The Quality of Hospital-Based Maternity Care in Turkey: Findings regarding Antenatal Care

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INTRODUCTION

Antenatal care; along with clean/safe delivery, essential obstetric care, and family planning; is one of the "four pillars" of safe motherhood [1]. Despite universal agreement on the importance of antenatal care, there is still considerable disagreement about the ideal frequency and content of antenatal visits. Much of what constitutes routine antenatal care is not based on rigorous scientific evidence [2,3]. Researchers have begun to examine the quality of antenatal care in different settings and to develop general frameworks for assessing the quality of antenatal care [4, 5]. A recent WHO multi-center randomized controlled trial found that a new model with a reduced number of high quality antenatal visits during pregnancy did not result in worse maternal or perinatal outcomes than standard antenatal care [6].

In Turkey, levels of maternal and infant mortality and morbidity continue to be unacceptably high, despite increasing economic development and modernization [7,8]. The available data indicate that Turkish maternal and perinatal mortality rates are among the highest in the WHO European Region [9]. Antenatal care is provided by state hospitals and health centers, social security hospitals and dispensaries, private hospitals and clinics, and university hospitals, as well as through home visits by midwives in rural areas. According to the 2003 Turkish Demographic and Health Survey (DHS), for 23% of births occurring in the five years before the survey, the expectant mother received no antenatal care, compared to a figure of 32% from the DHS survey conducted in 1998 [8]. There are great disparities between regions of the country, with 91% of women who had a live birth in the 5 years preceding the survey receiving some antenatal care in Western Turkey, compared to only 61% in Eastern Turkey. Out of those utilizing antenatal care, 32% of women had less than 4 visits during the pregnancy and for 29% the first visit occurred in the second trimester or later. An analysis of the 1998 Turkish DHS

data, found that women's education, parity, health insurance coverage, and region were significantly related to use of antenatal care [10].

Although more Turkish women are receiving antenatal care than ever before, there are indications that the quality of this care is seriously lacking. Researchers analyzing the 1998 Turkish DHS data developed a simple quality of antenatal care score including adequate tetanus vaccination, measurement of weight, blood pressure check, blood examination, auscultation of the fetal heart, and getting iron pills [11]. Women were asked if they experienced these procedures even once during antenatal visits occurring during the last two years. According to this evaluation, only 20% of women had experienced all six of these procedures. In addition, women report that they do not get information and counseling they need regarding health during pregnancy, childbirth, and postpartum health during antenatal visits [12]. A study conducted in five Turkish cities found that the quality of antenatal care was lower in poor neighborhoods and that it adversely affected utilization of services [13]. There is a need for more rigorous examinations of the quality of antenatal care in Turkey to determine the situation and develop strategies to improve the quality of care.

The data presented in this paper were collected as part of a comprehensive study of the quality of antenatal and intrapartum care at three maternity hospitals in Istanbul. The goal was then to use this information to develop interventions that can improve the quality of hospital-based maternity care in Turkey.

MATERIALS AND METHODS

Conceptual Framework: The conceptual framework for this study is based on the framework for the quality of reproductive health services developed by Bruce [14]. This framework includes six major elements: technical competence, continuity of care, good interpersonal relations, information and counseling, appropriate constellation of services, and

provision of choices. Standards for technical competence in antenatal care were based on the available evidence-based reviews of antenatal care practices [15] and WHO guidelines for antenatal care [16]. Topics included under each of the quality elements for maternity care are presented in Table 1.

The data were collected during 2001-2002 at three maternity hospitals in Istanbul. One hospital was selected from each of the three health care systems that serve low and middle income families in Turkey (Ministry of Health (MOH), Social Security Organization (SSK), and inexpensive private). All three facilities were located in the same low-income district to control for characteristics of the hospital catchment area. The selected hospitals had at least 2,000 deliveries per year to allow for a sufficient number of birth observations.

The first drafts of the forms and guides to be used for data collection were developed by the research team and were also reviewed by experts at the World Health Organization. A pilot study was conducted at a SSK hospital in a different part of the city and the study forms and guides were revised accordingly. Before beginning fieldwork, meetings were arranged for all maternity staff at each hospital to explain the purpose and methods of the study. Informed consent procedures were followed for all participants.

