries analysed from the various delivery logbooks.

Findings

C-section versus vaginal delivery: in comparison to national averages, the percentage of C-sections in the sample is higher than the national average of (32%). A slightly higher percentage of the C-sections are first deliveries (55%, against 45% repeat deliveries).

Among the 65% vaginal deliveries, the distribution first and repeat is around 50/50% (equal among all type of MHs (see table 6 below).

Table 6: Distribution first repeat deliveries

		SLR	Private	JSC	Total
VD (n=1 970)	First	52%	49%	50%	50%
	Repeat	48%	51%	50%	50%
CS (n=1 070)	First	56%	52%	63%	55%
	Repeat	44%	48%	37%	45%

In SLR the percentage CS is well below the averages nationally and in the sample (18%); this figure is higher in private facilities and JSC: 40% and 35% respectively (see table 7 below).

Table 7: Distribution of VD and CS deliveries among HF

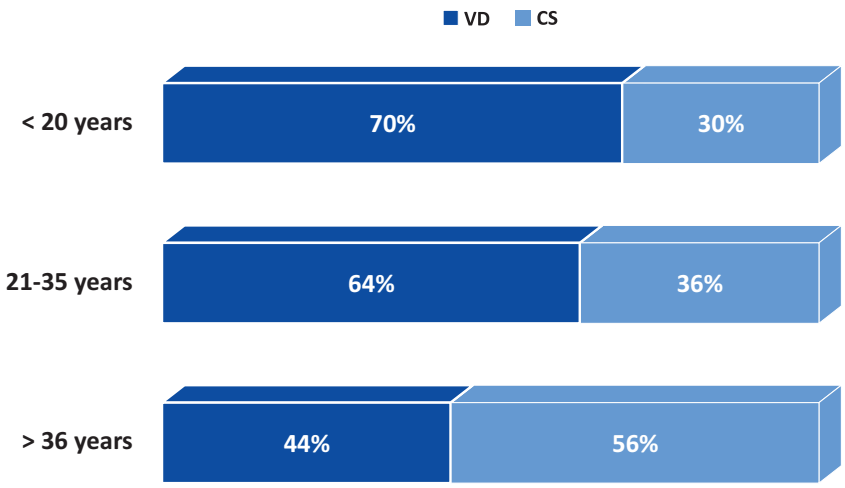
	SLR	Private	JSC	Total
Total VD	360 (82%)	1 034 (60%)	576 (65%)	1 970
Total CS	81 (18%)	678 (40%)	311 (35%)	1 070
TOTAL	441	1 712	887	3 040

Regional variations: there are vast regional variations in terms of C-sections: varying from 77% in one region to 10% in two other regions.

Assisted vaginal deliveries: in none of the MHs the forceps is being used. Only nine vaginal deliveries were assisted through vacuum procedure. This figure is considered very low and may indicate lack of practical skills to perform this procedure. Correct implementation of forceps or vacuum assisted vaginal deliveries might have prevented surgical interventions.

Age structure: the majority of the births are from mothers between 21 and 35 years of age (VD and CS). With increasing age, the number of C-section increases: from 30% in the under 20 year olds to 36% in the age group 21-35 years and 56% in the women over 36 years of age.

Figure 4: Age distribution by type of delivery (VD and CS)



When looking at the type of delivery the following observations can be made:

- A majority of the women (with VDs or C-section) deliver in private MHs, this trend is consistent among all the three age groups.
- Compared to women in the other two age groups, women over 36 years appear to prefer the private sector (private and JSC combined) for the delivery, whether for VD or CS. Among the women with CS there is also no major difference between the age groups in terms of type of facility, except for women over 36 years of age, where only one woman of that age group had a C-section in an SLR for the CS.

Table 8: Type of delivery by age

Age	VD (n= 1 890)				CS (n=1 063)			
	SLR	Private	JSC	Total	SLR	Private	JSC	Total
≤20	15%	57%	28%	**364**	7%	66%	27%	**153**
21-35	16%	53%	31%	**1 453**	8%	64%	28%	**816**
≥ 36	10%	74%	16%	**73**	1%	61%	38%	**94**

* Total number of VD and CS differ from totals in tables 6 and 7 because of incompleteness of delivery logs on ages of the women

Presentations at delivery: cephalic, breech, multiple, transversal[1]

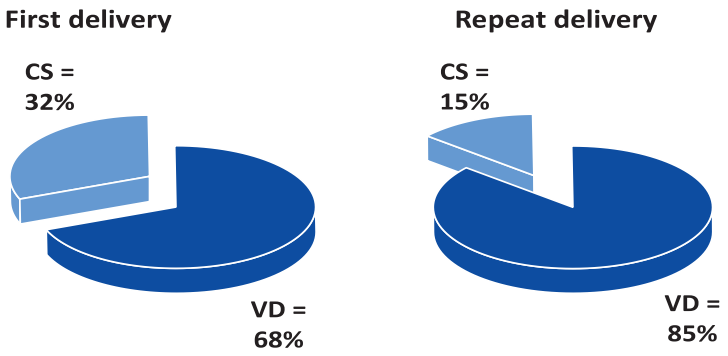
Table 9 below illustrates which **cephalic presentations** resulted in surgery; taking into consideration the gestation period (below and beyond 37 weeks) and whether stimulation had taken place.

1 Cephalic (head-first) presentation is considered normal and occurs in about 97% of deliveries. A cesarean delivery may be recommended for any of the fetal positions other than cephalic. A breech presentation is considered abnormal and occurs in about 3% of all cases. The shoulder, arm, or trunk may present first if the foetus lies sideways (transverse lie). This type of presentation occurs less than 1% of the time. Transverse lie is more common with premature delivery or multiple pregnancies. (www.nlm.nih.gov/medlineplus/ency/article/002060.htm)

Table 9: Type of delivery by cephalic presentation, gestation period, with/without stimulation			
	Cephalic presentation with stimulation (> 37 wks)	Cephalic presentation without stimulation (> 37 wks)	Cephalic presentation without stimulation (< 37 wks)
VD	18 (31%)	1 873 (76%)	54 (59%)
CS	41 (69%)	604 (24%)	38 (41%)
Total	59	2 477	92

Cephalic presentations beyond 37 weeks (without stimulation): 24% of such cases ended in CS (604 of the 2477). C-sections in this category are more frequent among first deliveries (see figure 5 below).

Figure 5: Cephalic presentation beyond 37 weeks (without stimulation)



The group with the lowest risk of C-section (on average 2-3%) is: **repeated vaginal delivery, with a single foetus and cephalic pregnancy (>37 weeks gestation without stimulation and spontaneous delivery).** The findings in this study show a percentage of 15% in this subgroup, which suggests that a more than average percentage of C-sections in this subgroup was conducted without medical indication (see table 10 below).

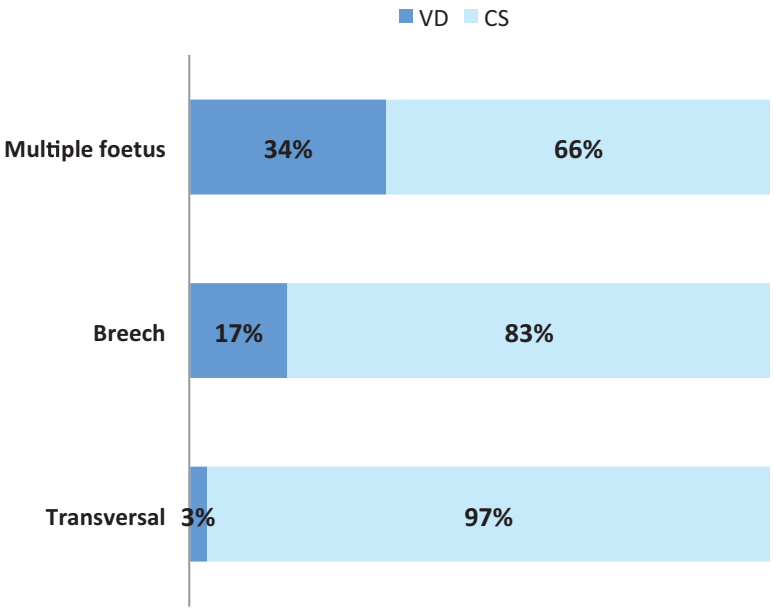
Another group with a relative low risk of C-section (on average 14-15%) is: **first vaginal delivery, with a single foetus and cephalic pregnancy (>37 weeks gestation without stimulation and spontaneous delivery).** The main reasons for C-Section in this sub-group are complications during labour, such as dystocia or foetal distress. According to our study the percentage of C-Section in this sub-group is 32%, which suggests undue C-Sections, not justified by any medical indication (see table 10 below).

Table 10: Type of delivery by cephalic presentation > 37 weeks (with, without stimulation)				
	Cephalic presentation with stimulation (> 37 wks)		Cephalic presentation without stimulation (> 37 wks)	
	First	Repeat	First	Repeat
VD	16 (36%)	2 (14%)	940 (68%)	933 (85%)
CS	29 (64%)	12 (86%)	442 (32%)	162 (15%)
Total	45	14	1 382	1 095

The percentage of stimulation in all groups of cephalic presentation > 37 weeks is significantly low (45 among first deliveries and 14 among repeat deliveries), which indicates that stimulation of delivery is not a common practice in Georgia.

Almost all (one exception) of the 33 **transversal presentations** lead to C-section. The vast majority of the **breech presentations** (83%, 86 out of 104) resulted in C-section. This figure is even higher among **breech presentations in case of a first delivery**: 94% (58 out of 62). In case of a **breech presentation (repeat delivery)** this figure is much lower 67% (28 out of 42). Of the 32 **multiple foetus** 66% (21) were delivered through C-section. See figure 6 below.

Figure 6: Type of delivery by presentation (multiple foetus, breech, transversal)



4.5 Clients' profile and perspective

4.5.1 Pregnant women

General characteristics

Women with gestational age of 25 to 32 weeks were recruited into the study, which resulted in 171 pregnant women interviewed. Their average age was 24.6 years (ranging from 16 to 41 years old). All of them stated to be married, and the average number of deliveries was 2.6.

For almost two-thirds of the interviewees (63%) it was going to be their first delivery, for 32% it was their second or third delivery. About 6% had had a previous C-section; one woman had a history of two C-sections.

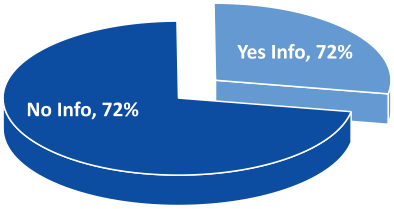
A bit more than half of the respondents lived in the region where the MH/MU was located (54%).

Less than one third of the pregnant women (48 women, 28%) were insured, the majority of which fully insured (37 women).

Information on and participation in Parents' Schools

Of the 31 women (28%) who had information on the Parents' Schools, some 22 had visited such facilities (ranging from 1 to 4 visits). However, the vast majority of the women interviewed had not received information on Parents' Schools: 72% (140). Some of the women who had received information about the schools indicated that there were no such schools in their towns.

Figure 7: Information on Parents' Schools

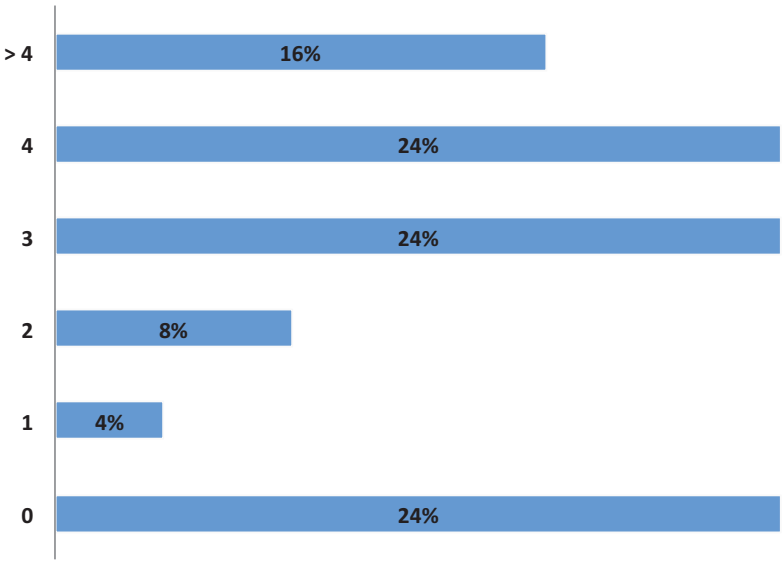


Those that did visit such schools were predominantly positive about them and stated that the lessons had been useful. Most of them had visited the PS together with their partners.

Antenatal information/visits to WCC

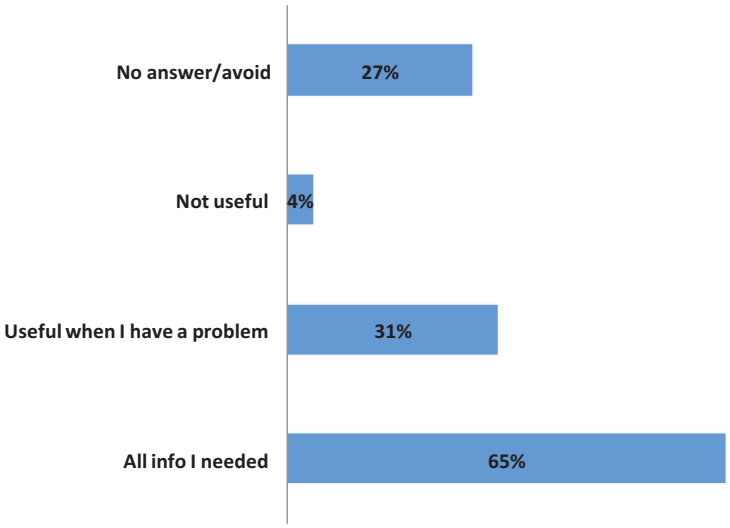
Three quarters of the women interviewed had paid antenatal visits to a women's consultation centre (WCC) (129 out of 169 respondents); 24% did not visit them and hence did not receive antenatal care/information through this facility.

