WOMEN'S SELECTION AND EVALUATION OF OBSTETRIC HOSPITALS: A SURVEY OF THE NORTHERN SYDNEY AREA

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ABSTRACT

A study of women's views of maternity services in the Northern Sydney Area Health Service was conducted as a result of the changing patterns of use of the Area's 7 obstetric hospitals. 340 primiparous women living in the Northern Sydney Area who had given birth in the previous six months were approached in Early Childhood Health Centres and asked to complete a survey exploring the factors influencing their choice of obstetric hospital, postnatal length of stay in hospital, and overall satisfaction with their choice of hospital. Of the 315 eligible women, 312 (99%) consented to participate and 297 (94%) completed the survey. Overall, reputation of the hospital and quality of nursing care were the most frequent reasons given for choice of hospital and there was some evidence that women selected different hospitals for distinct reasons. Women's postnatal length of stay ranged from less than 1 day to 11 days with an average of 5.3 days. Private patients stayed an average of 1 day longer than public patients, after adjusting for delivery type and pregnancy induced hypertension. There was little evidence that women in the Northern Sydney Area Health Service desire a shorter postnatal stay with the majority of women reporting they were satisfied with their length of stay. Overall, women displayed high levels of satisfaction with their choice of hospital; at least 90% of women attending all hospitals except one reported that they would choose the same hospital for the birth of another baby. This study provides valuable information, based on the experiences of the service users, to help guide the Northern Sydney Area Health Service in the provision of its maternity services to ensure they meet the changing needs of women and their families.

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LIST OF ABBREVIATIONS

AHS	Area Health Service
ECHC	Early Childhood Health Centre
HKH	Hornsby Ku-ring-gai Hospital
LOS	Length of stay
MV	Mona Vale Hospital
NESB	Non English Speaking Background
NSA	Northern Sydney Area
NSAHS	Northern Sydney Area Health Service
NVD	Normal vaginal delivery
PIH	Pregnancy induced hypertension
RNS	Royal North Shore Hospital
SAN	Sydney Adventist Hospital

CHAPTER 1: INTRODUCTION

1.1 OVERVIEW OF MATERNITY SERVICES IN AUSTRALIA

1.1.1 Changes in childbirth

Australia is fortunate to have high standards of obstetric services. There have been significant declines in maternal and perinatal morbidity and mortality for the majority of Australian women, reflecting the improvements that have been achieved in antenatal care, medical technology, pain management and training of highly skilled clinicians.[1-4] However, there has been some concern that these improvements have occurred at the expense of other aspects of childbirth, and that psychosocial issues in particular have been neglected. It is now recognised that satisfaction of maternity service users is an important outcome measure in maternity care.[5-9]

An increasing proportion of women and their partners are now demanding a more active role in the decision-making concerning childbirth, and more choices in where and how to give birth. Consumer organisations, women's groups, and some health professionals believe that childbirth should be perceived as a natural process rather than a medical procedure and lobbying from these groups has resulted in considerable changes in childbirth trends over time. For example, the place of birth has shifted from the home to sterile labour rooms and back to more homely labour wards, birth centres and homebirths. There are now more options available in where to give birth than

previously, and increasingly more mothers are choosing to have their baby in birth centres and at home. Fathers are now encouraged to at least attend the birth and new born babies are kept with their parents immediately after delivery.

Concurrent with these significant moves, the desire to make childbirth safer has resulted in it becoming more medicalised. Advanced medical technology and highly trained obstetricians are now part of routine care in pregnancy and birth, rather than resources drawn upon only in the event of obstetric complications. Hence, over the last 30 years there has been a gradual rise in the rate of caesarean section deliveries, use of regional analgesia or epidural block and electronic fetal monitoring.[2-4,10-11] Obstetricians report that this partly reflects the trend toward defensive obstetrics because of increasing litigation.[12]