In order to gather data on antenatal care from different perspectives, a variety of quantitative and qualitative data collection methods were used over a period of two months at each hospital, including interviews with administrators, examination of hospital statistics, in-depth interviews with maternity care workers, semi-structured interviews with antenatal clients, and structured observations of antenatal care.

Facility form: Examination of facility records and interviews with hospital administrators were used to collect information on the type and volume of services, staff, facilities, equipment, and procedures. A structured form with over 200 items was used to collect the data.

Interviews with maternity care workers: After obtaining background data on all maternity care workers, 15 workers were selected for in-depth interviews at each hospital to reflect different provider types, areas of responsibility, and lengths of employment. Two of those initially selected declined to participate, citing lack of time. Those interviewed included Obstetrics/Gynecology (Ob/Gyn) specialists (12), Ob/Gyn residents (3), midwives (12), nurses (12), and aides (6). They were interviewed in private locations by experienced qualitative interviewers using a guide for in-depth interviews, which covered topics such as roles and responsibilities, routine maternity care practices, working conditions, relations with patients and co-workers, and views about the quality of maternity care. These interviews were tape recorded.

Interviews with maternity clients: In order to explore women's perceptions of maternity care, semi-structured interviews (interview-administered questionnaires with mostly close-ended questions) were completed with a total of 147 antenatal clients and 151 postpartum women at the three hospitals. Trained female interviewers approached all women after an antenatal visit or on the postpartum ward after the birth until 50 interviews of each type had been completed per hospital. This sample size is adequate to detect large differences in practice rates among hospitals and to supplement the data collected from other sources in this study. Only 5.7% of antenatal clients and 2.6% of postpartum women approached refused to participate. To supplement these data, five postpartum women were selected for in-depth interviews at each hospital. These women differed in terms of birth type and parity. The in-depth interviews were conducted on the postpartum ward by an experienced female qualitative interviewer using a guide designed to elicit the women's stories regarding maternity care at the hospital. The in-depth interviews were tape recorded.

Observations of antenatal care: Structured observations of maternity care were conducted by two female physicians who were introduced to hospital staff at the beginning of the study. In

order to observe a sufficient number of visits and to minimize reactivity, observations were conducted over a period of several days at each hospital (4 days of antenatal care observation (8 hour shifts on different days of the week). In addition to a general form regarding conditions at the hospital on each day, a separate form was completed for each woman observed. The form for each woman was used to collect detailed information on all procedures carried out during the antenatal care (ANC) visit, as well as observations on interpersonal relations and information-giving. A total of 176 antenatal visits (53 at the MOH hospital, 75 at the private hospital, and 48 at the SSK hospital) were observed.

Data analysis: Quantitative data from the semi-structured interviews with women and the structured portions of the observation forms were analyzed using the EPI-INFO and SPSS for Windows programs. Statistical comparisons of indicators among hospitals were made using chi-square tests, ANOVA, and Kruskal-Wallis Tests for unequal variances. Qualitative data from the observation notes and in-depth interview transcripts were coded and analyzed by the principal investigator using the Ethnograph program. Qualitative data were coded according to the conceptual framework for the quality of hospital-based maternity care presented above, hospital, provider type, and other themes that emerged from the data. Quotes, observations, and memos regarding each topic were brought together and evaluated to identify common themes and interesting minority views. Measures to ensure validity of qualitative findings included triangulation with the other types of data collected and discussion of the results with the staff of each hospital at meetings following preliminary data analyses.

RESULTS

Descriptions of the Hospitals:

MOH Hospital: This is a 710-bed training and research hospital. Free services are provided to civil servants and people certified as impoverished under the "green card" program.

Others pay fees for services, which are comparable to what they would pay at an inexpensive private hospital in that area. Antenatal care is offered in both a regular antenatal outpatient clinic and a high risk antenatal outpatient clinic. Regular antenatal care is delivered by an obstetrics / gynecology (Ob/Gyn) resident on rotation, with the assistance of a nurse. Around 30 antenatal clients are seen each day, around a third of these in the high risk clinic.

Private Hospital: This is a 35-bed hospital that provides emergency, outpatient, and in-patient services, with a special focus on maternity services. All patients pay for services at this hospital and public insurance plans are not accepted. During the study period fees at this hospital were very low (around $9 for an antenatal visit including ultrasound examination, compared to over $50 at expensive private hospitals in Istanbul). The hospital advertises the fact that they have all female maternity staff and thus appeals to religious and traditional families who prefer that women only be examined by female doctors. Antenatal care is offered within the context of general Ob/Gyn outpatient clinics conducted by the two staff Ob/Gyn specialists, assisted by a midwife and a "hostess". Around 60 Ob/Gyn patients are seen by the two physicians each day.