Figure 8: Visits to the Women's Consultation Centre



A vast majority of the women who visited the WCC expressed that the visits had been useful to them, and thought they had gotten all the important information. Some 31% of the women indicated that the visits were very useful when they had health problems and that they had received useful counseling, treatment and recommendations from the gynaecologist. A small percentage (less than 5%) indicated they were discontent with the quality of the services. Quite a large group of the women, 27% avoided answering this question.

Figure 9: Usefulness of the visit(s) to WCC

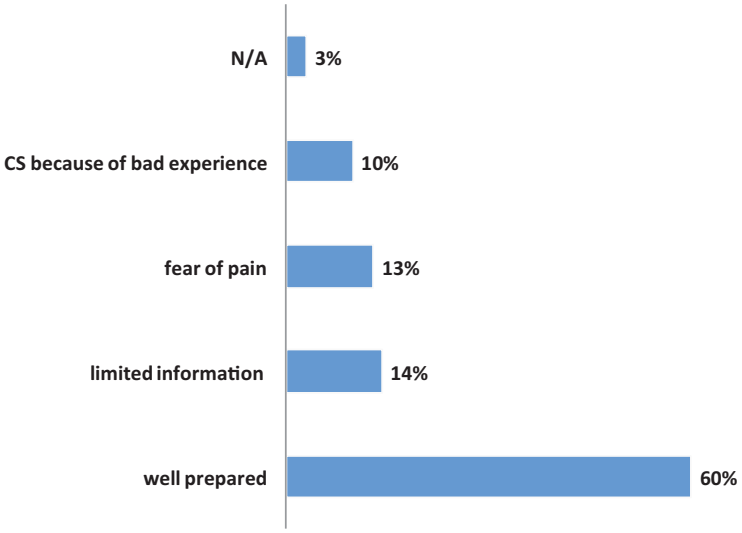


Birth preparedness

Some 60% (100 out of 162) of the pregnant women who answered the question on birth preparedness indicated that they were psychologically prepared for the delivery and felt supported by their family and partner.

Almost one out of every 7 women (14%) said she had limited information about the delivery and estimated that Caesarian sections are generally less painful than vaginal deliveries. Almost the same percentage (13%, 21 women) mentioned that they were not yet ready for delivery and they feared the pain that comes with it. Some 10% mentioned that they had such a bad experience from the previous delivery that they were now opting for a C-section.

Figure 10: Birth preparedness



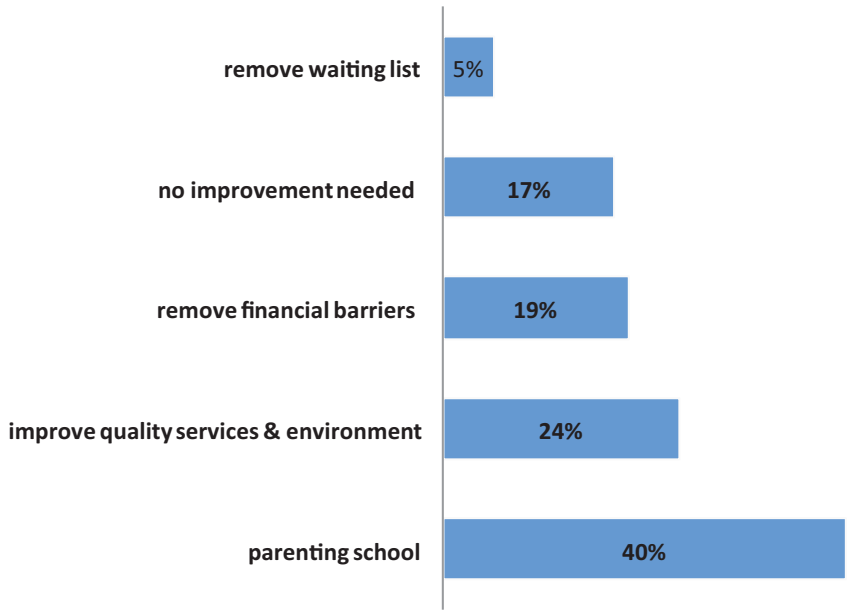
Information needs

For a vast majority of the pregnant women it is important to have information on pregnancy and delivery. The main sources of such information were their doctors and family members, 26.6% and 15.3% respectively. Close to two third of the women (82 out of 128) stated that they had received valuable information from the doctors. 16% of the respondents indicated that information about breathing exercise and diet was very interesting and useful. Twenty percent, one in every fifth woman, indicated that she had not received any important information. 43 women did not answer this question.

Improving services

The study participants were asked to suggest ways to improve services/care for pregnant women. Parents' Schools score high as desired places where women would like to attend classes and talks about pregnancy and delivery. One in four women (37 out of 156 respondents) said that it is necessary to improve the quality of services in the Women Consultation Centres. For quite a number (19%) the financial issue is crucial, especially for those from regions outside Tbilisi. According to them, assistance during delivery should be free of charge, or paid by the health insurance companies. 5% wanted to see the waiting lists removed, as they had encountered problems seeing a doctor.

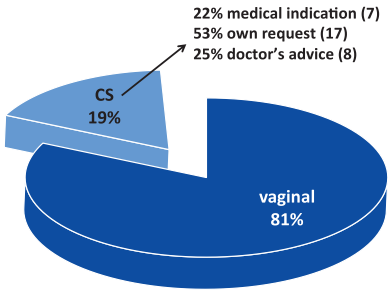
Figure 11: Advice on improvements care/services for pregnant women



Preferred type of delivery

81% (138) of the women expressed at the time of the interview that they would choose vaginal delivery. The remaining 19% (32 women) opted to have a C-section, even though only 7 of them had a medical indication. 17 of them were going to have CS at their own request (10%) and in 8 cases the gynaecologist adviced the CS.

Figure 12: Preferred type of delivery



4.5.2 Women who had a vaginal delivery

General characteristics

One hundred and seventy five women who had a vaginal delivery were interviewed. Their average age was 25.3, ranging from 15 to 41. Almost all participants (96%) were married. For 43% (76 women) it was their first delivery, for 37% it was a second delivery, and 23 women delivered for the third time (13%). In 7 cases it was a forth delivery and a fifth delivery for 2 of them.

A bit more than half of the women came from the same region as the MH/MU; 14% was from another region and close to one third (29%) came from a neighbouring region.

A large majority (65%) of the women who had had a vaginal delivery were not insured, and paid for the delivery themselves. Slightly over a third of the women (35%) had a medical insurance; and for 76% of this minority group the insurance covered all the costs of the delivery.

Antenatal information/visits to WCC

Most women had visited the Women's Consultation Centre during their pregnancy. The average number of visits was 6, and the vast majority (66%) had visited a Centre between 5 and 10 times. The figures below indicate the location of the WCC, and number of visits (figure 13, 14).

Figure 13: Location of WCC

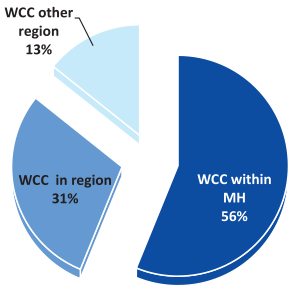
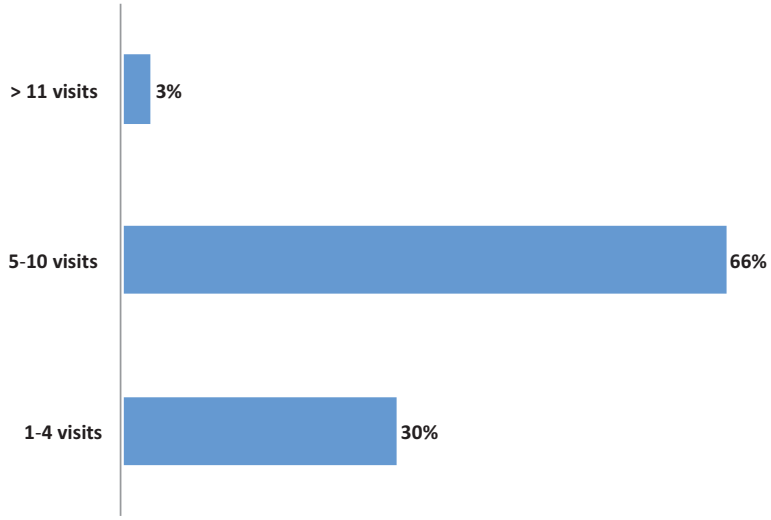
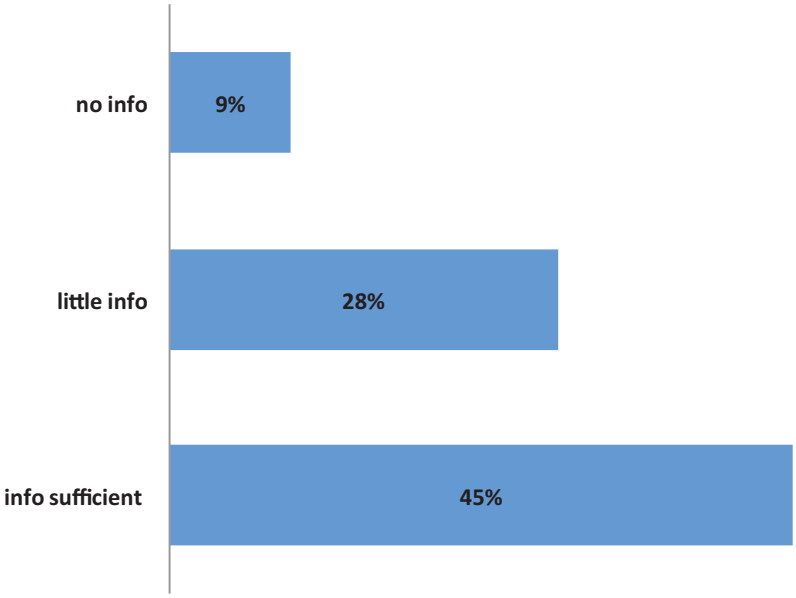


Figure 14: Number of visits to WCC



On the question 'Before you came to the MH or hospital, were you informed on the procedures involved in a delivery?' some 77 (45%) indicated that they had complete information on labour and ways of delivery; but 48 women (28%) had little information about delivery and 15 had not received any information. See figure 15 below.

Figure 15: Information on delivery



Three women mentioned that they did not trust the gynaecologist from the Consultation Centre, and had consulted another (private) doctor for information. One woman said she visited the WCC only for the patient card. Some 12% of the women indicated that the doctor had counseled them about breast-feeding and hygiene of pregnant women. Close to 70% said that the information they received from a gynaecologist had helped them during delivery. Some 30 women (17%) had regularly visited a Parents' School. During the lessons some had watched films about delivery, and had received information booklets about breast-feeding and newborn care.

On the question whether she was scared of maybe having to undergo a C-section, 58% answered negatively (100 women); 32% said they were afraid of this; and 10% were a bit scared.

Client satisfaction

The vast majority of the women who had had a vaginal delivery were satisfied with the hospital services (97%); 5 out of 167 women who responded to this question were not happy with the hospital services (3%). The same percentage of women who were positive about the services were also positive about the midwife and indicated that the role and support of the midwife was very important; again 5 women were not happy with the assistance they received.

On average the MH/MUs were rated very high on all accounts (before, during and after delivery). The majority gave the facility a rating of 7 and higher, of which the majority rated with a 10. Only a few respondents rated the facility with a 5.

4.5.3 Women who underwent a Caesarean section

General characteristics

A total number of 119 women who underwent a C-section[1] were included in the study.). The average age of the women was 26.2 years (ranging from 17 to 40). All participants were married except one. For 58% it was a first delivery (66 women); for 29% it was a second delivery; a third delivery for 9 women, a fourth for 2 women and a fifth delivery for one woman.

The vast majority of the respondents were Georgian (87%); 6 were from Azerbaijan; 3 from Armenia and 2 Russian women.

About half of the women were from the same region where the Maternity House was located (51%), 35 of them were from other region (29%) and 24 from a town within the region (20%). This suggests that a large number of women do not deliver at their nearest health facility.

Less than half of the women with C-section had a medical insurance (43%), and 68 had no medical insurance. Only in 15%, in the case of 18 women, all costs of the delivery were completely covered by the medical insurance.

Comparison profile women

The table 11 and figure 16 below show a comparison of the three subgroups.

