HEALTH POLICY AND PLANNING; 15(3): 270–278

Hospital practices in maternity wards in Lebanon

RITA KHAYAT[1] AND OONA CAMPBELL[2]
[1]Faculty of Health Sciences, American University of Beirut, Beirut, Lebanon and [2]London School of Hygiene and Tropical Medicine, London, UK

This study was conducted in Lebanon with the main objectives of acquiring baseline data on practices and routines applied in the obstetrics ward for women having normal delivery; estimating the frequency of certain practices; and assessing whether women are given choice in these practices. A national sample of 39 hospitals was selected. The director, head midwife, or head nurse of the obstetrics department was interviewed using a semi-structured questionnaire.

The hospitals studied are largely equipped to cope with emergencies and services are available 24 hours a day. On average, the caesarean section rate is 18% and the stillbirth rate is 10 per 1000, but with considerable variability between facilities. The majority of hospitals do not have written policies or standard birth procedures and lack mechanisms for evaluation. Generally, minimal prenatal information is given to women. Companions are allowed during labour but this access is more restricted in delivery. The reported configuration of professional care during labour and delivery is favourable to high quality care. In terms of mobility during labour, most hospitals allow women to move. However, 31 hospitals set an i.v. drip to all women and some use continuous fetal monitoring method. Mobility is restricted in delivery; in 23 hospitals women are tied down. Nearly all hospitals give intra-muscular anaesthesia whereas epidurals are used less frequently. As for postpartum care, most hospitals do not initiate breastfeeding within one hour of birth and few have rooming in. The majority of hospitals do not provide women with family planning methods and a few do not even discuss methods with them.

The approach used in this study constitutes a tool for understanding and assessing maternity services that should be applied in other settings. The tool is available from the authors.

Introduction

In the 1970s and early 1980s, maternity services in Europe and North America were subjected to unprecedented public criticism (Chalmers et al. 1991). In particular, routines surrounding birth in hospital were attacked because they were applied inflexibly, and because there was no evidence they were in the best interest of childbearing women and their babies. The Oxford Database of Perinatal Trials, and later the Cochrane Collaboration, set out to review systematically evidence of benefit associated with obstetric practice. Both the 'consumer' driven interest in woman-centred care, and the increased interest in evidence-based medicine, led many western institutions to redesign their hospital policies and routines (e.g. the UK Changing Childbirth Initiative or the increase in use of Birthing Centers in the United States).

In developing countries by contrast, the focus of current maternity care initiatives has been on improving access to emergency obstetric care for those women facing potentially fatal complications (haemorrhage, sepsis, hypertensive diseases of pregnancy, obstructed labour and unsafe induced abortion) (Maine 1991; WHO 1994) rather than on improving the quality of services for normal childbirth. Yet not all developing countries can be described as having poor access to emergency services. Indeed there are many middle-income countries where childbirth occurs largely in hospital, under the care of professionals (WHO 1993). To our knowledge, such countries rarely examine whether their childbirth routines conform to 'best [evidence-based] practice' and whether they yield good health outcomes. Such scrutiny is often hampered by the absence of strong supervisory or regulatory mechanisms (be they governmental, insurance or professional associations) and by a lack of active consumer groups with power and information. Features such as a large, private health care sector and minimal requirements for continuing medical education also augment the difficulties of assessing the quality of health services and updating clinical practices.

Lebanon is such a case. Most women chose a provider who gives the antenatal care in his/her office. The providers are linked to a hospital where women are then asked to deliver. Data from a national household survey show that between 1990 and 1995, 87% of live births had antenatal care at least once, and 88% of live births were in a health facility. Seventy-three percent of all live births were conducted by a doctor and 16% by a nurse/midwife. The private sector dominated, comprising 88% of all antenatal care and 77% of all facility deliveries (PAPCHILD 1996). Insurance schemes (largely

government social security, other government, and private insurance) cover 42% of the population (Administration Centrale de la Statistique 1998). These insurers attempt to control costs by reducing the length of hospital stays, but have not instituted regulatory systems for monitoring quality (Van Lerberghe et al. 1997). Hospital accreditation is not required, nor is continuing medical education. There are general government policies and guidelines regarding hospitals (for example, hygiene requirements) but no specific ones with respect to maternity care. Women's groups exist, but do not appear to have focused on health care issues. In brief, to date there has been little attempt in Lebanon to review practices and outcomes in the medical sector to ensure that 'best practices' are in place to promote the public's health and to meet the needs of women.

This study reviews the diversity of hospital practices and routines in childbirth in a sample of Lebanese hospitals. It forms one component of a series of interrelated studies on pregnancy and childbirth. The objectives are to acquire baseline data on hospital practices or routines applied in maternity wards; to obtain a rough estimate of the frequency of certain practices; and to assess whether providers are aware of women's objections to certain practices. The ultimate aim of this work is to develop and implement interventions that better meet Lebanese women's reproductive health needs.