SSK Hospital: This is a 478-bed hospital that provides emergency, outpatient, and in-patient services. In general, only workers and their families covered by the social security system can receive maternity services at this hospital and these services (including medicines and lab tests) are provided free of charge. Antenatal care is offered within the context of two general Ob/Gyn outpatient clinics conducted by Ob/Gyn specialists. Appointments are arranged one day in advance through a telephone appointment system and around 90 patients are seen by the two physicians each day.

Characteristics of Women Receiving Services:

Characteristics of antenatal clients interviewed at the hospitals are presented in Table 2. Even if the payment / insurance arrangements were different, women using antenatal services at

the three hospitals had very similar socio-demographic characteristics. Differences among the hospitals are not statistically significant.

Technical Competence

Data from provider and administrator interviews revealed that the standard recommended number of antenatal visits at all three hospitals was once a month up to the 36th week, once every 2 weeks during the 36th to the 40th week, and more frequently after the 40th week. This number of visits, though consistent with Turkish Ministry of Health standards [17], was more than the four quality visits currently recommended by WHO [6].

Only the MOH hospital had a separate regular antenatal clinic, as well as a high risk antenatal clinic. Women being seen at the high risk clinic were seen by more experienced Ob/Gyn residents, with consultation from Ob/Gyn specialists when necessary. Equipment and expertise were available at this hospital to perform technically complicated tests, such as amniocentesis, on site.

Procedures observed during antenatal visits are presented in Table 3. At all three hospitals, providers often neglected some simple but important evaluations, such as measuring blood pressure and checks for oedema. Tetanus vaccinations were very rarely observed, and this finding was supported by the fact that only 3% of women responding to the antenatal questionnaire reported getting a tetanus vaccination during this pregnancy at one of the study hospitals. Observers noted that women were told the vaccination was unnecessary or to go to a local health center if they asked about vaccination.

On the other hand, there was an overuse of technology. As can be seen in Table 3, at the MOH and private hospitals almost every antenatal visit included an ultrasound examination. At the SSK hospitals the doctors were also ordering frequent ultrasound examinations, but because

the hospital had few ultrasound machines and long waits, observers noted that women were encouraged to pay to have examinations done in private clinics or doctors offices (sometimes belonging to the same SSK doctors). The percentage of antenatal clients interviewed who reported more than three ultrasound examinations at a study hospital during the current pregnancy was 7.8% at the SSK hospital, 20% at the MOH hospital, and 32% at the private hospital ($\chi 2=9.30$, $p=.010$).

As shown in Table 3, doctors at the private hospital were much more likely to write prescriptions than doctors at the public hospitals, including expensive multi-vitamins in some cases. On one observation day the SSK hospital pharmacy ran out of the pregnancy multi-vitamin being prescribed by doctors and the observer noted that the pharmacists substituted a different multi-vitamin that was inappropriate for use during pregnancy because of high Vitamin A content. Sixty-nine percent of women in their second or third trimesters at the MOH hospital reported that they had been advised to use iron pills during this pregnancy, compared to 79% at the SSK hospital, and 97% at the private hospital ($\chi 2=8.90$, $p=.012$). At all three hospitals less than 10% of women reported that they had been advised to use folic acid.

At all three hospitals, antenatal care providers very rarely or never washed their hands during the course of the day (in 91% of antenatal visits observed health care workers did not wash their hands before or after the examination). The vulva was rarely cleaned before a vaginal examination and decontamination was not practiced. In addition, health care workers smoked cigarettes while a pregnant woman was in the examination room in 31.9% of visits observed at the SSK Hospital.

Continuity of Care

Antenatal care was not very continuous at the study hospitals for several reasons. On the one hand, many women started antenatal care late in their pregnancies and many used different

sources of antenatal care during the same pregnancy. Of all the postpartum women interviewed (N=151), 58% had had more than one source of antenatal care during their most recent pregnancy. An example from an interview with a postpartum woman at the MOH hospital gives a rather extreme example of this situation and points to women's lack of trust in health care providers.