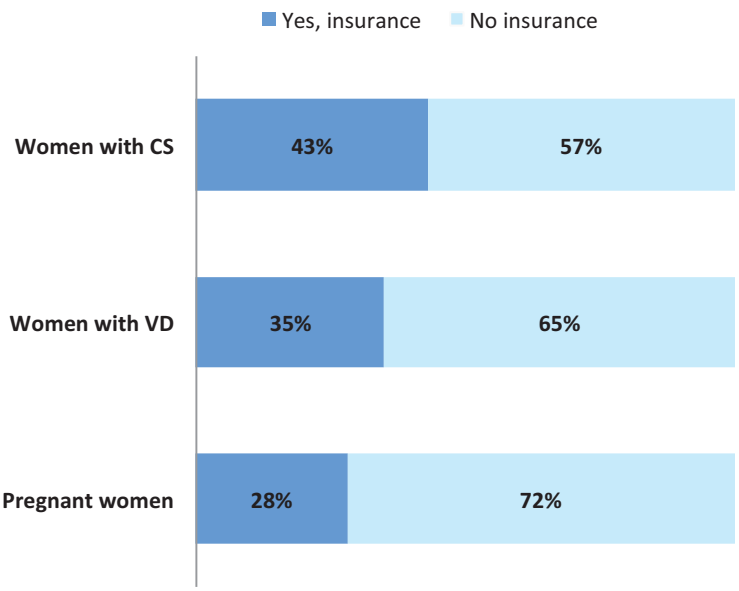
Table 11: Age distribution among pregnant and postpartum women

Age subgroup	CS	VD	Pregnant women
≤20	35 (20%)	20 (16.8%)	46 (26.9%)
21-35	129 (73.7%)	91 (76.5%)	117 (68.3%)
≥ 36	11 (6.3%)	8 (6.7%)	8 (4.7%)
Total	175	119	171

A majority of the women is not insured, this is the highest among the pregnant women (72%). More than half (57%) of the women who had underwent a C-section were not insured.

1 From 18 facilities: one facility had recently opened and had few to none C-sections been performed sofar.

Figure 16: Insurance status among pregnant and postpartum women



About 50% of the women live close the MH, whereas the other half have to travel to the MH/MU from a town within the same region, or from another region; this figure is about the same for all groups.

Antenatal information/visits to WCC

The vast majority of women had visited the WCC during their pregnancy (97%), on average they had 5-6 antenatal visits. 71 women from this group (60%) visited the WCC from within the MH; 28 a Centre within the region, but not within the MH they attended (23%); and 17 in another town (14%).

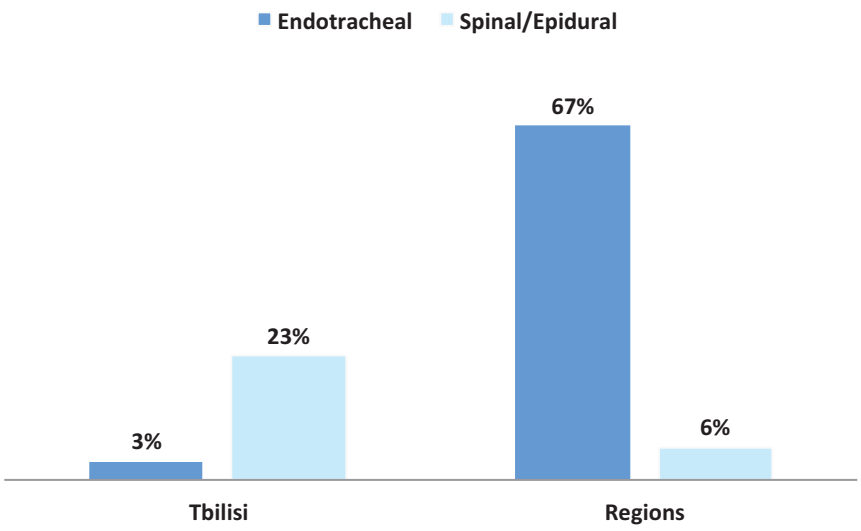
72 of the women (60%) thought that the visits were very useful, because the doctors were counseling them about their pregnancy and development of the foetus. Fourteen women (12%) reported a health problem such as high blood pressure, abdominal pain, a risk of spontaneous abortion, etc. because of this a number of women (3) visited the centre more than 10 times.

Overall, as concluded earlier, the level of information provided during the antenatal period is insufficient. It is striking to note the relatively high number of women who underwent a C-section who lacked information. About 40% of the women who underwent C-section (47 out of 117) were satisfied with the information received; however 30% mentioned they had missed information and did not know what the C-section involved; and another 30% had received none, or just little information about the delivery. For 24 of these 36 insufficiently informed women (67%), it had been a planned C-section, and for the remaining 12 it had been an emergency/urgent CS.

Anesthesia

The majority of the women (97%) could indicate which type of anesthesia was used: in 70% it was endotracheal, and only in 30% of the cases it was spinal anesthesia. In addition to the clear preference for endotracheal anesthesia, there are also some stark differences between the practices in Tbilisi and in the regions (see figure 17).

Figure 17: Regional variations in anaesthesia practices



Indications for C-sections, experience with the C-section

One of the questions was to ascertain whether the women knew the reasons for the C-section, as well as to assess their experiences with the surgery.

Some 37 women of 119 (31%) who had undergone C-section could not state the reason for the surgical delivery. For 11 women it was a repeated CS; and in 16 cases different reasons were named: breech presentation, multiple pregnancy, transverse lie or myopathy. In 12 cases women mentioned that the decision was made because of fear of labour and pain. 35 women said they had planned sterilisation that is why they decided to conduct CS.

In roughly one third of the women who had undergone C-section (37 out of 119), the decision to conduct a C-section was taken after a woman had gone into labour, of this group 21 mentioned prolonged pregnancy or Premature Rupture Of Membranes (PROM) as the reason for the surgical intervention.

On a follow up question whether the women were happy with the decision some 46 women mentioned that they had health problem, otherwise they would have preferred vaginal delivery. 13 women were happy at the beginning, but had changed their opinion after the delivery. 13 were not happy from the beginning because they had preferred a vaginal delivery. 27 women said that they were glad to have had CS because everything finished very quickly.

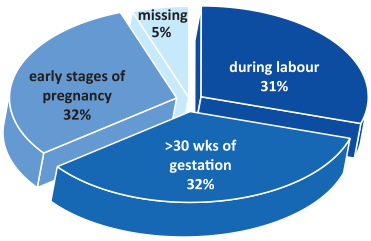
According to 25 mothers it was a bad decision to do CS, because they had problems after operation and if they had had comprehensive information they would have choose vaginal deliver. Two women reported that they had no information on advantages and disadvantages of CS and vaginal delivery and for that reason – mainly the fear for the 'normal' delivery' – they had decided to undergo a C-section.

Decision process and timing of the decision

According to 38 respondents the decision to perform the C-section was made by the doctor alone; and in 22 cases the decision was a joint decision by the woman and her Ob/Gyn.

In 69% of the cases, the decision to perform a C-section was taken during pregnancy; for the other 31% during labour. Of those who had taken the decision during pregnancy, roughly one third had taken the decision during the first and second trimester, and for the remainder the decision was taken during the third trimester.

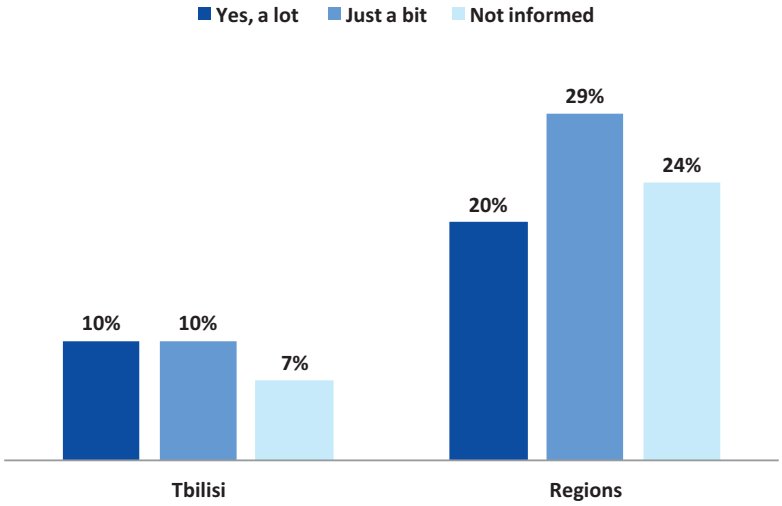
Figure 18: Time of decision on C-section



Source of information and client satisfaction

The figure below shows illustrates an overall need for improved information for women undergoing C-sections, but moreover the high number of women in the regions without proper preparation. An overview of the knowledge of women on the possible complications gives a similar distribution.

Figure 19: Information status women who underwent CS



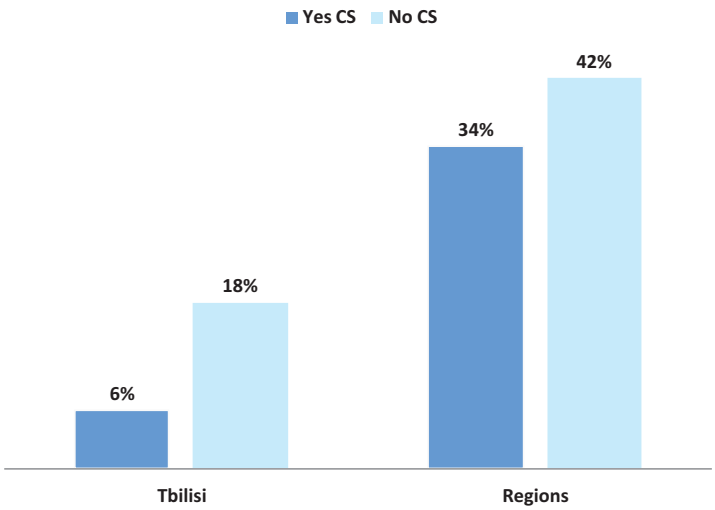
For a majority of the women (58%, 69 out of 119) their main source of information had been their physician. Friends was the second largest source of information for 25 women (21%), and the rest got their information through other channels: internet (6); tv/radio (4); folders (3), other sources (9). Only one woman mentioned the midwife as a source of information.

76% of the women were satisfied with the information they had received from the health staff (doctor), some 26% were not satisfied with the information provided.

Decision on future delivery

Whereas a relatively small majority of the women, 59% (57 out of 96 respondents, 23 did not answer the question/missing) tend to have a preference for a vaginal delivery in case of a future pregnancy, there is a difference noticeable when comparing women who delivered in Tbilisi with the women in the regions.

Figure 20: Future delivery preferences



Client satisfaction

On the question of the client satisfaction with the assistance of the midwife, 56% mentioned that they did not have had contact with a midwife; the remaining part mentioned it was appropriate.

An overwhelming majority of the women were very satisfied with the services, and rated them with a 10; on the question whether they had any advice for improvements there were no suggestions. On the other hand, 51 women added here (at the end of the interview) that they wished they had delivered vaginally.

4.6 Providers' profile and perspective

This section presents the findings from the semi-structured interviews with midwives and obstetricians/ gynaecologists. In total close to 200 health professionals participated in the study: 83 midwives and 109 Ob/ Gyn, from 18 health facilities.

4.6.1 Midwives

General characteristics

The average age of the respondents was 45, the youngest 23 and the oldest included was 68 years old (who had 35 years of experience and had worked for 42 years at the same facility). On average, midwives included in the study had 19 years of experience as a midwife.

A majority of the midwives (74%) had participated in trainings, primarily on contraception and reproduction. Twenty midwives had participated in training provided by JSI on Effective Perinatal Care (EPC) check.

Table 12: Midwives' training by type of HF

	SLR	Private	JSC	Total
No training	9	12	1	22 (26%)
Yes, on contraception, reproduction	11	23	4	38 (46%)
Yes, on neonatal care	3	2	2	7 (8%)
Yes, but can't concretise	2			2 (5%)
Yes, JSI training	3	8	9	20 (24%)
Total				83

Perception/role of midwife in perinatal care

The midwives were asked to respond to the questions on their **actual** and **preferred** role during different stages in the perinatal period. Not all interviewees provided background on their actual role in the different stages, however the responses to the question on whether they could see a role for themselves during the various stages of the perinatal process provide an interesting insight into their aspirations (table 13).

Table 13: Actual and preferred role of midwives in perinatal care	
Antenatal (n=75)	Only 17 respondents indicate to be currently involved in the antenatal period. Despite the fact that the majority is not involved (88%), many (66% of the respondents) do see a role for themselves in antenatal care
Vaginal delivery (n=82)	Whether a midwife could do more during a vaginal delivery is not clear-cut: 51 could see an increased role, 31 do not.
C-section (n=82)	63 midwives said their actual role during C-section is to receive a newborn. 14 midwives said they prepared pregnant women before the surgery. On the question whether midwives themselves see a role for them in the decision-making process regarding C-section, some 62% are hesitant and do not see a role for a midwife in that process. 64 do not see a larger role or any role at all for themselves in CS; 18 do think there is a role for them.
Post-delivery (2 hrs) (n=80)	An enhanced role during the post-delivery period is favourable to 20 midwives, the majority does not see a role for themselves at this stage.
Post partum period (n=81)	The group is divided about their role during the post partum period: 41 do not want a larger role, whereas the remaining 40 would like to increase their part in this part of perinatal care.
Overall: only a few respondent midwives are involved in more than one stage of perinatal care. Many are working under the supervision of the Ob/Gyn, though quite a large number (38) indicate that they are trained and confident enough to work independently without supervision of the doctors. 7 of them said they needed training in new guidelines and protocols.	