Methods

A complete list of 140 hospitals available from the Syndicate of Hospitals in Lebanon was used as the sampling frame. As the research aimed to capture the diversity of hospital practices in Lebanon, three stratification criteria were used: geographic region (Beirut, North, Bekaa, Mount Lebanon, South); type of hospital (maternity, private general, public general); and Syndicate of Hospitals classification (seven categories based largely on 'hotel' services). Hospitals from the same geographic region were divided by type and classification of the hospital. One hospital was chosen at random within each of the 105 substratum, but no replacement was made for empty substrata. For example, in Beirut there was no public hospital with maternity services. This approach yielded a total of 42 hospitals, one of which had closed and two no longer provided maternity services. There were no refusals to participate.

A semi-structured questionnaire was used to interview the individual responsible for the day-to-day running of the maternity ward. In 20 facilities this was the head obstetrician; in 12 facilities, the head registered nurse or midwife at maternity ward; and in 7 facilities, the director or owner of the hospital. The interviewers collected data on the types of practices in place and on their prevalence. General statistics on patient load, caesarean section, stillbirth and episiotomy were copied from hospital registers where available. The data collection took place from October 21, 1997 to December 20, 1997, and was done part-time by three interviewers: two Master of Public Health graduates and one medical student. The survey cost was about $1500, mainly for interviewers' salaries and transportation.

Frequency distributions and cross-tabulations were carried out using the Statistical Package for the Social Sciences (SPSS 1988). Results on the prevalence of health outcomes were weighted to be nationally representative.

Results

The sample selected was nearly equally distributed between the five geographic regions, with seven, eight or nine hospitals in each. Twenty-three hospitals were private, general hospitals; seven were private maternities, four were government hospitals, and five were teaching, philanthropic, or religious hospitals. In the year prior to the survey, 8 hospitals conducted over 1000 deliveries, 10 conducted 500–1000 deliveries and 21 conducted 95–499 deliveries. The average annual number of deliveries was 603, and the range was 95–3154. All hospitals reported 24-hour availability of delivery services, and all but one could perform emergency caesarean section at any time. Almost all facilities (34 of 39) viewed themselves as capable of providing Comprehensive Essential Obstetric Care (CEOC); only five hospitals reported needing to refer women. Among these, referral times of <5 minutes, 10–15 minutes and 20–30 minutes were reported. Three of the five facilities referred women accompanied by a professional, but two relied on family members.

There is wide diversity in the obstetric practices reported by hospitals. Table 1 shows that the majority of hospitals did not have written policies or standard birth procedures. Most reported no mechanisms for evaluation, and those that did often used ad hoc procedures. Nevertheless, all but four facilities maintained registers that could be used for evaluation.

Register statistics showed a wide range of caesarean section rates (0.5–50 per 100 deliveries) with an average rate of 18, and a weighted average rate also of 18 per 100 deliveries. Stillbirth rates ranged from 0–28 per 1000 deliveries, with an

Table 1. Evaluation capacity among 39 hospitals, Lebanon, 1997

Evaluation capacity	n	%
Written practices available		
No	30	77
Yes	9	23
Standard birth procedure		
No	33	85
Yes	6	15
Mechanism for evaluation		
None	25	64
Based on statistics	2	5
Feedback and evaluation from staff[a]	11	28
UNICEF or MOH[b] committee	1	3
Reporting of statistics		
From register	35	90
Approximation	3	8
No statistics	1	3

[a] Includes follow-up, observation, attending conferences and workshops, and monthly meetings.
[b] Ministry of Health.