***Interviewer**: You said you went to the doctor, but where did you go?*

***Woman**: I went to different hospitals. I went to Hospital A, I went to Hospital B. I came here twice. I went twice to Hospital C. Once I went to Hospital D. I went to different places.*

***Interviewer**: Why did you want to go to so many different places?*

***Woman**: I didn't want to go to just one doctor. I wanted to see if they all said the same things, if they were in agreement.....*

Data from the structured observations also indicated a lack of continuity. Even those women who went regularly to the MOH or SSK hospitals would see a different doctor at each visit since the doctors worked on a rotation system. On the other hand, women who went to the private hospital could see the same doctor at each visit if they came on weekdays during the day. At the MOH and private hospitals individual antenatal records held by women were being used, while at the SSK hospitals they had only a clinic notebook. Some SSK doctors attempted to keep some individual records by writing notes on the back of the woman's SSK card, but this was insufficient to assure continuity. As a result, women would come more often than necessary and tests could be unnecessarily repeated by different doctors. At the public hospitals, observation and interview data revealed that women were rarely given information about the timing of the next antenatal visit. Insufficient history taking also negatively affected continuity. At all three hospitals, data from the observations revealed that little more than date of last menstrual period, blood group, current complaints, and a very brief obstetric history were routinely asked of

women (data not shown).

Another important problem observed at the hospitals was sending high risk pregnant women to referral hospitals without taking necessary precautions. For example, on one of the observation days at the private hospital a woman with signs of severe pre-eclampsia was told to go to another hospital in her own car, without having received any treatment, without being given any written documentation regarding her condition, and not accompanied by a health worker. The one maternal death observed during the study period occurred during a transfer of a pregnant woman with heart disease from a private hospital (not the study hospital) to the MOH hospital.

Appropriateness

All three hospitals were providing a large volume of services at low or no cost to clients. In addition to regular daytime antenatal clinics, all three hospitals offered some evening services. But due to lack of resources or poor organization, both providers and families experienced many problems in the course of antenatal services. The clinics had insufficient health workers and examination rooms for the volume of clients. Especially at the public hospitals, women had long waits for examinations, laboratory tests, and medicines. In addition, families had to deal with bureaucracy and paperwork at the public hospitals. At these hospitals there were frequent conflicts between health workers and clients regarding insurance eligibility and fees for services. For example at the MOH hospital, there was a requirement that pregnant women have certain laboratory tests at each visit (for which there were extra charges), but some paying clients either were not able or did not want to pay for the tests. In the quote below an observer describes such an interaction at the MOH antenatal clinic.

> *First they sent her to pay for the tests. Later she came back and said "I don't have any money, I can't have the tests done". The nurse got very angry. The doctor said "There's*

nothing we can do." The woman had come from far away. She decided not to be examined and went to get her examination fee back. She said "I won't come here again."

Some women interviewed at the public hospitals were also being seen at the private offices of doctors working at the public hospital. For example, some women would go to a private office for the antenatal examination, but come to the hospital for laboratory tests and medicines. Even though this increased the cost of services to women, they were willing to spend the extra money in order to get more time and attention at the doctor's private office. At the MOH hospital, women who came to the antenatal clinic had to purchase a folder for their medical records, a speculum, and sometimes plastic gloves or a condom (for the vaginal ultrasound). These requirements increased both the cost of services to women and time that they spent at the hospital.

Information and Counseling

Antenatal visits at all three hospitals were brief. The mean duration of an antenatal visit from observational data was 11 minutes at the MOH hospital (regular antenatal clinic), 4 minutes at the SSK hospital, and 7 minutes at the private hospital. According to women using antenatal services (data from the semi-structured interviews), women received some information about their own health and the baby's health during these brief visits (Table 4). At all three hospitals women reported receiving some information about pregnancy and fetal development, but almost nothing about important warning signs during pregnancy (such as bleeding), preparation for the birth, and health after the birth (including contraception). Only one woman at the private hospital and one woman at the SSK hospital reported getting information about breastfeeding during antenatal visits. Women using services at the private hospital reported receiving significantly more information about health during pregnancy and fetal development than women using services at the public hospitals. Observers of antenatal care reported lower levels of information

and counseling. According to their observations only 31% of women received any information and counseling at the MOH hospital, compared to 23% at the SSK hospital, and 44% at the private hospital ($\chi 2=6.18$, $p=.045$).