The age of women giving birth in Australia has also increased in recent years and possibly reflects their changing role in society and the increasing demands that are placed upon them. In 1995, the average age of all women giving birth was 28.4 years compared to 27.9 years as recently as 1991. This trend is also reflected in women having their first baby. The average age of mothers having their first baby in 1995 was 26.5 years compared to 25.8 years in 1991. However, one of the consequences of increasing maternal age is the increased risk of obstetric complications.[1,13]

There has also been an overall trend towards shorter postnatal length of stay (LOS). In 1995, approximately 35% of women stayed in hospital for less than

four days after the birth of their baby, compared to only 20% of women in 1991. This is further compounded by the decrease in the proportion of women having their baby as a private patient. Since 1989 there has been a 70% decrease in the proportion of women having their baby privately, resulting in increased pressure on beds in public hospitals.[1,13]

As the first step in a unified move to bring about change in the provision of maternity services in Australia, three ministerially appointed committees were established in the late 1980's. Their purpose was to review the obstetric services of NSW, Victoria and Western Australia and provide recommendations on how best to improve the maternity system in Australia to ensure the changing needs of the service users were met.[7-9] These extensive reviews yielded valuable information, however, the challenge of implementing their recommendations remains.

1.1.2. The existing maternity system

The current maternity system in Australia is characterised by services concentrated in obstetric units that are usually part of a large general hospital in metropolitan areas. In some capital cities there are specialist women's hospitals that provide both obstetric and gynaecological services, however these are becoming fewer. Some hospitals have also established birth centres and midwifery units. Essentially, women in Australia have a choice of three options for the birth of their baby: hospital labour ward, birth centre or homebirth.[2-4,6] A brief description of each option follows.

Hospital birth

Most births in Australia occur in a hospital, with the majority (98%) taking place in a conventional labour ward with a high level of intervention.[1] Although labour wards vary greatly between hospitals in their atmosphere and practices, facilities usually include a hospital bed, chairs, medical equipment in view, ensuite facilities or a close bathroom and birthing equipment such as mats or bean bags. Although most hospitals claim to be flexible enough to accommodate most labour and birth preferences expressed by women, provided no complications occur, many women report feeling that their requests were not listened to and they had no control over the birth process.[6,8]

Some hospitals have recently introduced birthing rooms as another alternative within their labour ward. This type of delivery room is for low-risk births

requiring the minimum of medical intervention. The room is furnished in the style of a comfortable bedroom to provide a relaxed non-clinical environment for a normal birth with family participation. Birthing rooms are often seen as a middle ground between traditional labour ward delivery room and birth centre.

Hospital labour wards tend to follow the traditional medical model of obstetric care with a specialist obstetrician or general practitioner as the primary provider or supervisor of care. More recently, some hospitals have incorporated other models of care and established midwives clinics where one midwife carries out all antenatal care; shared antenatal and postnatal care programs with general practitioners; and a few allow independent or visiting midwives to provide autonomous care for women. In accordance with medical practitioners, midwives usually monitor the progress of labour and provide postnatal care of women and their babies whilst they remain in hospital.[2-4,6]

Following the national trend of declining rates of private health insurance, approximately two-thirds of women giving birth in a hospital are admitted as a public patient.[1,14] These patients receive free care in a public hospital from a doctor appointed by the hospital with all medical costs and accommodation covered by Medicare, the national health care scheme. Although the standard of care provided to public patients is high, disadvantages include the lack of choice in who delivers the baby and little continuity of care.[2-4,6]

The other one third of women who have a hospital birth receive private care by a specialist obstetrician or general practitioner of their choice.[1] These patients

receive antenatal care from their obstetrician or general practitioner who also attends the birth and conducts postnatal check-ups, resulting in some continuity of care. However, choice of hospital is restricted to those the obstetrician or general practitioner is accredited to and there is always the chance that the obstetrician or general practitioner may not be present at the labour. Generally, only women who can afford private health insurance have access to this style of care.