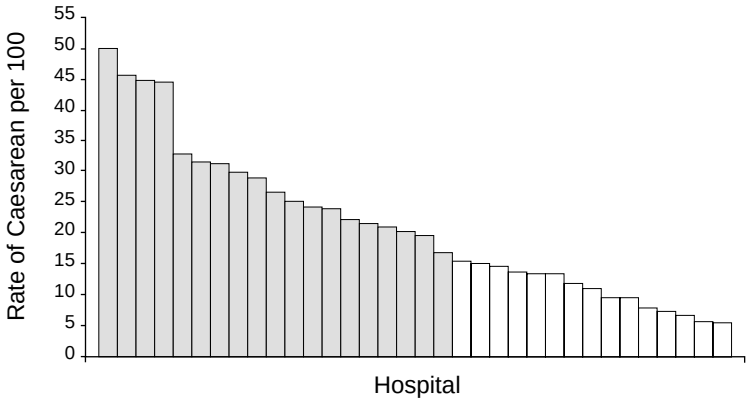

Figure 1. Caesarean section rate

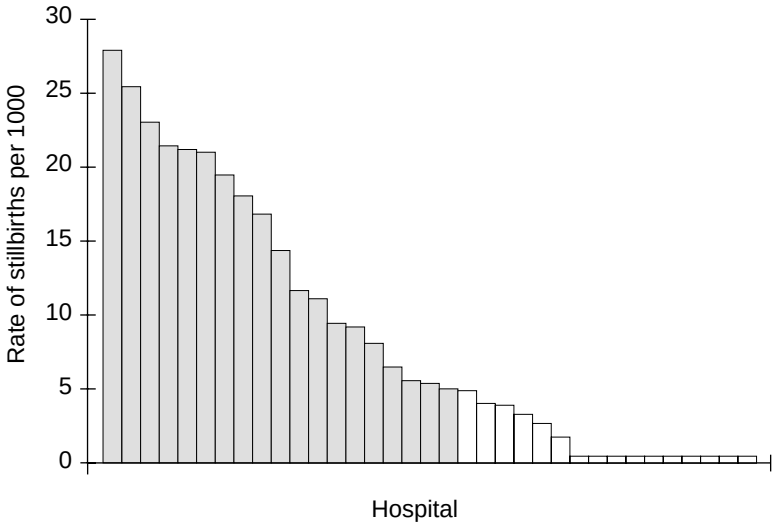

Figure 2. Stillbirth rate per 1000

average rate of 10 per 1000 and a weighted average of 9 per 1000 (Figures 1 and 2).

Eight of the 39 hospitals had organized prenatal classes, and only three enrolled all women in such classes. Other methods for providing women with information were minimal, with only four hospitals giving written information about care during labour and delivery. Only six hospitals reported asking women about their preferences, and few gave women any choice in whether they wanted procedures such as shaving, enema, or continuous foetal monitoring applied.

The structures of professional support assessed in our study allow for the provision of continuous intrapartum support (Table 2). However, although professional care during labour and delivery had features suggestive of good continuity of care (i.e. most women had the possibility of having one type of professional throughout labour and delivery), we did not establish whether a single provider remained with the women continuously. In terms of social support, 29 of 39 hospitals allowed one or more companions during labour, mostly chosen by the woman or jointly with her provider. By contrast, fewer hospitals (n = 13) allowed a companion in delivery. This person was mostly chosen by the health professional, and was usually the husband, provided he was educated and had information about delivery. Many hospitals that allowed a delivery companion reported that most women did not want anybody with them.

Table 3 shows other practices and routines related to the comfort of women. In most hospitals staff reported forbidding women to take fluids during labour, allowing only sips of water or wetting of lips (n = 23). Most requested women to wear hospital gowns, but use of caps was less common. Shaving and enema were also common practices in many hospitals, with only one report that such procedures were unnecessary. Nearly all hospitals used some form of pain relief (usually intra-muscular analgesic, with epidurals used less frequently). Among the problematic analgesics used were Haloperidol and Diazepam.

Table 4 shows data on mobility and monitoring during labour and delivery. Thirty-two hospitals reported allowing women to move during labour, with 15 hospitals encouraging them to

Table 2. Provision of professional and social support in 39 hospials, Lebanon, 1997

Professional support during labour and delivery	n	%
Main health professional[a]		
Midwife during labour and delivery	5	13
Doctor and midwife during labour and delivery	7	18
Doctor during labour and delivery	1	3
Midwife during labour; doctor and midwife during delivery	24	61
Nurse during labour; doctor and nurse during delivery	2	5

	Labour		Delivery	
Social support during labour and delivery	n	%	n	%
Companion				
Not allowed	4	10	18	46
Not allowed, w/exceptions	3	8	3	8
No policy, doctor decides	3	8	5	13
Always allowed	29	74	13	33
Who decides the identity of companion				
Women	21	60	4	19
Health professional	12	34	14	67
Women and health professional	2	6	3	14

[a] In all cases health professional may be assisted by nurse aid, practical nurse, medical students and residents.

Table 3. Practices or routines related to comfort of women in 39 hospitals, Lebanon, 1997

Labour routines: comfort	n	%
Water		
Not allowed	7	18
Allowed	6	15
Doctor decides/specific occasions	3	8
Allowed sips of water/wetting of lips	23	59
Changing clothes		
All women	37	95
May stay in gown	2	5
Perineal shaving		
Not necessary	1	3
All women	36	92
Doctor decides/if need episiotomy	2	5
Emptying the lower bowel		
Not done[a]	2	5
All women	30	77
Doctor decides/in specific occasions	7	18
Pain relief		
Do not use	1	3
IM analgesic[b]	12	31
IM and epidural	16	41
IM and alternative methods	4	10
IM, epidural and alternative methods	5	13
IM, EP and anaesthesia specific for hospital	1	3

[a] One hospital said it is not necessary, and the other said it is not available.
[b] List of IM Analgesic used: Demerol, Phenergan, Antispasmodics, Viceralgin, Valium, Tramal (5), Pethedine, Dolosal, Atropine, Haldol.