When we talked with health workers at the public hospitals during in-depth interviews, some explained that they were not able to give more information and counseling to pregnant women since the women were uneducated and because their own work loads were too heavy. The following quote from an in-depth interview with a nurse working in antenatal care is typical.

> *"Our patients are very uncultured. We are serving the rural people. . . . . If you ask me, people first have to be educated. Someone should explain the importance of regular antenatal care to these people. I mean a pregnant woman should know that before she comes here. But she doesn't know that, or she doesn't even come because they can't make decisions themselves, they can only come if their mothers-in-law or husbands want them to. If they were a little more educated, they could get better quality care. Also, our workload is really high. I mean, we really have too many patients. Because there are too many patients and because their educational levels are so low, we don't give much education. Or we can't give it, I should say."*

Choices

In general, women receiving antenatal care at the study hospitals were not involved in decision-making regarding their own antenatal care. At the private hospital, women were able to choose between the two staff Ob/Gyn specialists for antenatal care if they came on weekdays during the day. Some families chose the private hospital in the first place because the hospital advertised the fact that all health workers in maternity care were female. (The percentages of women saying that they would prefer a woman doctor for antenatal care were %56 at the MOH

hospital, 39% at the SSK hospital, and 84% at the private hospital, $\chi 2=21.51$, p=.000.) At the SSK hospital, observers noted that some women managed to be seen by the doctor of their choice by learning the rotation schedule of the doctors working in the Ob/Gyn clinic. Then they could attempt to get an appointment for the day that their chosen doctor would be on duty. At the MOH hospital women would be examined by the Ob/Gyn resident that was assigned to the antenatal clinic during that 15-day period. At all three hospitals, data from the structured observations revealed that alternatives for care during pregnancy, childbirth, and postpartum were rarely discussed during antenatal visits.

Interpersonal Relations

At all three hospitals, health workers labored under difficult conditions including heavy work loads, frequent night and weekend duty, insufficient facilities, unclear job descriptions, low wages, late payments (at the private hospital), and unequal distribution of labor.

Observers rated the interpersonal relations skills of each provider who interacted with a woman during an antenatal visit using a checklist of 15 desirable behaviours.[1] Mean interpersonal relations scores (range 0-15) for the physicians providing antenatal care were 6.9 for the MOH hospital, 6.1 for the SSK hospital, and 14.7 for the private hospital (p value from Kruskal-Wallis Test < .05). Mean scores for the assisting nurses or midwives were 6.5 for the MOH hospital, 5.0 for the SSK hospital, and 14.1 for the private hospital (p value from Kruskal-Wallis Test < .05).

Observers noted that, in contrast with the two public hospitals, the all female maternity staff at the private hospital generally treated women with respect, courtesy, and respect for

[1] Behaviors included on the checklist included: addressed her by her name, addressed her politely, was friendly, used a soft tone of voice, made eye contact, was at the same level as the woman, prevented unnecessary pain, said comforting things, used understandable language , allowed the woman to ask questions, gave satisfying answers, used comforting touch, did not abuse the woman verbally, did not have private conversations with others in front of her, and did not drink tea or coffee in front of her.

privacy. In particular, observers were impressed by the interpersonal skills of one of the Ob/Gyn specialists at the private hospital, who could make women feel comfortable and well taken care of, even during very short antenatal visits. At the two public hospitals, conflicts and communication problems between antenatal care providers and women and/or their families were frequent. Things often got started on the wrong foot when women and their families came to the hospital already expecting bad treatment. Afterwards, all women were not treated equally--poorer women and those from minority ethnic groups were treated worse, while family and friends of health workers or those who were also private patients of hospital doctors were treated better than other women. Given the fact that several women and health workers were often in a small examination room at the same time, it was very difficult to provide privacy.

Satisfaction with Antenatal Care

To measure women's satisfaction with antenatal care, three indicators used by the World Health Organization [18] to measure satisfaction with maternity care were used (See Table 5). Women obtaining services at the private hospital were significantly more satisfied than women using services at the public hospitals for the last two indicators.