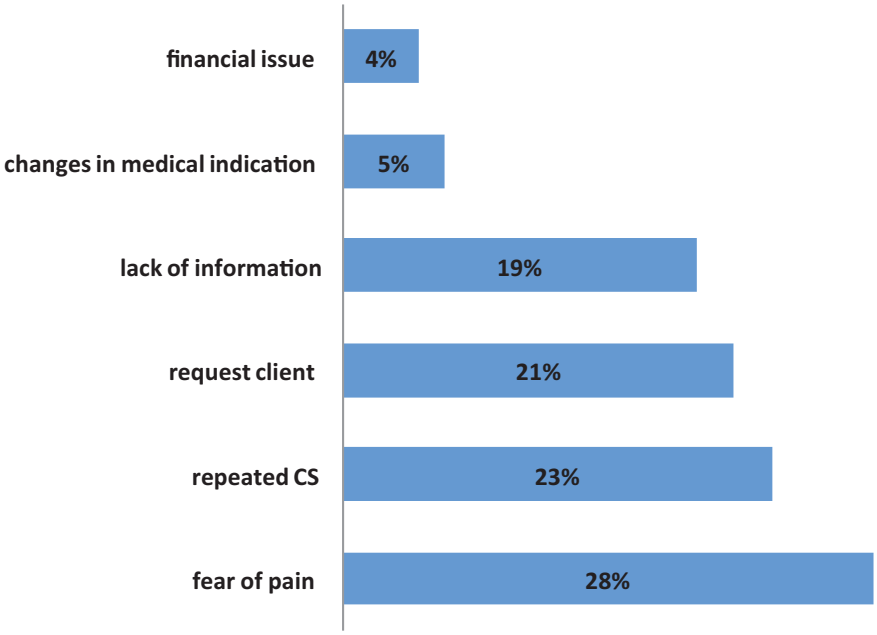
Perception on C-section

A vast majority of the midwives (80%, 66 out of 82) see an increased trend in the number of C-section that are being performed at their MH/MU; 9% reported that the number of C-sections decreased over the past period; and 12% thought they were about the same. A majority of the midwives (77%, 62 out of 81) indicate that they generally know why a C-section was performed.

Fear of pain during a 'normal' vaginal delivery is the main reason why the CS rate has increased, according to 42 midwives. 21 respondents suggested that in spite of efforts of Ob/Gyn to convince women on the possibility of delivering in a normal way, women still prefer CS. And although more than half of the respondents thought that many of the C-sections at their MH/MU could be avoided, only 21 explained how. Some of the midwives thought that unnecessary C-sections could be avoided in case of improved pain control methods and pain management; others saw the need to improve the level information among pregnant women. They were of the impression that many C-sections are being performed due to clients' demand mainly because of a lack of information on pregnancy and delivery. Almost a third (30%) of the midwives stated that pressure from the husband/partner was one of the main reasons for C-section.

Figure 21 below shows a listing of possible causes of an increased CS rate as mentioned by the midwives.

Figure 21: Possible causes increased CS rate according to midwives

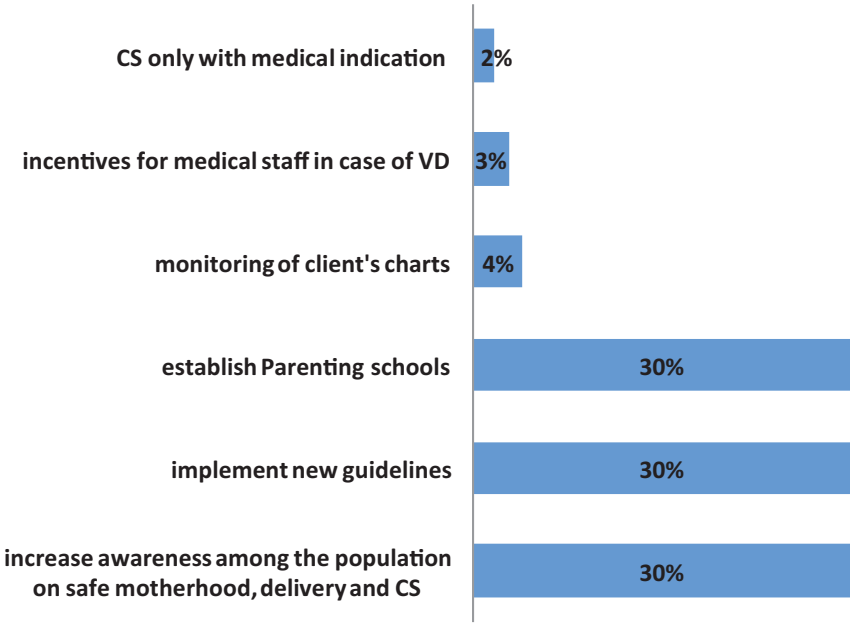


Half of the midwives state that they did not play a role in the decision making process regarding the delivery and/or the C-Section since the doctor always takes the decision. Only 14 midwives indicate that the Ob/Gyn asks her opinion whether a C-section is appropriate or not. The majority (83%) state that they are rarely or never asked their opinion.

Changes/improvements

The midwives included in the study were clear on the much-needed changes for their MH/MU, as well as for the country as a whole. Below an overview of suggested changes and recommendations (174 in total):

Figure 22: Midwives' recommendations for improvements



4.6.2 Obstetricians/gynaecologists Obstetricians/gynaecologists

General characteristics

The average age of the 109 Ob/Gyn participating in the study was 49; 62 of the respondents are younger than 50 years old, the other 47 are 50 and older. 13 gynaecologist/obstetricians have less than 10 years of professional experience; the vast majority (91) has 10 years or more years of experience. The mean duration of professional experience is 22 yrs.

A majority of the Ob/Gyn works in one health facility only; and 38 of them have never changed their workplace since they started practicing. Their experience ranges from 6 to 50 years of practice, with the oldest participant (75 yrs) practicing 50 yrs in the same MH/MU.

A majority of the Ob/Gyn participated in trainings, predominantly trainings on contraception and family planning.

Perspective on role of the midwife

On the question whether the Ob/Gyn had organised non-formal training sessions (on-the-job training/ coaching) with midwives many answered positively. Many claim to advice the midwife on the workfloor, in particular on the management of the delivery.

13 Ob/Gyn complained that the partogram is not introduced in their maternity houses. 43 gynaecologists said that they do not trust midwives to fill the partogram because of limited skills. About half of doctors trust midwives to perform Active Management of the Third Stage of Labour independently; and 56 thought that a midwife – provided in close collaboration with a neonatologist – could keep some steps of the 'warm chain'.

A majority of the Ob/Gyn recognized that midwives have no a role in C-sections and 46 do also not see a role for them in this part of the work. Those who do see a role (64) mention for example preparing clients for the surgery, or receiving the newborn after the medical intervention. 77 thought that it is not possible to increase the participation of midwives in CS.

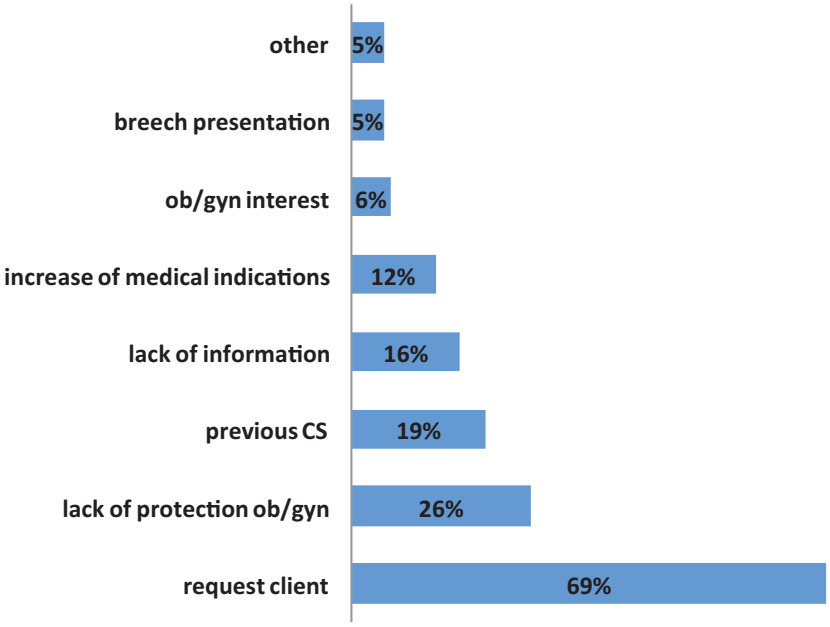
On the questions regarding the role of the midwife in other aspects of perinatal care, the group was divided: half of the Ob/Gyn did not see a role for the midwife in the antenatal period, whereas the other half do encourage the involvement of midwives, for example in Parents' Schools. According to 16 gynaecologists it is important to increase the independence of midwives, under conditions of supervision and monitoring by the Ob/Gyn; 20 respondents see a role for midwives in the postnatal period.

Perspectives on C-sections

The knowledge of Ob/Gyn on C-section rates was assessed, asking them the international recommended rate (which is between 5-15% rate), and the CS rate at the MH/MU where they worked.

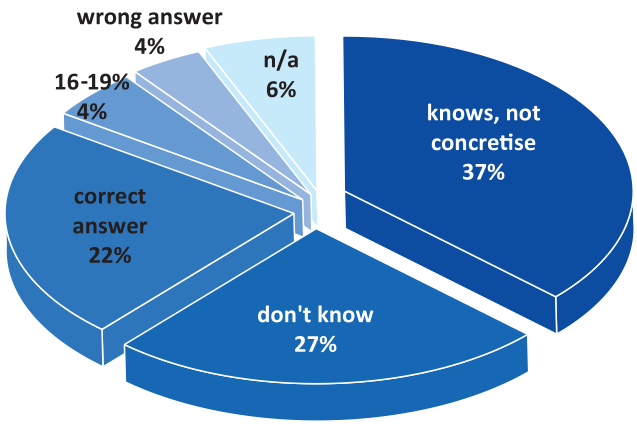
Almost all Ob/Gyn (108) thought that the number of C-sections in Georgia had increased during the last 5 years. 63% attributed this increase mainly to the demand of clients. Only one respondent does not believe that the rate has increased.

Figure 23: Possible causes increased CS according to Ob/Gyns



On the question regarding the knowledge on international recommendations of C-section rate, quite a number of respondents did not give a correct estimate. More than one third (37%) indicate that they know the recommended range, but do not concretise. 27% of the obstetricians/gynaecologists state that they do not know the international recommendation. Some 22% gave a correct answer (mentioning between 8% and 15%). See figure 24.

Figure 24: Knowledge on international recommendation CS



The following table illustrates the answers on the WHO recommendation by type of facility.

Table 14: Knowledge among Ob/Gyn on international recommendations C-sections				
	SLR	Private	JSC	Total
Know, not concretise	10	28	2	40 (37%)
Don't know	6	17	6	29 (27%)
15% or less	4	15	5	24 (22%)
16 – 19%	4	-	1	5
Wrong answer	-	4	-	4
N/A	-	-	7	7
Total	21	64	21	109

Some 19 (out of 109, 17%) Ob/Gyn did not know the CS rate in their own MH/MU. 16 thought it was below 15% (one thought it was as low as 5%). More than half mentioned percentages of 20% and beyond, 19 (17%) percentages of 40 and more; some estimated it as high as 75%.

On the follow-up question whether they considered the CS rate in their MH/MU a problem, interestingly quite a number of Ob/Gyn did not consider the CS rate a problem (15 providers who previously had stated a CS rate of 25% and beyond in their facility). On the other hand, some Ob/Gyn stated the high CS rate to be a problem, even when the rates in their own facilities were within the international recommendations. Overall, 60% considered the CS rate as a problem.

Improvements/changes

Respondents were asked whether they would change anything in their MH/MU if they were in a position to make changes regarding perinatal/maternal health. Some 28% would not change anything, and 10% was undecided.

However, the majority of 62% would make changes, and almost half of them (31 respondents) thought it would be good to establish a Parents' School in their facilities. Other suggestions included the improve provision of information to clients.

On the question regarding recommendations about C-sections, some respondents suggested to have the C-Section rate monitored by the State so as to see to it that they are conducted only in case of medical need (25 respondents). To some (15 persons) it is essential to raise awareness within the society on C-sections. Others (14 respondents) indicated the need to clarify medical indications (i.e. on whether or not conduct C-section in case of breech presentation and repeated C-Section). A few respondents (5) mentioned the need to implement the guidelines on CS.

5 Discussion

Georgia has seen an increase in the number of C-sections: a more than threefold rise of the national average, which increased over the past decade from 9.3% in 2000 to 31.5% in 2010. However, awareness or concern about these increasing rates among society, (future) clients and health professionals is not universal.

The study aimed to determine factors leading to the increased number of C-sections in the country, and how clients and providers perceive this increase. The study did not assess whether individual C-sections were medically indicated or not, and hence it did not seek to ascertain whether the observed increase was related to any increase in medical conditions predisposing to C-sections. Whilst there are no indications that such is the case, the study did look into determinants of C-sections in Georgia, in particular the demand and supply factors underlying those C-sections without an apparent medical need.