Recent reviews of obstetric services in Australia have urged for the management of uncomplicated pregnancies and labour by midwives and general practitioners to be increased in an effort to promote continuity of care and increase the birth options available in the hospital setting. The skill level of specialist obstetricians is not required by a large proportion of low-risk pregnant women who are under their care and is more appropriately utilised in the management of high-risk deliveries.[7-9] While several studies[15-17(a)] have shown that shared antenatal care programs have support from both health professionals and women, a more recently published state-wide study found women were significantly dissatisfied with shared care.[17(b)]

Birth centre

Slightly less than two percent of women are recorded as giving birth in a hospital birth centre.[1] However, it is likely that the true proportion is slightly higher as Victoria and Queensland do not designate birth centre separately on birth notification forms. Birth centres are a relatively new concept in Australia and comparatively few in number. However, they are becoming increasingly

popular and there is currently an unmet demand for this option.[8] Each of the three state-wide reviews into maternity services recommended the expansion of hospital birth centres to accommodate consumer demand for this option.[7-9]

A birth centre is a room or set of rooms, usually in a hospital, where midwives supervise low-risk births with minimal intervention. In contrast to hospital labour wards, birth centres aim to provide a family-centred and non-clinical environment in which women and their partners remain in control of the birth process. Facilities usually include a double bed, bean bags, pillows, mats, stools, showers and baths. Self-help pain management, such as massage, movement, showers, is encouraged although 'gas' is available if requested. Women who develop complications during childbirth are transferred to the hospital labour ward, which occurs in approximately 20% of cases.[18] Most birth centres have a maximum stay of 24 hours post-delivery.

Both public and private patients are eligible to attend a birth centre. Midwives are the primary care providers responsible for all aspects of care throughout pregnancy, labour, the delivery and the immediate post-delivery period. Shared care arrangements generally also exist with general practitioners and specialist obstetricians. [2-4,6]

Homebirth

Homebirth remains a controversial issue in Australian obstetrics due to conflict over its safety.[19] Although the most recent national data available show that homebirths accounted for less than 1% of births in Australia in 1995, they

increased by 17% from the previous year.[1] However, there is some uncertainty about the accuracy of these data. Bastian and Lancaster[20] reported that data collected from multiple sources indicated that more than 1,100 home births occurred each year between 1988 and 1990 and yet in 1991, the first year that national perinatal data were available, only 898 homebirths were notified to the perinatal data collection.[13] Hence, it is likely that the true number of homebirths is higher than that reported in the State and Territory perinatal collections.

Homebirth is intervention-free and avoids the use of medical equipment such as forceps and chemical pain management. An independent midwife attends the majority of homebirths in Australia although there are also a small number of lay midwives and doctors who participate in this style of care. Although continuity of care is achieved from antenatal care through to postnatal care with this birth option, there are no guidelines describing the criteria women should meet to make birth at home a safe option.

1.2 THE NORTHERN SYDNEY AREA HEALTH SERVICE

The Northern Sydney Area Health Service (NSAHS) has the largest population of any Area Health Service (AHS) in NSW. It manages the hospitals and community health services in 11 local government areas north of Sydney Harbour. Compared with the rest of NSW, the Northern Sydney Area (NSA) has an older population and lower rates of fertility.[21] In 1991, 27% of people living in the NSA were born overseas with 56% of these from a non English speaking background (NESB). Chinese and Italian are the most common languages other than English spoken at home. The Area has a high socioeconomic status, reflected in higher annual incomes and a higher proportion of residents in professional, administrative and service occupations than NSW generally.