DISCUSSION

This study revealed problems with the quality of antenatal care being delivered at the study hospitals in all of the six quality of care elements. Some of the problems were due to specific situations at those hospitals, but many of problems identified were related to general characteristics of the Turkish health care system [19]. Although hospitals provide much of the antenatal care in Turkish cities, they are not considered part of the primary health care system. The in-depth interviews conducted with antenatal providers in this study revealed that many thought that it was not the role of the hospital to provide antenatal education or basic services

such as tetanus vaccinations. However, the fact remains that many Turkish women are using hospitals as their source of antenatal care

A limitation of the study is that it was carried out in only three of the eleven hospitals with more than 2000 deliveries per year located in Istanbul. The selection of the hospitals was not random, but rather was based on their annual volume of births and location in the same area of the city, opening up the possibility of selection bias. Thus, findings cannot automatically be extrapolated to other maternity hospitals in Turkey. However, our observations and studies of some specific aspects of antenatal care in Turkey[11,12,13,20] lead us believe that the problems identified at the study hospitals are widespread.

All three hospitals had insufficient human resources and infrastructure for antenatal care. This made it very difficult for providers to provide high quality care, even if they were motivated to do so. Trying to give quality antenatal care in a general Ob/Gyn outpatient clinic with 90 patients per day, no individual records, and 3 month waits for ultrasound examinations indeed seems like an almost impossible situation. The facts that many women come for their first visit late in the pregnancy and use multiple sources of care during the same pregnancy make the situation even more difficult. In order for the quality of antenatal care to improve, it is essential that further investments be made in primary health care services, including hospital-based antenatal care, in Turkey. The fact that practices varied so widely among the three hospitals is an indication that there is a need for development and dissemination of up-to-date national guidelines for antenatal care.

An important strength of the study was the triangulation of data collection methods which allowed us to obtain a comprehensive view of the different aspects of quality of care. For example, in the case of information and counseling during antenatal visits we found that women, observers, and health care providers had very different perspectives. The majority of women felt

that they had received information about health during pregnancy and infant development during antenatal visits. On the other hand, observers noted that the information actually given during visits was extremely limited ("Drink milk and eat yogurt and cheese.") and in many cases could hardly be considered information giving, much less counseling. Both women and observers agreed that no information was being given on warning signs during pregnancy, preparation for the birth, or maternal and infant health after the birth. From the in-depth interviews with health care providers we found that many doctors and nurses were overburdened and felt that they did not have the time or resources to include information and counseling in antenatal care. Some felt that women were too ignorant to benefit from any information and counseling during antenatal care and/or that information should be given by some other organization before women come to the hospital for antenatal visits. The observations revealed that the antenatal clinics were understaffed, crowded, and located in spaces that did not provide privacy. These findings indicate that a multi-faceted approach would be necessary for any intervention aiming to improve antenatal information and counseling; including raising of client awareness and expectations, training of providers in information and counseling skills, changing hospital regulations to include provision of information and counseling as a part of maternity care, changing work conditions (patient load, physical space, etc.), as well as addressing provider attitudes that are barriers to communication.

A review of the evidence on interventions for saving the lives of mothers and newborns listed five successful interventions in antenatal care: tetanus toxoid immunization; promotion of proper nutrition, including iron and folate supplementation; detection and treatment of maternal infections (especially malaria and syphilis); breastfeeding counseling; and blood pressure checks for early detection of pre-eclampsia/eclampsia [21]. Although rates of malaria and syphilis are considered to be too low in Istanbul to warrant screening [22,23], the remaining four

interventions are relevant and were found to be lacking at the study hospitals. Tetanus toxoid immunizations were not being offered at the study hospitals. Routine iron and folate supplementation for all pregnant women is recommended for settings with anemia prevalence greater than 20% [3]. Although a recent study in Istanbul found a prevalence of anemia in women of reproductive age of 33% based on medical diagnosis [24], at the study hospitals, folic acid supplementation was not being recommended and recommendations for iron pills were less than universal. Breastfeeding counseling was not a part of antenatal care. Despite the fact that a recent hospital-based study of maternal mortality in Turkey found that pregnancy induced hypertension was one of the most frequent causes of maternal deaths [7], the observations conducted in this study revealed that blood pressure was not routinely measured during antenatal visits at two of the study hospitals. In addition, no information was being given to women during antenatal visits about important warning signs during pregnancy.