The claim of midwives and obstetricians/gynaecologists that one of the main reasons for the high CS rate is the increasing request by clients cannot be confirmed by the study. While the majority of pregnant women and a great number of those whose pregnancy resulted in a C-section do prefer a vaginal ('normal') delivery, it is true that quite a substantial number of women preferred a surgical delivery, or mentioned that the C-section took place at their own request, even if there was no medical indication. It was striking to note that 31% of women who underwent a C-section could not mention the reason why they had undergone surgery. It was even more striking that for more than two thirds of the women the decision on the C-section was taken during pregnancy; and for one third this decision was even taking during the first trimester of their pregnancy. Overall, the study findings illustrate a lack of information and a great deal of anxiety on the side of pregnant women about pregnancy and delivery, including fear for pain, which may trigger their preference for undergoing a C-section rather than have a normal delivery.

One of the issues the study touched upon is the financing issue. Having a delivery is a costly undertaking in current day Georgia. The price of a delivery averages around 400 GEL; the price of a C-section varies: from 400, up to 1700 GEL in case of C-section on maternal request in one health facility. A majority of the women in the study were not insured: close to three quarters of the pregnant women, 65% of the women with a VD, and 57% of the women who underwent a C-section. Moreover, not all insured women were freed of additional costs, because their insurance scheme did not cover the full costs of the delivery. The high out-of-pocket expenditures on health may have motivated some women (some even still in their twenties) to opt for a C-section in order to combine this procedure with tubal ligation. This practice illustrates how health financing issues directly impact upon medical practice, as seen from the perspective of the client. Perverse financial issues may well be a determinant of the high CS rate in Georgia, though this is hard to substantiate because of the sensitiveness of the issue. Respondents were hesitant to elaborate on this, and therefore only a few anecdotal remarks can be made. Some providers mentioned that they had performed C-section on demand because they felt pressured by the clients, and did not want to loose them as clients.

One of the findings worth investigating more in-depth is the area of pain control/management during a vaginal delivery and anaesthesia during a C-section. Regarding the latter, providers seem to prefer endotracheal anaesthesia instead of regional (spinal) anaesthesia which is recommended by the WHO. Some 70% of the C-section was performed with endotracheal anaesthesia, and among this group the largest part was found in the regions. This finding does indicate many gaps among the providers when it comes to modern methods of anaesthesia, including in skills, information, training, and confidence.

A lack of information on pain control methods during a vaginal delivery, and possibly access to such methods, may also be a determinant of demand for C-sections among women. The study did find that quite a number of pregnant women consider a C-section less painful than a vaginal delivery, and that fear of pain is a reasonable argument for having a C-section. Midwives stated that fear of pain has motivated quite some women to have a C-section, however that such practices could be curtailed by providing access to and information on pain control and management (such as the use of epidural anaesthesia) during delivery. Overall, increased access to pain control methods may positively influence a woman's preference for a normal 'vaginal' delivery. On the other hand, such methods require specific skills/training, which may be the reason for their low use.

According to the midwives, the lack of information is a serious shortcoming in perinatal care. As midwives suggested, better-informed clients are significantly less stressed before or during childbirth thereby reducing the need for unnecessary medical interventions, hence the risks of bad maternal and/or neonatal outcomes. The antenatal period should be more than just a medical check-up, allowing women and their partners to prepare themselves for the delivery and their parenting role. Unfortunately the role of the midwife in the antennal period is limited or, as in most cases, practically non-existent. This has become the domain of the WCC's and within these centres that of the Ob/Gyn. Midwives make a claim for better birth-preparedness

of pregnant women. One way in which this could be achieved is through the concept of 'Parents' Schools'. Study findings demonstrate the interest of midwives to broadening their scope of work to include antenatal and postnatal care. To a certain extent, they are supported by some of the obstetricians/gynaecologists, who would see an enhanced role for the midwife. This group however is still a minority.

Almost all Ob/Gyn know that the C-section rate in Georgia has increased, though not all see this as a cause for great concern. Those who do, generally have a better understanding of the international recommendations, and also tend to work in MH/MUs with lower CS rates. According to the group of Obs/Gyns, the main reason for this trend is the increased demand of clients, leaving them with few options to refuse for fear of losing clients, income. In addition, some feel legally unprotected and they are therefore inclined to performing C-sections. National guidelines and medical protocols are absent, and common (evidence-based) standards are not well known. As the analysis of the delivery log shows, a majority of the breech presentations results in C-section and also a substantial amount of multiple foetuses are seen as medical indications for delivering in a surgical manner. Lastly, the call for national guidance also stretches out to rules and regulations on the management side. The study has shown that facilities that introduced measures to curb the trend of increased CS rate, fail to achieve their goals because such measures can't be implemented in isolation.

6 Conclusions

The reasons for the high and increasing rate of C-sections in Georgia are multiple, and there are clear indications that the high rate is the result of the combined effects of:

(a) Women having little information about pregnancy and about the physiology of a natural delivery, and the associated fear for pain and for the possibility that something may go wrong.

(b) Service providers not having all the required technical knowledge and skills, not sufficiently adhering to professional standards and, in some cases, being sensitive to perverse financial incentives that easily make them resort to surgical interventions.

The exact weight of each of the above factors is not known for the time being. It would require more in-depth studies and / or different types of study (such as medical audits on management of pregnancy and delivery by medical professionals).

Some important conclusions however can be drawn in relation to the specific objectives that have guided the present study. Below an overview of the main conclusions organised around the 7 study objectives.

Objective 1: Trends in Caesarean section rates

- NCDC data illustrated that the rate of deliveries taking place through C-sections in Georgia increased from 9.3% in 2000 to 31.5% in 2010, which is more than threefold over a period of 10 years. The percentage of C-sections in the sample is higher than the national average of (32%). A slightly higher percentage of the C-sections are first deliveries (55%, against 45% repeat deliveries). In SLR the percentage CS is well below the averages nationally and in the sample (18%); this figure is higher in private facilities and JSC: 40% and 35% respectively.

- The rates vary greatly from one institution to the other, with some health facilities having C-section rates of well over 50%. Almost half of the C-sections are planned in advance, whereas the other 50% concerns emergency C-sections. This trend has not changed significantly over the past decade.

- The C-section rate in Societies with Limited Responsibility (previously public institutions) is much lower than that in private facilities and joint stock companies: 19.7% versus 32-33%.

- About 50% of all C-sections are planned in advance, that is before onset of labour. The other half involves emergency C-sections, which are decided upon after onset of labour. The distribution of planned versus emergency CS appears about equal (50%-50%) and relatively consistent over time.

- The percentage planned CS in case of a repeat delivery saw the highest increase over the past decade (compared to the other categories): from 20% in 2000 and 39% in 2010.

Objective 2: Regional/geographical variations in Caesarean section rates

- NCDC data show the wide variation in C-section rates in the country: in some regions the rate was 77%, whereas as low as 10% in other regions. Data from the delivery logs confirm these regional variations.

Objective 3: Obstetrical complications, reasons for Caesarean sections

- National data on deliveries do not state the reasons for the C-sections, making it impossible to distinguish which proportion of C-sections are conducted based on medical indications (and which type of medical indication).

- In none of the MHs the forceps is being used. Only nine vaginal deliveries were assisted through vacuum procedure. This figure is considered very low and may indicate lack of practical skills to perform this procedure. Correct implementation of forceps or vacuum assisted vaginal deliveries might have prevented surgical interventions.

- *Cephalic presentations beyond 37 weeks (without stimulation)*: 24% of such cases ended in CS (604 of the 2477). C-sections in this category are more frequent among first deliveries.

- The group with the lowest risk of C-section (on average 2-3%) is: **repeated vaginal delivery, with a single foetus and cephalic pregnancy (>37 weeks gestation without stimulation and spontaneous delivery).** The findings in this study show a percentage of 15% in this subgroup, which suggests that a more than average percentage of C-sections in this subgroup was conducted without medical indication.

- Another group with a relative low risk of C-section (on average 14-15%) is: **first vaginal delivery, with a single foetus and cephalic pregnancy (>37 weeks gestation without stimulation and spontaneous delivery).** The main reasons for C-Section in this sub-group are complications during labour, such as dystocia or foetal distress. According to our study the percentage of C-Section in this sub-group is 32%, which suggests undue C-Sections, not justified by any medical indication.

- **The percentage of stimulation in all groups of cephalic presentation > 37 weeks** is significantly low (45 among first deliveries and 14 among repeat deliveries), which indicates that stimulation of delivery is not a common practice in Georgia.

- Almost all (one exception) of the 33 transversal presentations lead to C-section. The vast majority of the breech presentations (83%) resulted in C-section. This figure is even higher among breech presentations in case of a first delivery: 94%. In case of a breech presentation (repeat delivery) this figure is much lower with 67%.

- 66% of the multiple foetus were delivered through C-section.

Objective 4: Comparison between pregnant women, those that underwent CS, and those who had a vaginal delivery

- The majority of the births are from mothers between 21 and 35 years of age (VD and CS). With increasing age, the number of C-section increases: from 30% in the under 20 year olds to 36% in the age group 21-35 years and 56% in the women over 36 years of age.

- A majority of the women in the study were not insured and had to pay for the delivery out of their own pockets. This percentage is the highest among pregnant women (72%); close to two thirds (65%) of the women who had a vaginal delivery and 57% of the women who underwent CS.

- A majority of the women (with VDs or C-section) deliver in private MHs, this trend is consistent among all the three age groups. Compared to women in the other two age groups, women over 36 years appear to prefer the private sector (private and JSC combined) for the delivery, whether for VD or CS. Among the women with CS there is also no major difference between the age groups in terms of type of facility, except for women over 36 years of age, where only one woman of that age group had a C-section in an SLR for the CS.

- Despite the fact that a vast majority of the women had visited a Women's Consultation Centre during her pregnancy, the overall level of information and birth preparedness is low and appears insufficient. Of the pregnant women 60% claimed to be well prepared, though a significant number stated to be afraid of the pain during delivery and have limited information. Less than half of the women who had a vaginal delivery indicated that the information was sufficient; some 28% indicated that they had received little information; and 9% was not informed at all.

- Despite the fact that a majority of the women (all three groups) have visited the Women's Consultation Centres, not all seem well prepared for the delivery. Almost all women who had a C-section could mention which type of anaesthesia was used. 70% of women with C-section received endotracheal anaesthesia instead of regional (spinal) anaesthesia, which is recommended by WHO. There are stark regional differences in the use of anaesthesia. In Tblisi there is low endotracheal use, which in contrast in the regions is the preferred type of anaesthesia.

Objective 5: Providers' perspective on C-sections

Midwives

- The average age of the midwives in the study was 45, the youngest 23 and the oldest included was 68 years old (who had 35 years of experience and had worked for 42 years at the same facility). On average, midwives included in the study had 19 years of experience as a midwife. A majority of the midwives (74%) had participated in trainings.
- The midwives were asked to respond to the questions on their actual and preferred role during different stages in the perinatal period. Only a few respondent midwives are involved in more than one stage of perinatal care. Many are working under the supervision of the Ob/Gyn, though quite a large number (38) indicate that they are trained and confident enough to work independently without supervision of the doctors. Less than 10% are currently involved in the antenatal period; though many (66%) do see a role for themselves in ANC. For a majority of the midwives their actual role during C-section is to receive a newborn, only a few (14 respondents) mentioned that they prepared pregnant women before the surgery. Midwives generally do not see an increased role for them in C-sections.
- **Perception on C-section.** A vast majority of the midwives (80%) see an increased trend in the number of C-section that are being performed at their MH/MU; most of them generally also know the reason why a C-section was performed. According to them, fear of pain during a 'normal' vaginal delivery is the main reason why the CS rate has increased. Some midwives had observed that in spite of efforts of Ob/Gyn to convince women on the possibility of delivering in a normal way, women still prefer CS. And although more than half of the respondents thought that many of the C-sections at their MH/MU could be avoided, only 21 explained how. Some of the midwives thought that unnecessary C-sections could be avoided in case of improved pain control methods and pain management; others saw the need to improve the level information among pregnant women. They were of the impression that many C-sections are being performed due to clients' demand mainly because of a lack of information on pregnancy and delivery. Almost a third (30%) of the midwives stated that pressure from the husband/partner was one of the main reasons for C-section.
- The midwives were asked to indicate areas for improvement in perinatal care. Three main areas mentioned were: need to establish Parents' Schools; implement new guidelines; increase awareness among the population on safe motherhood, delivery and C-sections.

Obstetricians/gynaecologists

- The average age of the Ob/Gyn was 49; the vast majority having more than 10 years of professional experience, with the oldest participant (75 yrs) practicing 50 yrs in the same MH/MU. A majority of the Ob/Gyn works in one health facility only; and about one third has never changed their workplace since they started practicing. A majority of the Ob/Gyn participated in trainings, predominantly trainings on contraception and family planning.

- **Perspective on role of the midwife:** Ob/Gyn indicate that they are hindered in their work by the lack of protocols and national guidelines (which would give them not only information but also some protection). Also, use of the partogram in health facilities is not universal, some 12% of Ob/Gyn do not use it. Close

to half of the Ob/Gyn would not trust midwives to fill the partogram because of limited skills, however about a similar percentage trusts midwives to perform Active Management of the Third Stage of Labour independently and keep some steps of the 'warm chain'. A majority of the Ob/Gyn recognized that midwives have no a role in C-sections and 46 do also not see a role for them in this part of the work. Those who do see a role (64) mention for example preparing clients for the surgery, or receiving the newborn after the medical intervention. 77 thought that it is not possible to increase the participation of midwives in CS. On the questions regarding the role of the midwife in other aspects of perinatal care, the group was divided: half of the Ob/Gyn did not see a role for the midwife in the antenatal period, whereas the other half do encourage the involvement of midwives, for example in Parents' Schools. According to some, it is important to increase the independence of midwives, under conditions of supervision and monitoring by the Ob/Gyn; about one fifth see a role for midwives in the postnatal period.