Table 4. Mobility during labour and delivery in 39 hospitals, Lebanon, 1997

Mobility during labour and delivery	n	%
Movement during labour		
All allowed to move	32	82
Some allowed/doctor decides	7	18
Adopted position during labour		
Whatever she likes	15	38
Semi-recumbent and/or left lateral	13	33
Supine or left lateral	11	28
i.v. drip		
All women	31	79
Doctor decides	7	18
In last stages	1	3
Methods for foetal monitoring		
Intermittent[a]	11	28
Continuous[b]	10	26
Intermittent and continuous[c]	18	46
Tied during delivery		
No women tied	7	18
All women tied	23	59
Doctor decides/if needed[d]	9	23

[a] Intermittent monitoring is done in most hospitals by doppler.
[b] Three hospitals use internal monitoring.
[c] Two hospitals use continuous monitoring in 2nd stage; eight hospitals use continuous if needed; three hospitals use internal monitoring if needed in addition to continuous and intermittent.
[d] If moves a lot.

adopt whatever position was comfortable. However, 11 hospitals restricted labour movement to bed, and had the women in supine position. Procedures that reduce mobility during labour were commonly reported: 31 hospitals attached an i.v. drip to all labouring women, and 10 used continuous foetal monitoring. Partographs were not in common use as a means of monitoring labour. All facilities had restricted mobility for all women in delivery, and all adopted the lithotomy position. In 23 hospitals, staff physically tied women in delivery, and in eight both arms and legs were tied.

Routine episiotomy is widely used. The estimated episiotomy rates ranged from 5–100%; 16 of 39 hospitals reported more than 80% of their women having episiotomies. Most facilities did not fix the length of time allowed for second stage before intervention is required, but rather based it on gravidity of

Table 5. Other labour and delivery routines in 39 hospitals, Lebanon, 1997

Other labour and delivery routines	n	%
Cervical dilatation graph		
Used	3	8
Not used	36	92
Fixed length of second stage, followed by operative delivery		
Depends on gravidity	33	85
Yes (varies between 0.5 and 2 hours)	6	15
Time allowed for placenta, before manual removal		
Don't wait, do it manually	1	3
≤5 minutes	4	10
10–15 minutes	11	28
20–45 minutes	19	49
≥60 minutes	3	8
Don't know	1	3
Episiotomy		
All women	2	5
All para 0	18	46
All para 0,1; if prior episiotomy	2	5
Doctor decides	17	44
Percent of episiotomy		
≤25	4	10
30–50	9	23
51–75	8	20
≥80	16	41
Refuse to answer	2	5

women (Table 5). Those who did fix a time for the second stage allowed between 0.5 and 2 hours. In 15 hospitals, providers allowed less than 15 minutes for the placenta to deliver before intervening, and in one hospital the doctor removed all placentas manually without waiting.

Table 6 shows postpartum care. Seven hospitals reported no mother–baby contact within the first half hour of birth, and a further eight hospitals provided it for only some women. Few hospitals encourage women to initiate breastfeeding within one hour of birth or give breastfeeding instruction. Only ten hospitals allowed rooming-in for all women. One hospital did not provide for rooming-in because it was reported that women disliked having their babies in the same room when receiving visitors. Many hospitals (n = 29) reported that women were discharged within 24 hours of delivery. Contraception was discussed by staff in 23 facilities but provided by only nine.

Discussion

We feel our approach has identified many problematic hospital practices and has yielded useful results. However, two methodological concerns should be kept in mind when interpreting findings of this study. First, the sampling design aimed at capturing diversity in hospital policies and practices, and so unweighted figures shown in the tables are not nationally representative. However, calculation of weighted figures, as for example with the caesarean section rate and the stillbirth rate, shows weighted and unweighted figures to be very close (18 vs. 18% and 9 per 1000 vs. 10 per 1000, respectively).

Table 6. Postpartum care in 39 hospitals, Lebanon, 1997

Postpartum practices or routines	n	%
Baby given within half an hour of birth		
Never	7	18
All mothers hold	19	49
Some women[a]	8	20
All offered; some refuse	5	13
Baby kept with mother for 1st hour		
Never	26	67
All women	9	23
Some women	4	10
Rooming in		
Never	23	59
All women	10	26
In specific occasions	5	13
With mother 18 hours	1	3
Mothers helped to initiate breastfeeding		
Never	26	67
All women	9	23
Some women	4	10
Time baby brought for breastfeeding		
Directly after delivery	8	20
1–3 hours	20	51
5+ hours	9	23
Woman visits nursery	1	3
As early as possible	1	3
Time to discharge		
≤24 hours	29	74
>24 hours	10	26
Policy to discuss contraceptive method		
Do not discuss	3	8
Yes	23	59
Some women[b]	13	33
Provide family planning		
Yes[c]	9	23
No	30	77

[a] In specific occasions or upon request.
[b] Two hospitals reported that they discuss it in prenatal classes or for poor women; six hospitals discuss it upon the request of women; in five hospitals it is the decision of the doctor.
[c] Two hospitals have contraceptive statistics.