In the hospitals where ultrasound equipment was readily available, we observed that ultrasound examinations were used at the exclusion of other essential components of antenatal care. The example of the MOH hospital was especially striking; 81% of antenatal visits observed included an ultrasound examination, while only 24% included a blood pressure check. Another recent study in Istanbul found that among women who had 10 or more ultrasound examinations during their pregnancies, 17.5% had not had a complete blood count or urinalysis [20]. In another setting it was found that physicians were less likely to take histories and conduct physical examinations thoroughly when ultrasound examinations were available [25]. Although no adverse health effects of frequent ultrasound examinations have been shown, it is accepted that ultrasound examinations are not necessary at each and every antenatal visit and that doing them more frequently than necessary increases the costs of health care [26]. Physicians may prefer ultrasound examinations as a quick and easy method to check the status of the fetus. There is

also a demand factor at work, since families like to get frequent "pictures" of the baby to potentially learn the sex of the baby and ensure that he/she is healthy. At the private hospital it was even possible to have an ultrasound examination alone, without any other components of antenatal care. At the MOH hospital, health workers told women that they were not allowed to reveal the sex of the baby (not true) in order to discourage families from coming for that reason alone and to save physician time. As mentioned above the long waiting times for ultrasound examinations at the SSK hospital were creating good business for private clinics outside the hospital.

CONCLUSIONS:

Political will and resources must be committed in order to improve the quality of antenatal care in Turkey. A recent task force on perinatal care for the WHO European Region recommended that perinatal care should be demedicalized, be based on use of appropriate technology, be regionalized, be evidence-based, be multidisciplinary, be holistic, be family-centered, be culturally appropriate, involve women in decision-making, and respect women's privacy and dignity [27]. We have tried to develop recommendations that include these basic principles, address the most serious problems affecting maternal and child health, and that could be implemented within the organizational and economic constraints of the current health system in Turkey.

To increase technical competence in antenatal care, standards and guidelines that encourage use of appropriate technologies need to be developed. Antenatal care providers need to be trained in the importance of conducting basic evaluations; such as measuring of blood pressure, blood tests, and urinalysis; at each antenatal visit, and supervision systems need to be strengthened to ensure that the recommended procedures are indeed being carried out. Staff should also be given further training in the importance of appropriate precautions, procedures, treatment for women with pregnancy induced hypertension. All pregnant women should receive

tetanus toxoid immunizations, folic acid supplementation during the first trimester (preferably beginning before conception), and iron supplementation during the second and third trimesters, to be continued up until six weeks after the birth. All levels of maternity staff need to be trained in correct infection control procedures, especially hand washing and decontamination.

To promote continuity of care, linked individual record systems need to be implemented for antenatal, intrapartum, and postpartum care. In addition, standard guidelines for transfer procedures for pregnant women with risks and complications being referred to a more equipped hospital need to be developed. In order to increase access and decrease the high case load of hospital-based antenatal clinics, antenatal care services provided by primary health care centers and midwife home visits need to be strengthened. If hospitals are going to continue to provide a large volume of antenatal care, it will be necessary to allocate additional hospital personnel, equipment, and space for antenatal care. Supervision and reward systems are needed to motivate health workers to provide quality antenatal care.

In the area of information and counseling, health information should be provided to pregnant women and their families through a variety of channels, including community-based antenatal education programs and media campaigns. At antenatal visits, pregnant women at the very least need to be given information about important warning /danger signs. This could be accomplished through development of checklists for providers and simple written materials for women. Breastfeeding counseling should also be provided during antenatal care. To improve interpersonal relations, maternity staff need to be trained in communication skills and principles of good interpersonal relations. Finally, health workers need training in patients' rights and how to involve women in the decision-making process regarding their own maternity care.

Next Steps

Following completion of analyses, detailed reports on the quality of maternity care at each hospital were sent to hospital administrators and meetings were arranged to present the findings to the maternity staff. Although reactions to the findings were mixed, those in charge of maternity services expressed interest in studying the findings more carefully and working to implement changes to improve the quality of care. Interestingly, several changes in antenatal care had already been made at the SSK hospital, at least partly as a result of their participation in the study and the staff's increased awareness of problems with maternity care. This study was a first step in building awareness of problems with the quality of maternity care in Turkey. Study findings have been presented at national professional meetings and at a special meeting organized by the Ministry of Health. The study has also been an impetus for the development of a national "mother friendly initiative" to improve the quality of maternity services in Turkish health facilities.

As a next step, rapid assessment techniques could be used to quickly determine whether or not the major problems identified in this study are indeed widespread in Turkish maternity hospitals. Then intervention studies could be developed to test the effects of improving specific aspects of quality of maternity care on maternal and infant health outcomes. We also believe that the conceptual framework and methods used in this study could be adapted to evaluate the quality of maternity services in other settings around the world.