1.2.1 Overview of births

In 1995, the year this study was undertaken, 8690 babies were born to women living in the NSAHS, accounting for 10% of all babies born in NSW in that year.[22] Since 1988 the number of births to women living in the NSA has increased by approximately 7%.[23]

Of the 8690 babies born to women living in the NSA, almost all (98%) were born in a hospital, reflecting the tendency across the nation to give birth in a hospital. Another 1% of births to women in the NSA took place in a birth centre, which is lower than both the state and national rate, as expected, given that the

NSA does not have a birth centre.[1,22] In 1994, women from the NSA accounted for more than half of planned birth-centre births at the Royal Women's Hospital, the second biggest birth centre in Sydney at that time, and for almost one third of planned birth-centre births at King George V hospital, the biggest birth centre in Sydney.[24]

Another 1% of births were either homebirths, planned birth-centre births delivered in a hospital, planned homebirths delivered in a hospital, or born before arrival. Overall, the NSA has a higher proportion of homebirths than both the state and national rate. Of all AHSs in NSW, homebirths are most common in the NSA, accounting for almost one quarter of all homebirths.[22]

Following recent national trends, the proportion of older mothers in the NSA has been steadily increasing. For example, in 1988, only 17% of NSA mothers giving birth were aged 35 years or over[23] compared with 23% in 1995. The NSA has the highest proportion of mothers in older age groups in all NSW[22] and a considerably higher proportion of mothers aged 35 years or more than the national rate of 13%.[1] Given that adverse outcomes are more likely with increasing maternal age, it is important to highlight the increasingly high proportion of older mothers in the NSA as this is likely to have implications on the provision of maternity services in the Area.

Overall, the NSA has a high proportion of mothers born in countries other than Australia. About one third of NSA women giving birth were born in other countries compared to 26% for the rest of NSW[22] and 23% for Australia.[1] Asia

(13%) is the most common region outside of Australia from which NSA mothers originate,[22] reflecting the national trend of increasing proportions of mothers from Asia.[1,13] This is another important characteristic of NSA mothers as it has implications for the provision of culturally acceptable maternity services in the Area.

With respect to type of delivery, the 63% of NVD to women in the NSA is slightly lower than in the rest of NSW (69%) and the national rate (67%), whilst the proportion of caesarean births (21%) is slightly higher than the rest of NSW (17%) and the national rate (19%).[1,22] These differences are to be expected given that the NSA has a high proportion of older mothers and evidence suggests that caesarean section and assisted vaginal deliveries increase with increasing maternal age.[1,13,25,26]

1.2.2 Profile of maternity hospitals

Seven hospitals in the NSAHS provide obstetric services. Five of these hospitals (Hornsby Ku-ring-gai Hospital (HKH), Manly, Mona Vale Hospital (MV), Royal North Shore Hospital (RNS) and Ryde) are public hospitals and two (Sydney Adventist Hospital (SAN) and Mater) are private. The RNS hospital is also a regional tertiary referral unit equipped to manage high-risk deliveries and critically ill babies. In 1995, there were a total of 9,882 babies born in these hospitals representing 11% of all babies born in NSW in that year.[22] More than two thirds of the Area's total births are delivered at only three

(SAN, RNS, Mater) of the Area's seven obstetric hospitals. An overview of the main features of each obstetric hospital is provided in Table 1.

A review of the national perinatal data shows that public patients are more likely to have a NVD than privately insured women.[1,13] As can be seen in Table 1, this is apparent in the NSA where all public obstetric hospitals except RNS have NVD rates exceeding 69%, compared with the two private hospitals, that is the Mater and the SAN, whose NVD rates are 54% and 63% respectively. The proportion of caesarean section deliveries is similar to the NSW average of 17% at all hospitals except the Mater and RNS where they are considerably higher.[22] As RNS is the regional tertiary referral hospital, higher rates of caesarean section deliveries would be expected in order to manage pregnancy complications.