Moreover, the caesarean section rate obtained is very similar to that of 17% reported by a nationally representative household survey (PAPCHILD 1996). Secondly, our data rely on reported rather than observed practices or routines. Such results could be misleading if providers report what they think should be done rather than what they actually do. Data were not collected through observation because it would have taken a long time, especially in facilities with few deliveries, and because of concerns over a higher refusal rate from hospitals and women. Also, observation does not eliminate the possibility of providers changing behaviour to conform to what they think should be done.

The World Health Organization (WHO) estimates that one CEOC facility is required per 500 000 population, creating an overall requirement of seven CEOC hospitals for Lebanon. Lebanon has approximately 140 hospitals providing maternity care, and based on our sample of 39, we find the vast majority reporting a capacity to deal with obstetric emergencies without

requiring referral. This suggests Lebanon is certainly well endowed and possibly over-endowed with obstetric facilities (Van Lerberghe et al. 1997). Viewed from another perspective, the approximately 55 000 births per year (Ministry of Social Affairs 1996) divided over 140 facilities equates to nearly 400 births per facility per year on average, a number that is somewhat smaller than the average observed in our study.

The widespread lack of written guidelines in hospitals included in this study is a management problem (Table 1). The lack of standards means that there is no systematic record of what constitutes good practice, and no standard against which to evaluate problems in quality of care. This is compounded by a lack of critical evaluation of practices or indeed health outcomes, which means that hospitals in our study cannot be sure they are maintaining good quality care and achieving the best possible health outcomes.

The few health outcome data produced by our study generate a mixed picture of the results of Lebanese maternity care. The WHO recommends caesarean section rates in the range of 5–15%. Our average caesarean rate of 18% is higher than this recommended figure, though lower than that of United States at 21% (Monthly Vital Statistics Report 1995). However, some hospitals had a caesarean rate of 50%. There is still no consensus on what rates are acceptable in Lebanon; but the variability in these rates must be probed. A 2-year study conducted by a leading national insurance company in 1993 showed an average rate of 25%, and one which was higher in class A than other classes, suggesting possible economic incentives for over-use of caesarean-sections (MEDNET 1996). The average stillbirth rate of 10 per 1000 found here is double the level seen in many developed countries, though considerably lower than rates of around 30 per 1000 reported in some developing countries. Moreover, stillbirth rates in the various facilities showed wide variability. Facilities with high rates may need to audit stillbirths, to ensure this is due to random fluctuation in the smaller facilities or case-mix, rather than poor quality care.

Tables 2, 3 and 4 illustrate various aspects of women's experience in terms of quality of care. The lack of prenatal classes or written information means women, especially primigravidae, are likely to enter the labour or a delivery room with little information on what to expect or on the possibility of alternatives or choice. Many routines applied in the Lebanese facilities studied are not supported by scientific evidence that they benefit women and infants, and some may even do harm.

The findings in Table 2 suggest that there is the possibility of continuous support by professionals. The continuous presence of a trained support person has been shown to reduce the need for pain relief, operative vaginal delivery, caesarean delivery, and a 5-minute Apgar score <7. Continuous support was also associated with a slight reduction in the length of labour and fewer negative ratings of the childbirth experience (Hodnett 1997). We did not determine if the support in the 39 facilities was accompanied by provision of hands-on comforting and encouragement, and could not assess whether women actually received continuous professional support.

Social support available to women from their personal social networks also plays an important role in improving women's childbirth experiences (Klaus et al. 1986; Hofmeyr et al. 1991). We had clear evidence suggesting such support is widespread during labour in Lebanese facilities, but much more restricted in delivery. Cross-cultural differences may be important however; whereas the husband's involvement in delivery is seen as a positive trend in many Western societies, many study hospitals reported that women did not want a companion. Qualitative research in the Bekaa region of Lebanon confirms that many women feel modest in front of their husbands and would prefer to be alone or have their mother with them during childbirth (T Kabakian, personal communication). The provider, in most of the hospitals, did not want a female relative in the delivery room.

Cochrane Collaboration reviews clearly indicate that many of the common practices in Lebanese hospitals – denial of water and food, changing of clothes, routine perineal shaving, and routine enemas – are ineffective or even harmful (Enkin et al. 1995). For example, concern that a woman might require a caesarean section prompts hospitals to restrict water. Fifteen percent of hospitals in the study allowed women to take fluids during labour compared with 86%, respectively, of maternity units in England (Chalmers et al. 1991). Although we have no way of knowing whether Lebanese women desire water during labour, we need to be able to reassure providers that allowing water is not problematic. Even in the early 1980s, shaving and enema were less frequently used at maternity units in England (15 and 24%, respectively) and Canada (38 and 45%, respectively) than they are in Lebanon (77 and 93% of hospitals, respectively) (Chalmers et al. 1991). By the early 1990s shaving and enema were being further restricted in Canada to 25 and 39%, respectively (Kaczorowski et al. 1998). Only one Lebanese facility was aware that many of the practices were unnecessary. The above are all areas where Lebanese facility practices should be changed to reflect women's preferences.