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Table 1. Elements of the Quality of Maternity Care

Technical Competence

- Monitoring of the health of the mother and baby during antenatal visits
- Special care for high-risk cases
- Appropriate use of technologies (including ultrasonography, intravenous infusion, oxytocin, caesarean section, episiotomy, pain relief, etc.)
- Use of internationally recognized good practices according to the latest WHO guidelines (including magnesium sulphate for eclampsia, prophylactic antibiotics with c-section, etc.)
- Effective management of complications / emergencies
- Infection control

Follow-up / Continuity Mechanisms

- Effective maternity information system
- Same provider or consistent patient records during antenatal care
- Functioning referral system for high risk cases and complications
- Continuous staff support during labour and delivery
- Referrals for check-ups and postpartum contraception

Appropriate Constellation of Services

- Adequate human and physical resources
- Good management and organization
- Appropriately priced services
- Appropriate services for socio-economic and cultural context

Information and Counselling: Are women routinely given inf. & counselling regarding:

- Health during pregnancy
- Preparation for Childbirth
- Interventions during Labour and Delivery
- Postpartum maternal health and contraception
- Infant feeding, care, and health
- Women's other concerns

Table 1. Elements of the Quality of Maternity Care

Choice: Are women routinely involved in decision-making regarding:

- Place and type of birth
- Procedures used during labour and delivery
- Birth position
- Person for social support during labour and delivery
- Pain relief during labour and delivery
- Care and feeding of the infant in the hospital
- Methods for postpartum family planning

Good Interpersonal Relations

- Respectful treatment
- Treatment with honesty, kindness, and understanding
- Absence of unnecessary and humiliating procedures
- Emotional support
- Respect for cultural practices
- All women treated with same standard of care
- Process for identification and response to user expectations
- Meeting of the needs of health workers

Table 2. Socio-Demographic Characteristics of Pregnant Women Participating in Antenatal Clinic Exit Interviews

	MOH Hospital (n=46)	SSK Hospital (n=51)	Private Hospital (n=50)	Total (N=147)
Mean age (years)	26	27	25	26
Primary or less education (%)	46	65	62	58
Grew up in Istanbul (%)	39	33	46	40
Never worked outside the home (%)	39	45	56	47
Monthly household income $350 or less (%)	82	84	87	84
Language other than Turkish at home (%)	13	18	14	15
Living with extended family (%)	24	22	26	24
Primiparous (%)	50	43	50	48
Two or more living children (%)	20	26	18	21
First trimester of pregnancy (%)	7	17	24	16

Table 3. Procedures Observed During Antenatal Visits (percent of women observed)

	MOH (n=53)	Private (n=75)	SSK (n=48)
Weight measurement**	17.0	89.2	0
Blood pressure measurement**	24.5	87.8	14.6
Fetal heart rate**	9.4	1.3	33.3
Fundus measurement**[a]	0	0	18.8
Leopold manoeuvre	0	0	2.1
Check for oedema	0	5.3	10.4
Tetanus vaccination	0	1.3	0
Physical examination**[a]	1.9	0	35.4
Vaginal examination**	35.8	4.0	4.2
Ultrasound examination**	81.1	97.3	2.1
Hand washing before or after exam**[a]	22.9	5.5	0
Haemoglobin or complete blood count	44.9	48.0	47.9
Urinalysis	40.8	42.7	43.8
Prescription for vitamins or medicine**	9.6	74.7	43.8

[a]One or more cells have an expected count < 5.

** p value from chi-square < .01

Table 4. Information Received by Antenatal Clients (women's reports)

Type of Information	MOH (n=46)	SSK (n=51)	Private (n=50)
Signs of pregnancy**	41%	20%	76%
Health during pregnancy**	48%	20%	78%
Pregnancy nutrition**	24%	26%	52%
Fetal development**	50%	29%	84%
Bleeding during pregnancy	11%	8%	14%
Birth preparation	4%	6%	14%
Postpartum health	2%	0%	4%

** p value from chi-square < .01

Table 5. Satisfaction with Antenatal Care

Satisfaction Measure	MOH Hospital (n=46)	SSK Hospital n=51)	Private Hospital (n=50)
Would come again	70%	67%	74%
Would recommend**	65%	53%	88%
Satisfied or very satisfied**	50%	24%	76%

** p value from chi-square < .01

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