- **Perspectives on C-sections:** The obstetricians/gynaecologists generally do not think there has been a change over time in the type of conditions that are considered 'obstetrical complications', and in particular those that require C-sections. But 12% do think that there has been a change, but could not substantiate it.

- Almost all Ob/Gyn thought that the number of C-sections in Georgia had increased during the last 5 years. 63% attributed this increase mainly to the demand of clients. Only one respondent does not believe that the rate has increased. On the question regarding the **knowledge** on international recommendations of C-section rate, quite a number of respondents did not give a correct estimate. More than one third (37%) indicate that they know the recommended range, but do not concretise. 27% of the obstetricians/ gynaecologists state that they do not know the international recommendation. Some 22% gave a correct answer (mentioning between 8% and 15%). 4% gave the wrong answer and another 4% was close to the right answer.

- 17% of the respondents did not know the CS rate in their own MH/MU. More than half mentioned percentages of 20% and beyond and some even mentioned figures up to 75%. On the follow-up question whether they considered the CS rate in their MH/MU a problem, interestingly quite a number of Ob/Gyn did not consider the CS rate a problem. On the other hand, some Ob/Gyn stated the high CS rate to be a problem, even when the rates in their own facilities were within the international recommendations. Overall, 60% considered the CS rate as a problem.

- The respondents were asked whether they would change anything in their MH/MU if they were in a position to make changes regarding perinatal/maternal health. One third would not make changes; however a majority would. Suggestions included: the establishment of Parents' Schools; improve information to pregnant women; monitor the C-Section rate; raise awareness within the society on C-sections. Some 10% indicated the need to clarify medical indications (i.e. on whether or not conduct C-section in case of breech presentation and repeated C-Section), and some see the need to implement the guidelines on CS.

Objective 6: To obtain the clients' perspectives on C-sections, including their current levels of information level and their attitudes, and the reasons why women themselves at times request for C-sections.

- It is striking to note that a relatively high number of women who underwent a C-section lacked information: among the women with C-section, 31% was not able to indicate the reason why they had the C-section. Only 40% of the women who underwent C-section reported to be satisfied with the information received. Of the remaining 60%, half had missed information and did not know what the C-section involved; and another 30% had received none, or just little information about the delivery. It is even more striking to report that those who report to be insufficiently informed it had been a planned C-section (67%).

- Of the group women who underwent a C-section, the level of being informed is the lowest in the regions as compared to women who delivered in Tbilisi. For a small majority of the women (58%), their main source of information had been their physician. Friends were the second largest source of information (21%), and the rest got their information through other channels. Only one woman mentioned the midwife as her source of information.

- Another striking finding is that 31% of the women who had undergone C-section could not state the reason for the surgical delivery. The reasons for the CS vary from medical conditions on the one hand (during pregnancy or during delivery) to other reasons such as fear of the delivery, and mostly fear for

pain during the delivery. Some had opted for C-section because they had planned sterilization and hence could save on costs.

- Regarding their experience with the C-section, about half were happy with the decision because of the health problem. Some regret, and mention that if they would have had more information and be more prepared, they would have preferred a vaginal delivery. 13 women were happy at the beginning, but had changed their opinion after the delivery. Quite a few were happy with the surgery because it all finished quickly.

- A small majority of the women who underwent a C-section (59%) would like to have a vaginal delivery in case of a future pregnancy; the percentage opting for another C-section is relatively higher in the regions, as compared to those who delivered in Tbilisi. Of the pregnant women, the vast majority (81%) prefers a vaginal delivery. Of the remaining who preferred a C-section only 22% had a clear medical indication, 25% followed the doctor's advice and 53% was going to have the C-section because of their own request.
- An overwhelming majority of the women were very satisfied with the services (all three subgroups), and rated them with a high number. Almost half of the women who underwent a C-section mentioned at this stage of the interview (the end) that they wished they had delivered vaginally.

Objective 7: To find out at which stage of pregnancy the decision as to the type of delivery is being taken (physiological delivery or C-section).

- In 69% of the cases, the decision to perform a C-section was taken during pregnancy; for the other 31% during labour.

- Of those who had taken the decision during pregnancy, roughly one third had taken the decision during the first and second trimester, and for the remainder the decision was taken during the third trimester. This suggests that there is no medical indication, since the most frequent indications for C-sections (i.e. dystocia or failure to progress in labour, breech presentation, foetal distress) can be diagnosed only in the late stage of pregnancy or during labour.

7. Recommendations and plan of action

A set of recommendations follows from the main findings of the study. They are organised around interventions targeting:

- **Clients' and societal perspective**: increase information and reduce fear, and create demand for adhere to international standards
- **Providers' perspective**: increase professionalism, awareness and technical skills.

7.1 Recommendations

Clients' perspective, increase information and reduce fear through:
- **establishment of Parent's Schools**
- **strengthening ANC and PNC**

Societal perspective, adhere to international standards, through:
- **setting of national standards and guidelines**
- **creation of public awareness on C-sections and safe motherhood in general**

Stakeholders	Role / actions
Ministry of Labour, Health and Social Affairs; and the National Reproductive Health Council	• Support the establishment of Parent's Schools throughout the country (in MHs and WCCs). • Support an increased role of midwives in ANC and PNC, based on clearly defined and international recommended standards (such as the Essential Competences for Basic Midwifery Practice, ICM 2011[1]). • Include visits to the PS in the insurance package for vulnerable groups.
MAG	• Increase MAG's activities in the regions (IEC) for clients and midwives. • Develop training package on 'Safe Motherhood' for clients. • Support the establishment of Parent's Schools throughout the country (in MHs and WCCs), and lobby for the involvement of midwives in the PS. • Liaise with other professional associations on improved perinatal care, public awareness on C-sections and safe motherhood. • Initiate a follow-up study on community, and male perspectives on safe motherhood, birth preparedness, C-sections etc. (jointly with GOGA).
GOGA	• Support the establishment of Parent's Schools throughout the country (in MHs and WCCs). • Support an increased role of midwives in ANC and PNC through increased support, advice of Ob/Gyn, and collaboration with midwives on the workfloor. • Support the conduct of a follow-up study on community, and male perspectives on safe motherhood, birth preparedness, C-sections etc. (jointly with MAG).
Management of MH/MUs	• Establish PS within the health facility. • Negotiate with insurance companies on PS (content and access).
Insurance companies	• Include visits to PS in the insurance packages. • Negotiate with the private sector to include visits to PS in corporate packages. • Increase public information on the content of their insurance packages and invest in IEC for (future) clients.

1 Outlining the key midwifery concepts, the scope of midwifery practice, and the required competences in six different aspects, from the community perspective to the role of a midwife in pre-pregnancy/FP, ANC, labour and childbirth, postpartum and PNC (ICM, 2011).

Providers' perspective, increase awareness and skills through: - strengthening of Continuous Medical Education Programmes and skills training - implementation of international standards and evidence-based practices	
Stakeholders	Role / actions
Ministry of Labour, Health and Social Affairs; and the National Reproductive Health Council	• In the context of the health reform process, clarify/reaffirm the status of the status midwives. • Elaborate a Continuous Medical Education Training Programme for midwives. • Monitor C-section practices, including anesthesia, and increase access to modern management methods, based on international recommendations and standards. • Support providers' training on spinal/epidural anaesthesia (in case of vaginal deliveries).
MAG	• Lobby for CME for midwives. • Develop and provide training on PS and other relevant topics in perinatal care, according to Train the Trainers and Peer-to-Peer education methods. • Support GOGA with the development of guidelines and protocols on key topics, including AMTSL, cold chain, and so on. • Collaborate with professional associations on the development of task-shifting models, job descriptions etc (based on the ICM Essential Competences for Basic Midwifery Practice).
GOGA	• Based on the guidelines elaborated by MoLHSA, development of specific Protocols for midwives on selected key topics in perinatal health (AMTSL among others). • Elaborate and implement guidelines and protocols on C-section. • Establishment of CME programme for Gynaecologists, taking into consideration international recommendations, evidence-based practices and modern approaches to pregnancy and childbirth.
Management of MH/MUs	• Implementation of already elaborated guidelines and protocols in the MHs. • Evaluate and redefine staffing models taking into consideration role differentiation between Ob/Gyn, revised job descriptions. • Stimulate a learning environment and facilitate health professionals' participation in formal and non-formal training/education. • Establish budgetary allocations for CME of medical staff members.
Insurance companies	• Monitor providers' practice in C-sections, following international recommendations. • Inform providers on their policies regarding C-sections, and other aspects of perinatal care.

7.2 Plan of action MAG

During the second HSR workshop (March 2011), MAG members and board brainstormed on possible use of the findings, and prepared a plan of action for data dissemination. This resulted in the elaboration of a draft plan of action, with actions to be undertaken in the next 1-2 years.

Actions will be taken in two domains:

(1) Awareness raising among professionals and the general public on the findings, among others:

- A presentation of the study at the Annual General Meeting of MAG, on May 5th, 2011.

- A presentation of the study at the final conference of the 3-yrs MATRA funded project 'Enhancing the Quality of Care'.
- Printing and distribution of the report (full version and summary version in Georgian and English).
- Dissemination of key findings through population education materials (brochures, folders, posters)

(2) Policy development and improving practices in MH/MUs. Actions in this domain will be taken jointly with MoLHSA, GOGA, insurance companies, and others. The above-presented list of recommendations will guide this process. One of the first areas of action will be the support to the establishment of Parents' Schools, as findings from the study confirm lack of information and fear of the delivery as areas of concern. Parents' School are seen as complementary actions within ANC, and as such important instruments in increasing access to information among pregnant women and their partners, family and enhancing their birth preparedness.

List of reference documents

Belizán J, et al. (2007). *Health Consequences of the Increasing Caesarean Section Rates.* Epidemiology: July 2007 - Volume 18 - Issue 4 - pp 485-486. doi: 10.1097/EDE.0b013e318068646a

Belli P, Gotsadze G, Shahriari H (2004). *Out-of-pocket and informal payments in health sector: evidence from Georgia.* Health Policy 70 (2004) 109–123

Chanturidze T, T Ugulava, A Duran, T Ensor, E Richardson (2009). *Georgia: Health system review. Health Systems in Transition;* 2009; (11)8:1-116. European Observatory on Health systems and policies

Costa et al. (2007). *Using a Caesarean Section Classification System based on characteristics of the population as a way of monitoring obstetric practice.* Reproductive Health 2010, 7:13

Hogan, C (2010). *Maternal mortality for 181 countries, 1980—2008: a systematic analysis of progress towards Millennium Development Goal 5.* The Lancet, Volume 375, Issue 9726, Pages 1609 - 1623, 8 May 2010. doi:10.1016/S0140-6736(10)60518-1

ICM (2011). ICM Essential Competences for Basic Midwifery Practice

NCDC annual reports, [Online] Available from: http://www.ncdc.ge/pages/p_520_en.htm [Accessed 10/04/2011]

NCDC (2009) *Health and Health Care, Statistic Yearbook,* [Online] Available from:

http://www.ncdc.ge/Eng/Statistics/Statistical_Reports/2009EN/Chapter%203-Maternal%20and%20Child%20Health.pdf [Accessed 1/04/2011]

UNICEF/Curatio IF/Chkhatarashvili K, Chikovani I, Asatiani T (2006). Assessment of Perinatal Care in Georgia

USAID/Coreform (2009). Concept of Perinatal System Strengthening in Georgia

WHO, Health system performance assessment 2009. Wold Health Organization Regional office for Europe.