Most, but not all, facilities reported allowing mobility during labour. It is suggested that mobility has numerous advantages including increased contractions that help cervical dilatation, greater maternal comfort and a decreased use of analgesia (Roberts et al. 1983; Lupe and Gross 1986). By contrast, adoption of supine position seems to compromise effective uterine activity, prolong labour, and lead to the increased use of drugs to augment labour (Roberts 1989).

Also, some routines such as intravenous infusion during labour (applied to almost all women in 79.5% of our study hospitals compared to 22% of maternity units in Canada in 1985) also serve to restrict mobility and should be discouraged. Another such practice is the use of routine continuous foetal monitoring. While continuous monitoring reduces the incidence of neonatal seizures by 50%, it increases caesarean and operative vaginal deliveries (by 33 and 23%, respectively) when compared to intermittent auscultation. In view of this, the decision to use continuous monitoring must be reached jointly by the pregnant woman and her clinician (Thacker and Stroup 1996).

Intra-muscular pain relief was used more often than epidural

analgesia despite the fact that epidural analgesia has been shown to be more effective than non-epidural methods (Howell 1997). Adverse effects of epidurals suggested by rather small trials reviewed include longer first and second stages of labour, increased oxytocin use, malrotation, instrumental delivery and caesarean section (particularly for dystocia) (Howell 1997).

Lithotomy is the position adopted in delivery in almost all our Lebanese facilities. This compares to 18% reported lithotomy position in Canada, and 0% reported in England (Chalmers et al. 1991). The favoured position in Canada and the UK in 1984–85 was semi-recumbent (52 and 74%, respectively). There is no ideal position in delivery. Each position has advantages and disadvantages. Women should be encouraged to adopt the position that they prefer and find most comfortable; data from Lebanon suggest women are given little choice.

Episiotomy is one of the commonest surgical procedures in Lebanese facilities. Yet data show that routine episiotomy use, when compared to restricted use, is associated with an increased risk of posterior perineal trauma, an increased need for suturing perineal trauma, and greater healing complications, and no difference in the risk of severe vaginal or perineal trauma, or of dyspareunia or urinary incontinence (Carroli et al. 1997). It does, however, decrease the risk of anterior perineal trauma. Since there is clear evidence that episiotomy may cause harm, a policy of routine episiotomies should be abandoned and rates above 30% cannot be justified (Argentine Episiotomy Trial Collaborative group 1993).

The second stage of labour begins when the cervix is fully dilated and ends with the birth of the baby. Six of the study hospitals imposed limits on the length of the second stage. This is not justified if the condition of both mother and foetus is satisfactory. However, the limits are wider than those applied in England where, in the 1980s, they imposed half an hour for multipara and 1 hour for nullipara (Garcia et al. 1986).

Early mother-baby contact, early breastfeeding, breastfeeding guidance, and rooming-in are practices promoted by WHO and UNICEF as having a positive impact on lactation success (Pérez-Escamilla 1994; Renfrew and Lang 1997). Yet our results show these practices are not accorded enough importance, with roughly a quarter of hospitals adopting them. It is possible that the use of anaesthesia in some hospitals makes this impossible if providers wait for women to be awake before bringing the baby for breastfeeding. Furthermore, early discharge from hospital, which takes place in nearly three-quarters of study hospitals, may affect women's breastfeeding experience (Renfrew and Lang 1997) either positively or negatively, but may also help family support. Given that UNICEF has actively tried to promote practices supportive of breastfeeding in Lebanon via the baby-friendly hospital approach, the relatively low adoption of such practices may be an indication of the difficulties of changing provider/hospital practice.

Finally, provision of contraception post-delivery is uncommon, perhaps due to the short length of stay. However, follow-up postnatal care is rare; delivery becomes a missed opportunity to discuss women's options for family planning and provide them with a contraceptive method.

Conclusion

In Lebanon, efforts to improve the state of maternal health have lead to increasing medicalization, with a large percentage of births occurring in hospital facilities. Yet hospitals do not appear to be keeping up-to-date on best practice, nor do they appear to have mechanisms for systematically evaluating their own practice. A large proportion of hospitals in our study perform routine procedures and interventions which either have no demonstrable medical benefit, or which may even carry a risk or be harmful to women and their infants. The authors would encourage all hospitals to adopt those practices and routines that are supported by medical evidence as benefiting women and their infants. Where there is no medical evidence of benefit or harm, we would encourage that practices are applied flexibly to cope with women's preferences. This is rarely done in Lebanese facilities: women often don't know what is happening to them, and are rarely given any choice. This is not to say women in Lebanon want to emulate what is happening in the West; nevertheless, in those areas where there are options, women should be informed of their choices.