WHO (1985). Appropriate technology for birth. *Lancet* 1985, 326(8452):436-7

WHO/Lauer J, Betrán A. et al (2010). *Determinants of caesarean section rates in developed countries: supply, demand and opportunities for control.* World Health Report (2010) Background Paper, No 29

WHO (2010). *Caesarean section without medical indication increases risk of short-term adverse outcomes for mothers.* Policy Brief. WHO/RHR/HRP/10.20

Annexes

Annex 1: Overview study objectives, variables and data sources

Table 15: Objectives, outcome variables, data sources

Specific objectives	Outcome variable	Data source
1. To identify the trend over the past 10 years in C-section rates	- vaginal deliveries (2000-2010) - C-sections (2000-2010)	NCDC Data
2. To identify regional/geographical variations in C-section rates in Georgia	- vaginal deliveries (2000-2010) - C-sections (2000-2010) - VD and CS at selected MHs, and during reporting period (Nov-Dec 2010)	NCDC Data Checklist delivery log
3. To document the changes over time in the type of conditions that are considered 'obstetrical complications', and in particular those that require C-sections	- Robson classification system of C-section - knowledge, attitude and practice regarding CS	Checklist delivery log Survey providers (obst/gyn, midwives)
4. To compare the profile of women who underwent CS with that of women who had a vaginal delivery	- Robson classification system of C-section - other characteristics (age, gestation history, place of living, type of MHs etc)	Checklist delivery log Survey clients (women with CS and women with VD)
5. To ascertain perspectives of midwives and obstetricians/ gynaecologists on C-sections (trends in general, situation in Georgia and in selected MHs)	- knowledge about CS (facts, trends) - attitude	Survey providers (obst/gyn, midwives)
6. To obtain the clients' perspectives on C-sections, including their current levels of information level, attitude and reasons for Caesarean section on demand	- knowledge and attitude regarding VD and CS among clients - client satisfaction and perspective on the role of the midwife	Survey clients (women with CS, with VD)
7. To find out at which stage of pregnancy the decision as to the type of delivery is being taken (physiological delivery or C-section)	- client perspective on delivery and role of the midwife	Survey clients (pregnant women)

Annex 2: Distribution of interviewees over the sampled facilities

	Region	City/Town	Institution	Checklist delivery log	Q for Clients with CS	Q for clients with vagina l del	Q for midwives	Q for obstetricians/ gynaecologists	Q for pregnant women
1	Samegrelo	Zugdidi	Multi-Profile Hospital "Republic"	2 months	6	8	4	10	15
2		Senaki	Sena-medi	1 month	12	8	4	4	15
3	Adzharia	Batumi	The Mother and Child Referral Center	2 months	8	17	10	7	13
4		Batumi	Maternity House N1	1 month	21	21	8	7	14
5	Saamtskhe-Javakheti	Akhaltsikhe	District Hospital (Maternity Unit)	2 months	2	6	9	6	14
6		Borjomi	Maternity House	2 months	0	6	6	6	15
7	Imereti	Kutaisi	Bo-mondi	2 months	12	5	4	7	4
8			The Obstetric-Gynecological Hospital	2 months	13	5	4	5	12
9			Maternity House N2	2 months	3	3	2	3	0
10		Zestafoni	Maternity House	2 months	2	8	5	8	7
11	Kakheti	Telavi	Kambarashvili Clinic	2 months	2	4	4	6	18
12		Signagi (Tsnori)	Maternity House "Tsniori"	2 months	0	3	3	1	0
13			District Hospital (Maternity Unit)	2 months	0	1	1	1	1
14			"Hera+"	2 months	0	1	0	0	0
15		Sagarejo	District Hospital (Maternity Unit)	2 months	2	8	3	2	0
16	Qvemo Qartli	Rustavi	Maternity House	2 months	4	9	5	9	8
17	Tbilisi	Tbilisi	Sharashidze Clinic	1 month	2	14	5	7	14
18			Maternity House N4	1 month	17	23	3	15	16
19		Tbilisi	"Davit Gagua" Maternity House	1 month	13	25	3	5	5

Annex 3: Checklist for the retrieval of data from MH/delivery log

Instruction:

a. *Please check beforehand whether there is more than one delivery log in the institution! In case there is more than one, use all of them to reach the total number of deliveries for which data need to be recorded.*

b. *Please retrieve the data for last month in case of a large facility (with more than 200 deliveries per month); retrieve data for 2 months or more in case of a small facility (so as to arrive at a total of at least 200). You should end up with at least 200 deliveries!*

Name of institution:
Region:
Date(s) of visit by researcher:
Checklist completed by: *(name)*
Period for which data are retrieved (= reporting period): from … to …

Number of Deliveries during

2008----------

2009----------

Number of Caesarean Section during

2008----------

2009----------

Total number of Delivery Logs

1. Total number of deliveries that have taken place in the institution over the above reporting period:

2. Breakdown of deliveries by type:

	Number	… of which 1st delivery	repeat delivery
Normal vaginal delivery			
Assisted vaginal delivery: Forceps			
Assisted vaginal delivery: Vacuum			
Delivery through Caesarean Section			
TOTAL deliveries			

3. Breakdown by age of the mother:

	Non CS	CS
20 years or less		
21 to 35 years		
36 years or more		
TOTAL		

4. Classification of delivery

	TOTAL	... of which:	
		Non CS	CS
First delivery, cephalic presentation, without stimulation > 37 weeks			
First delivery, cephalic presentation, with stimulation > 37 weeks			
Repeated delivery, cephalic presentation, without stimulation > 37 weeks			
Repeated delivery, cephalic presentation, with stimulation > 37 weeks			
Cephalic presentation, previous CS >37 weeks			
Cephalic presentation <37 weeks			
First delivery, breech presentation			
Repeated delivery, breech presentation			
Multiple fetus			
Transversal position of the fetus			
Other ...			
TOTAL *			

Please ensure that total numbers correspond with totals in previous tables!

Annex 4: Questionnaire for pregnant women

Name of institution: ..... *Serial number:* .....

Name of interviewer: ..... *Date of interview:* .....

Inclusion criterion: *only women who are in their 32th week of pregnancy, or further.*

Introduction

MAG and GOGA are conducting a research on care in Georgia around pregnancy and delivery. One of the issues we are interested in is the information that pregnant women receive during their antenatal care period. You have been selected for this interview, which will take 20 to 30 minutes to complete. All answers will be handled confidentially, and processed anonymously, so you may speak freely.

Part 1: General information

1. What is your age? ..... years

2. Where do you live? .....

3. Are you married?
   - O Married
   - O Living in union with partner
   - O Without partner
   - O Other, specify .....

4. Do you have medical insurance? O Yes O No
   a. If yes, name of the insurance company: .....
   b. Does the insurance cover all costs of the delivery?
   O Yes O No

5. Will this be your first delivery? O Yes O No
   a) If no, record number of previous pregnancies ....
   b) Number of children born alive ....
   c) Number of C-sections ....

6. Have you attended parents' school? O Yes O No
   a) If yes, how many times .....
   b) Did you find it useful?
   O Very much O A bit O No
   Comment: .....

7. Have you attended antenatal consultations?

O Yes O No

a) If yes, how many times .....

b) Did you find it useful?

O Very much O A bit O No

Comment: .....

Part 2: Questions about your pregnancy and delivery

8. How do you prepare yourself for the delivery? *(open question, allow them to elaborate – record main points only).*

.....

9. What was for you the most useful source of information about pregnancy?

O Family/friends O Doctor O Midwife

O Other people (specify): .....

O Books/brochures O Radio/TV O Internet

O Other (specify): .....

a) Which information in particular did you find most useful?

.....

10. What was for you the most useful source of information about delivery?

O Family/friends O Doctor O Midwife

O Other people (specify): .....

O Books/brochures O Radio/TV O Internet

O Other (specify): .....

a) Which information did you find most useful?

.....

We now present you several **statements**: please indicate whether you agree or disagree, and assign a score (from 1 = strongly disagree; to 5 = strongly agree)

11. The information I receive at the WCB is sufficient for me

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

12. The information I receive at the parents' school is sufficient for me

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

13. I feel confident with the advice of my gyn/obst on my pregnancy

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

14. My doctor (gyn/obst.) has discussed with me the various options for delivery

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

15. If I have any questions I can easily discuss these with my gyn/obst.

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

16. I feel confident enough to make my own choice regarding the delivery

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

17. I would be disappointed if it turns out that I need to undergo a C-section

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

18. I am afraid that my delivery will be painful

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

19. I am aware that I can ask for pain relief during delivery

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

20. Having a midwife present at the delivery is important to me

1 Strongly Disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

Part 3: Final questions

21. Do you already know whether you will try to have a normal physiological delivery or a C-section?

O Probably a physiological/vaginal delivery

O Probably a C-section, because the doctor told me so

O Probably a C-section, because I already asked for it

O Probably a C-section, because I will ask for it

O Definitely a C-section, because the doctor said so

O Definitely a C-section, because I asked for it and the doctor agreed

O Other (*specify*) ....

Comment: …….

22. We are interested in your possible advice how services may be improved for pregnant women. What would you suggest?

……..

……..

Thank you very much for your participation in this interview, you have helped us very much with your comments and views. Our study will be completed in March 2011, after which we will disseminate the results.

Annex 5: Questionnaire for women with vaginal delivery

Introduction

MAG and GOGA are conducting a research on care in Georgia around pregnancy and delivery. One of the issues we are interested in is the information received during the antenatal care period and during your stay at the Maternity House (or in the hospital). You have been selected for this interview, which will take 20 to 30 minutes to complete. All answers will be handled confidentially, and processed anonymously, so you may speak freely.

Part 1: General background information

1. What is your age? … Years

2. Where do you live? … *Town , village*

4. Are you married?
   O Married
   O Living in union with partner
   O Without partner
   O Other, specify …….

5. Do you have medical insurance? O Yes O No

   a. If yes, name of the insurance company: …..

   b. Does the insurance cover all costs of the delivery?
   O Yes O No

6. Was this your first delivery? O Yes O No If no … 2…3…4..

7. Did you go to the Women's Consultation Bureau during pregnancy?
   O Yes O No

   a. If yes, where? …..

   b. How often did you go? ….. times

   c. Did you find it useful? O Yes O No
   Please explain: ……

   d. Did you receive adequate information?
   O Yes O No

   e. Was there any information you missed?
   O Yes O No

   f. If no, please explain. …….

8. Did you have a normal, physiological delivery?

   O Normal vaginal delivery O Assisted delivery, forceps
   O Assisted delivery, vacuum O Caesarean section

Part 2: Questions for women who had a vaginal delivery

9. Before you came to the Maternity House (or hospital), were you informed on the procedures involved in a delivery? *(open question: have the client describe the process)*

….

10. Do you consider the information you received was sufficient for you?

O Yes O No

11. Did you miss any information? O Yes O No

Please explain: ….

12. On hindsight, what are you most happy with as far as the hospital services are concerned?

…..

13. Were you scared of maybe having to undergo a C-section?

O Yes O A bit O Not really

14. What is your appreciation of the assistance you received from the midwife?

….

Part 4: Concluding questions (for all women)

15. How do you rate the care that you received during your stay?

(on a scale of 1 to 10; from 1 = very bad to 10 = excellent)

a. During labour:	1	2	3	4	5	6	7	8	9	10
b. At delivery:	1	2	3	4	5	6	7	8	9	10
c. After delivery:	1	2	3	4	5	6	7	8	9	10

16. On hindsight, is there anything you had wanted to be done differently during labour?

….

17. Is there anything you had wanted to be done differently during delivery?

….

18. Is there anything you had wanted to be done differently after delivery?

….

19. We are interested in your possible advice to the Maternity House (or hospital) how services may be improved for pregnant women. What would you suggest?

……..

……..

Thank you very much *for your participation in this interview, you have helped us very much with your answers and comments. The study will be completed in March 2011, after which we will publish the results. Your name will not appear in our report.*

Annex 6: Questionnaire for women who underwent Caesarean section

Introduction

MAG and GOGA are conducting a research on care in Georgia around pregnancy and delivery. One of the issues we are interested in is the information received during the antenatal care period and during your stay at the Maternity House (or in the hospital). You have been selected for this interview, which will take 20 to 30 minutes to complete. All answers will be handled confidentially, and processed anonymously, so you may speak freely.

Part 1: General background information

1. What is your age? … Years

2. Where do you live? … *Town , village*

3. Your ethnicity

4. Are you married? O Married

O Living in union with partner

O Without partner

O Other, specify …….

5. Do you have medical insurance? O Yes O No

a. If yes, name of the insurance company: …..

b. Does the insurance cover all costs of the delivery?

O Yes O No

6. Was this your first delivery? O Yes O No If no … 2…3…4..

7. Did you go to the Women's Consultation Bureau during pregnancy?

O Yes O No

a. If yes, where? …..

b. How often did you go? ….. times

c. Did you find it useful? O Yes O No

Please explain: ……

d. Did you receive adequate information?

O Yes O No

e. Was there any information you missed?

O Yes O No

f. If no, please explain. …….

8. Did you have a normal, physiological delivery?

O Normal vaginal delivery O Assisted delivery, forceps

O Assisted delivery, vacuum O Caesarean section

Part 2: Questions for women who had a C-Section

9. Have you had a C-section before? O Yes O No

a. If yes, how many? …

b. Out of how many deliveries in total? …

c. When was the previous C-section? …

10. What kind of anesthesia did you have during CS ?

11. For your current C-section, what has been your experience? *(let the client speak about her own personal experience; any answer is fine; please record main points below)*

…….

…….

12. Was the decision to conduct a C-Section taken during your pregnancy or after you went into labour?

O During pregnancy (a) O After labour had started (b)

a. In case the decision was taken during pregnancy:

a.1 At which moment? … months / … weeks into pregnancy

a.2 What was the main reason to choose for a C-section?

……..

a.3 Whose decision was it?

…….

a.4 At that time, were you happy with this decision?

…….

a.5 Today, on hindsight, are you happy that you had a C-section instead of a physiological delivery?

…….

b. In case the decision was taken after you had gone into labour:

b.1 Please describe what happened.

…….

b.2 At which moment during labour was the decision taken to do a C-section?

……

b.3 What was the main reason to choose for a C-section?

…..

b.4 Whose decision was it?

…..

13. Before the decision was taken that you were going to have a C-section, did you have any information about C-Sections?

O Yes, a lot O Just a bit O No

a. Did you know what it involves?

O Yes, very well O Just a bit O No

b. Did you know the reasons to perform C-Sections?

O Yes, very well O Just a few O No

c. Did you know the possible medical complications?

O Yes, very well O Not quite O No

d. What is your main source of information?

O Doctor O Midwife O Other health personnel

O Friends O Family members O Books

O Folders, brochures O TV/radio O Internet

O Other sources, specify .....

14. Do you think the information you received from the health staff was sufficient for you?

O Yes O No

a. If no, what kind of information would you have liked to receive?

.....

15. Could you please again reflect on how it was decided to perform a C-Section.

(open question: have them describe the process, who has made the decision, comment on the moment the decision was taken, information received from the doctor on the C-Section, possibility to discuss the pros and cons with the gyn/obst, etc.)

16. What is your appreciation of the assistance you received from the midwife?

....

17. In case of a next pregnancy: would you again want to deliver the baby through a C-section?

O Yes O No

Please explain: ....

Part 3: Concluding questions

18. How do you rate the care that you received during your stay?

(on a scale of 1 to 10; from 1 = very bad to 10 = excellent)

a. During labour:	1	2	3	4	5	6	7	8	9	10
b. At delivery:	1	2	3	4	5	6	7	8	9	10
c. After delivery:	1	2	3	4	5	6	7	8	9	10

19. On hindsight, is there anything you had wanted to be done differently during labour?

….

20. Is there anything you had wanted to be done differently during delivery?

….

21. Is there anything you had wanted to be done differently after delivery?

….

22. We are interested in your possible advice to the Maternity House (or hospital) how services may be improved for pregnant women. What would you suggest?

……..

Thank you very much *for your participation in this interview, you have helped us very much with your answers and comments. The study will be completed in March 2011, after which we will publish the results. Your name will not appear in our report.*

Annex 7: Questionnaire for midwives

Name of institution: ..... *Serial number:* .....

Name of interviewer: ..... *Date of interview:* .....

Introduction

MAG and GOGA are conducting a research on professional care during pregnancy and delivery. We are interested in finding out more about Caesarean Sections, among others the views of midwives, obst/gyn, and clients (women). You have been selected for this interview, which will take some 20-30 minutes to complete. All answers will be handled confidentially, and processed anonymously, so you may speak freely. The first questions are about your work in general as a midwife in this Maternity House (part 1). The following questions relate to your views and experience with C-Sections (parts 2 and 3). At the end of the interview we will ask you some general questions (part 4).

Part 1: General information

1. What is your age? ... years

2. How many years of experience do you have as a midwife? ... years

3. How many years at this facility? ... years

4. In which trainings or seminars did you participate over the past three years (list name, purpose of the training, year)?

.....

Part 2: Your role as a professional midwife

5. In your actual work, do you have a role during the **antenatal period** of the pregnant women that come to your MH/hospital?

O Yes O No

a) If yes, please specify what you do ? .....
b) If no, would you see a role for the midwife in the antenatal period?

O Yes O No

c) If yes, please specify .....
d) Overall, in your opinion what could be improved in terms of service provision during the antenatal period?

.....

6. In your actual work, what is your role during a woman's **labour and delivery, in case of a physiological/ vaginal delivery**?

Please specify: .....

a) Do you think you could do more, as a midwife, than what you are currently doing during labour and or delivery?

O Yes O No

Explain: .....

b) In your opinion what could you do differently?

---

c) Is there anything else than can be improved in your view during labour/ delivery?

Specify: .....

7. In case of a Caesarean section, what is your actual role?

Please specify: .....

a) Do you think you could do more, as a midwife, than what you are currently doing in case of a C-section? O Yes O No

Explain: .....

b) Is there anything else than can be improved in your view during a C-section?

Specify: .....

8. In reality, what is your role during the **2 hrs post-delivery** period?

Please specify: .....

a) Do you think you could do more? O Yes O No

Explain: .....

b) In your opinion what could you do differently?
c) Is there anything else than can be improved in your view regarding care during the 2-hrs post-delivery period?

Specify: .....

9. What is your role in the **postpartum care period?**

Please specify: .....

a) Do you think you could do more, as a midwife, than what you are currently doing during the post-partum period? O Yes O No

Explain: .....

b) In your opinion what could you do differently?
c) Is there anything else than can be improved in your view during the post-partum period?

Specify: .....

Part 3: Your experience with Caesarean sections

10. Have you seen any trend over the past few years in the number of C-sections that are being performed at your Maternity House (hospital)?

O Decrease O No trend O Increase

a) Please describe what you have seen happening

.....

11. Sometimes clients themselves ask for a C-section: from your experience what are the most common reasons for this? *(list all reasons, in order of importance)*

1.....

2.....

3.....

12. In your opinion, are there C-sections being performed in your MH/hospital which could have been avoided?

O Yes O No

a) If yes, explain: .....

13. In general, do you think the medical indication for a C-section is sufficiently explained to the woman and her partner/family)?

O Yes, always O At times O No

a) Explain .....

14. Do you sometimes play a role in the decision making process regarding the delivery/C-Section?

O Yes, always O At times O Never

a) Please comment .....

15. Is it always clear to you why a C-section is performed?

O Yes O At times O Never

a) Comment .....

16. Does it ever happen that the gyn/obstetrician asks your opinion whether a C-section is appropriate?

O Yes O Rarely O Never

a) Specify .....

17. Do you think you, as a midwife, can have a role to play in the decision whether or not a C-section needs to be performed?

O Yes O Not sure O No

a) please specify .....

Part 4: General concluding questions

18. If you were in a position to formulate recommendations or make changes in your Maternity House regarding maternal health, what would you suggest?

……

19. If you were in a position to formulate recommendations about C-sections, what would you suggest?

…….

Thank you very much *for your participation in this interview, you have helped us very much with your answers and comments. The study will be completed in March 2011, after which we will disseminate the results. Your name will not appear in our report*

Annex 8: Questionnaire for obstetricians/gynaecologists

Name of institution: ..... *Serial number:* .....

Name of interviewer: ..... *Date of interview:* .....

Introduction

MAG and GOGA are conducting a research in the area of C-Sections. We are interested in finding out the dimensions of C-Sections in Georgia, among others the views of midwives, obst/gyn, and of clients (women) on Caesarean Sections. You have been selected for this interview, which will take some 20-30 minutes to complete. All answers will be handled confidently, and processed anonymously. The first questions some general questions on your work as a gyn/obst in this Maternity House (Q 1-5). The following questions relate to your views and reflections on midwifery care and the role of the midwives in Maternal Health (Q 6-11). The third part relates to C-Sections in Georgia and in your Maternity House (Q 12-17). The interview will be concluded with general questions.

Part 1: General information

1. What is your age? .... years old

2. How many years of experience do you have as a gynaecologist/obstetrician? ... years

3. How many years at this facility? ..... years

4. Do you work elsewhere?

   a) If yes, please specify where? .....

5. In which trainings or seminars did you participate over the past 3 years (name, purpose of the training, year)? *(list)*

   a) if you did not participated in trainings or seminars over past 3 years then when was last training.

6. During practicing as an Obstetrician/Gynaecologist-

   a) When did you have the last session with midwives?

   b) What was the topic?

7. Do you allow (trust) a midwife to fill partograme?

8. Do you allow (trust) a midwife to perform active management of the third stage of delivery independently?

9. Do you allow a midwife to participate for keeping some steps of “warm chain”?

10. In your opinion , what is a the current role of midwife during the 2 hrs after C-Section?

Please specify: .....

d) Do you think she could do more? O Yes O No

Explain: .....

e) In your opinion is there a role for midwife during the **2 hrs post-delivery** period?

10.1. In your opinion, what could be improved?

a) Regarding care during antenatal period? please specify

b) Regarding care during labour and delivery? please specify

c) Regarding care during a C-section? please specify

d) Regarding care during the 2-hrs post-delivery period?

e) Regarding care during the post-partum period?

Part 3: Perspectives on C-Sections

11. To your knowledge, did the C-Section rate in Georgia increase over past 5 years?

a. If so, what could be the main reasons of this increase?

(list in order as mentioned: first, second, …. etc)

b. How could such increase be explained considering medical/social/other factors?

12. In your opinion, is there a need to address the C-Section rate in Georgia?

13. To you knowledge, what could be done to halt an increase, or decrease a high C-Section rate?

(open question, they should know at least 2 or 3)

14. Are you informed on the international recommended standards on C-Sections?

(ask them the range/recommended standards)

15. Do you know the C-Section rate in your Maternity House?

(write down their answer)

16. Is the number of C-Sections in your Maternity House considered to be a problem?

a) If yes, what is being done to address this, and by whom?

(please specify: by management, doctors, head of department, midwives etc…)

b) If no, please explain

Part 4: General concluding questions

17. If you were in a position to make changes in your Maternity House regarding maternal health would you change anything?

O yes O No O I don't know

a) If yes, please specify

1.....

2.....

3.....

b) If no, please specify why not?

18. If you were in a position to formulate recommendations about C-sections, what would you suggest?

…….

Thank you very much for your participation in this research, you have helped us very much with your comments and views. The research is estimated to be completed in March 2011, after which we will publish the results. If you want to be informed about study results, please give us your contact details (email/ mail address)

Annex 9: Composition of the research team

Table 16: Research team composition and roles	
Participants	**Roles, responsibilities**
Midwives (MAG) Manana Khvediashvili, Lela Sabadze, Tamar Berdzuli, Nato Svanadze, Elza Kunelashvili, Ketevan Khatiashvili, Rusudan Shavlidze, Guguli Nakashidze, Bela MchedliShvili, Shorena Gakhutashvili, Lia Babalashvili, Marina Gvasalia and Diana Chiaureli	Acting as research assistants during design, data collection, entry, analysis and reporting.
Researchers (GOGA) Lela Shengelia (principal investigator) Eka Gagua, Dali Chitashvili	Principal investigator acting as team leader during entire study (from design phase, up to final reporting) and responsible for quality control. Researchers involved in design, data collection and analysis; acted as group leader during the field work.
Administrator (HERA XXI) Nino Tsuleiskiri Tamar Kachlishvili	Responsible for negotiating process with management/ directors of MHs (retrieval of approval) and for dealing with administrative and financial issues during the entire study.
Resource persons (ETC Crystal) Leon Bijlmakers, Esther Jurgens	Providing technical guidance and assistance during study design, data analysis and reporting; providing Health Systems Research training for research assistants and researchers.
Other resource persons (GOGA) Tengiz Asantiani	Providing technical guidance to the study design and data analysis.

Annex 10: Breakdown by type of delivery in Georgia (2000-2010)

Table 17: Breakdown by type of delivery in Georgia (2000-2010)

Source NCDC reports (2003-2010) and NCDC website (2000-2002)

	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)	2008 (%)	2009 (%)	2010 (%)
Total del	47 191	46 370	45 263	44 396	46 734	47 246	48 181	49 626	56 096	61 656	NA
Total del in HF	45 156	44 787	44 091	43 170	45 554	46 365	47 593	49 317	55 850	61 441	61 653
Total del outside HF	2 035	1 583	1 172	1 226	1 180	881	309	246	215	NA	NA
Physiological VD (in- patient delivery)	35 711 (79.1)	35 766 (79.9)	34 593 (78.5)	33 193 (76.9)	33 437 (73.4)	33 041 (71.3)	33 039 (69.4%)	33 692 (68.3%)	37 643 (67.4%)	39 539 (64.4%)	39 067 (63%)
Pathological del (in-pat. del)	5 545 (12.3%)	4 243 (9.5%)	3 910 (8.9%)	3 718 (8.6%)	4 324 (9.4%)	4 251 (9.2%)	4 620 (9.7%)	4 617 (9.4%)	4 337 (7.8%)	4 180 (6.8%)	3 168 (5.5%)
Total C-section	4 382 (9.3%)	4 778 (10.3)	5 504 (12.2)	6 259 (14.1%)	7 793 (17.1%)	9 073 (19.6%)	9 934 (20.9%)	11 008 (22.3%)	13 870 (24.8%)	17 722 (28.8%)	19 418 (31.5%)
Planned	2 035 (46.4%)	2 164 (45.2)	2 585 (46.9)	3 160 (50.5%)	3 989 (51.1%)	4 471 (49.2%)	4 911 (49.3%)	5 304 (48.1%)	6 934 (49.9%)	8 498 (47.9%)	10 218 (52.6%)
Planned 1e	1 164	1 306	1 662	1 940	2 620	2 791	3 046	3 150	4 034	5 065	6 225
Planned repeat	871	858	923	1 220	1 369	1 680	1 865	2 154	2 900	3 433	3 993
Urgent C-section	2 347	2 614	2 904	3 099 (49.5%)	3 766 (48.3%)	4 580 (50.5%)	5 003 (50.4%)	5 640 (51.2%)	6 936 (50.0%)	9 224 (52.0%)	9 200 (47.3%)
Urgent first	1 754	1 932	2 179	2 340	2 556	3 335	3 726	4 172	5 176	6 975	6 495
Urgent repeat	593	682	725	759	1 210	1 245	1 277	1 468	1 760	2 249	2 705
Unspecified C-section	0	0	0	0	38	22	20	64	0	0	

Annex 11: Cephalic presentation among types of HF

Table 18: Cephalic presentation by type of delivery, gestation period, stimulation												
	Cephalic presentation with stimulation (> 37 wks)				Cephalic presentation without stimulation (> 37 wks)				Cephalic presentation without stimulation (< 37 wks)			
	SLR	Private	JSC	Subtotal	SLR	Private	JSC	Subtotal	SLR	Private	JSC	Subtotal
VD	1	17	0	**18**	348	975	550	**1873**	10	27	17	**54**
CS	3	23	15	**41**	49	365	190	**604**	3	22	13	**38**
Total	4	40	15	**59**	397	1340	740	**2477**	13	49	30	**92**

Study was conducted in the framework of the project:
“Enhancing quality of care:
Upgrading the knowledge and skills of midwives in Georgia”.

The project is funded by MATRA Programme,
Ministry of Foreign Affairs of Netherlands