Finally, it is ironic that, at a time when the avoidance of high technology and a shift toward providing more attractive home-like settings are becoming popular in the United States and Western Europe, many developing countries such as Lebanon are adopting high technology practices and features that were rejected by women in the West.

Recommendations

In Lebanon, there needs to be further work assessing the health outcomes of maternity care, and efforts made to improve facilities' policies and practices. Where best-practice is not in place, there is also a need for intervention. Intervention-related research may be required to implement changes in provider practice and to understand how best to change such practice in a setting such as Lebanon with a large, weakly regulated private sector. The authors of this paper, together with a group of researchers from the Faculty of Health Sciences at the American University of Beirut, in coordination with the Ministry of Health in Lebanon and UN agencies, are planning a workshop to disseminate research findings, introduce concepts of evidence-based medicine in childbirth, and lay the ground for intervention studies. This workshop is addressed to policy and decision makers that have an impact on regulating practices related to childbirth, and to the business community (insurance companies, women's groups, etc.). As a result, a plan of action will be developed to review practices, to implement change and to formulate written policies to be applied by hospitals under the supervision of the Ministry of Health.

Finally, we also recommend repeating the use of this relatively simple research tool to describe and characterize maternity care services for normal childbirth in other countries.

References

Administration Centrale de la Statistique. 1998. Condition de vie des menages en 1997. Etudes Statistiques. February 1998. Republique Libanaise.

Argentine Episiotomy Trial Collaborative Group. 1993. Routine vs selective episiotomy: a randomised controlled trial. *Lancet* **342**: 1517–8.

Carroli G, Belizan J, Stamp G. 1997. Episiotomy policies in vaginal births. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds.) Pregnancy and childbirth Module of The Cochrane Database of Systematic Reviews, updated 12 February 1997. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Chalmers I, Garcia J, Post S. 1991. In: Chalmers I, Enkin M, Keirse MJNC. *Effective Care in Pregnancy and Childbirth*. Oxford: Oxford University Press.

Enkin M, Keirse M, Renfrew M, Neilson J. 1995. *A guide to effective care in pregnancy and childbirth*. 2nd ed. Oxford: Oxford University Press.

Garcia J, Garforth S, Ayers S. 1986. Midwives confined? Labour ward policies and routines. Research and the midwife conference, Manchester, 1985. University of Manchester: Research and the Midwife Conference Proceedings: pp. 74–80.

Hodnett ED. 1996. Continuity of caregivers during pregnancy and childbirth. In: Enkin MW, Keirse MJNC, Renfrew MJ, Neilson JP (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 6 September 1996. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 3. Oxford: Update Software; 1996. Updated quarterly. Available from: BMJ Publishing Group, London.

Hodnett ED. 1996. Continuity of caregivers during pregnancy and childbirth. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 4 March 1996. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Hodnett ED. 1997. Support from caregivers during childbirth. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 20 November 1997. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Hodnett ED. 1997. Support from caregivers during childbirth. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 4 March 1997. Available in *The Cochrane Library* database on disc and CDROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Hofmeyr GJ, Nokodem VC, Wolman WL, Chalmers BE, Kramer T. 1991. Companionship to modify the clinical birth environment: effects on progress and perceptions of labour, and breastfeeding. *British Journal of Obstetrics and Gynaecology* **98**: 756–64.

Howell CJ. 1997. Epidural vs non-epidural analgesia in labour. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 27 September 1997. Available in *The Cochrane Library* database on disc and CDROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Johnstone FD, Aboelmagd MS, Harouny AK. 1987. Maternal posture in second stage and fetal acid base status. *British Journal of Obstetrics and Gynaecology* **94**: 753–7.

Kaczorowski J, Levitt C, Hanvey L, Avard D, Chance G. 1998. A national survey of use of obstetric procedures and technologies in Canadian hospitals: routine or based on existing evidence? *Birth* **25**(1): 11–8.

Kennell J, Klaus M, McGrath S, Robertson S, Hinkley C. 1991. Continuous emotional support during labour in a US hospital: A randomized controlled trial. *Journal of the American Medical Association* **265**(1): 2197–201.

Klaus MH, Kennel JH, Robertson SS, Sosa R. 1986. Effects of social support during parturition on maternal and infant morbidity. *British Medical Journal* **293**(6547): 585–7.

Kurz CS, Schneider H, Huch R, Huch A. 1982. The influence of the maternal position on the fetatranscutaneous oxygen pressure ($tcpO_2$). *Journal of Perinatal Medicine* **10**(2): 74–5.

Lupe PJ, Gross TL. 1986. Maternal upright posture and mobility in labor – a review. *Obstetrics and Gynecology* **67**: 727–34.

Maine D. 1991. Safe motherhood programs: options and issues. Columbia University, New York, NY: Center for Population and Family Health, School of Public Health, Faculty of Medicine.

MedNet. 1996. Maternity: claims and management. *MedNet Program*, Bulletin No. 8, Lebanon.

Ministry of Social Affairs. 1996. Population and housing database survey. Ministry of Social Affairs: Lebanon. 14 October 1996.

Monthly Vital statistics report, Vol. 45, No. 11 Supplement. 1995.

PAPCHILD. 1996. Preliminary report. Ministry of Health, Lebanon.

Pérez-Escamilla R, Politt E, Lonnnerdal B, Dewey KG. 1994. Infant feeding policies in maternity wards and their effect on breastfeeding success: an analytical overview. *American Journal of Public Health* **84**(1): 89–97.

Renfrew MJ, Lang S. 1994. Feeding schedules for newborn babies in hospital In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 2 February 1994. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Renfrew MJ, Lang S. 1994. Breastfeeding technique. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 5 May 1994. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Renfrew MJ, Lang S. 1997. Early initiation of breastfeeding. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of the Cochrane database of systematic reviews, updated 4 March 1997. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Roberts J, Mendez-Bauer C, Wodell DA. 1983. The effects of maternal position on uterine contractility and efficiency. *Birth* **10**: 243–9.

Roberts J. 1989. Maternal position during the first stage of labour 1989. In: Chalmers I, Enkin M, Keirse MJNC. *Effective care in pregnancy and childbirth*. Oxford: Oxford University Press, pp. 883–92.

Sleep J, Roberts J, Chalmers I. 1989. Care during the second stage of labour. In: Chalmers I, Enkin M, Keirse MJNC (eds). *Effective care in pregnancy and childbirth*. Oxford: Oxford University Press.

SPSS. 1988. Statistical Package for the Social Sciences. *SPSS-X: introductory statistics guide for release 3*. Chicago, IL: SPSS, Inc.

Thacker SB, Stroup DF. 1996. Continuous Electronic Fetal Heart Monitoring during Labor. In: Neilson JP, Crowther CA, Hodnett ED, Hofmeyr GJ, Keirse MJNC (eds). Pregnancy and childbirth module of The Cochrane database of systematic reviews, updated 27 June 1996. Available in *The Cochrane Library* database on disc and CD-ROM. The Cochrane Collaboration; Issue 2. Oxford: Update Software; 1997. Updated quarterly.

Van Lerberghe W, Ammar W, El Rashidi, R, Sales A, Mechbal A.

1997 Reform follows failure: I. Unregulated private care in Lebanon. *Health Policy and Planning* **12**: 296–311.

Waldenstrom U, Nilsson CA. 1994. Experience of childbirth in birth center care: A randomized controlled study. *Acta Obstetricia et Gynecologie Scandinavica* **73**: 547–54.

WHO. 1993. Coverage of maternity care: a tabulation of available information. WHO/FHE/MSM/93.7. Geneva: World Health Organization.

WHO. 1994. Mother–baby package: implementing safe motherhood in countries.WHO/FHE/MSM/94.11. Geneva: World Health Organization.

Acknowledgements

We acknowledge the financial support of the Mellon Foundation to the Faculty of Health Sciences, American University of Beirut and of the Department for International Development (UK) to the Maternal and Child Epidemiology Unit of the London School of Hygiene and Tropical Medicine. We would like also to thank all hospitals that participated in the study and the medical staff who gave of their time to provide us with the information. We thank Monique Chaaya, Prem Saxena and Faysal al Kak from the American University of Beirut and George Maalouf from the Ministry of Health for their inputs into the study design; Kassem Kassak and Haytham Hajjar for their comments on the questionnaire; Rosa Hatait, Dania Shaar and Shady Hayek for their help in interviewing; and Rudi Pittrof, Jocelyn De Jong and Jo Garcia for their comments on the manuscript. Support for writing was provided by the European Commission DGXII Avicenne Initiative through the MAMAH Network.

Biographies

Rita Khayat, BS, MPH, is an Instructor at the Faculty of Health Sciences, American University of Beirut. She has interests in population studies and teaching. She supervised the Beirut 1992–93 study, a large-scale household survey conducted at the American University of Beirut. She has also supervised the data collection of clinic and hospital-based studies of reproductive health in Lebanon.

Oona Campbell, BS, ScM, Ph.D., is a Senior Lecturer in Epidemiology and Population Sciences, and currently heads an international programme of research on Effective Services in Maternal Health at the London School of Hygiene and Tropical Medicine. She is a reproductive epidemiologist with interests in reproductive health including abortion, contraceptive safety, female mortality, breastfeeding and birth interval dynamics among others. She has conducted research in many countries but has a special interest in the Middle East.

Correspondence: Rita Khayat, Faculty of Health Sciences, American University of Beirut, Beirut, Lebanon.