TABLE 1:Overview of key features of maternity hospitals in the NSA in 1995

	HKH	Manly	Mater	MV	RNS	Ryde	SAN
Hospital status	Public	public	private	public	public	public	Private
No. births 1995[a]	1069	952	1,674	771	2,287	834	2,295
Normal vaginal rate[a]	72%	69%	54%	69%	57%	74%	63%
Caesarean rate[a]	17%	19%	24%	15%	27%	16%	20%
Induction rate[a]	26%	23%	26%	26%	21%	19%	31%
Episiotomy rate[a]	26%	20%	36%	14%	39%	16%	32%
Midwives clinic	Yes	yes	no	no	yes	yes	no
Shared care	Yes	yes	no	yes	yes	yes	no
Birth centre	No	no	no	no	no	no	no
Birthing room	Yes	yes	no	yes	yes	yes	no
Range of birth options	Yes	yes	yes	yes	yes	yes	yes
Private rooms	Some	some	some	some	some	no	some
Early discharge	Yes	yes	yes	yes	yes	yes	yes
Special care nursery	Yes	yes	yes	yes	NICU	yes	yes
Hospital facilities							
• education classes	Yes	yes	yes	yes	yes	yes	yes
• exercise classes	yes	yes	yes	yes	yes	yes	yes
• lactation consultant	yes	yes	yes	yes	yes	yes	yes

[a] Source: Taylor & Pym (1996)

An important characteristic of the maternity hospitals and services in the NSA is the lack of a birth centre. In 1989, at the time of the review of NSW maternity services, RNS was proposing to establish a two-bed birth centre.[9] However, despite this and a specific recommendation of the NSW Review into Maternity Services that a birth centre be established at RNS, the NSA still did not have a birth centre in 1995. It is argued by the NSAHS that the maternity services currently offered by the AHS meet the needs of 90% of the community, so birth centres will not be implemented in any of its hospitals.[27] Women from the NSA who wish to receive birth centre care must therefore continue to travel to another AHS. Fortunately, this does not translate into women's birth choices in the NSA being restricted to either the traditional hospital delivery suite or homebirth. Most of the NSA obstetric hospitals now include birthing rooms in their maternity unit as an alternative to the traditional delivery suite.

All of the NSA obstetric hospitals claim to offer a range of birthing options, to be flexible in their approach to birthing and supportive of women in their decisions concerning their labour and birth experience as long as there are no complications. Each of the seven hospitals offers a range of education and exercise classes and the services of a lactation consultant to assist with breast feeding. All hospitals except Ryde have some private rooms available for patients during their postnatal stay. As the regional tertiary referral centre, RNS offers a high-level neonatal intensive care unit (NICU) equipped to manage emergencies. Although each of the other obstetric hospitals has a special care nursery, babies requiring the highest level of neonatal care are transferred to RNS.

Each of the obstetric hospitals offers an early discharge scheme with varying degrees of postnatal support. For example, Manly offers an early discharge option after 2 days, with daily home visits from a hospital midwife for several days. In contrast, the SAN early discharge program is available only to patients who are insured with one particular health insurance company that covers the costs associated with home visits by nursing staff. Other women who choose to leave the hospital early do not receive followup care at home.[28-32]

Another important feature of the range of maternity services offered in the NSAHS is the presence of Castlecrag hospital. Castlecrag is a private hospital that provides postnatal care by specialist midwives in a dedicated unit of 11 private rooms. Although women who have given birth at any hospital are able to transfer to this facility for postnatal care, the hospital liaises particularly closely with the obstetric services at RNS.[28,33]

1.3 MATERNITY SERVICES RESEARCH

There is an increasing literature about the experiences and expectations of Australian women in relation to care in childbirth. A wide range of issues, including women's childbirth education and information needs, continuity of care, preferred approaches to childbirth, obstetric early discharge and postnatal support, have been explored. This thesis focuses on choice of hospital, postnatal LOS, and overall satisfaction with choice of hospital, as these are the issues of greatest concern and interest to the NSAHS. As the maternity care systems operating in the United Kingdom, United States of America and Canada are substantially different to the model of care that exists in Australia, only studies reporting Australian data in relation to choice of hospital, postnatal LOS, and overall satisfaction with choice of hospital have been reviewed.

1.3.1 Methodological issues

Women who have recently had a baby or who are pregnant are generally eager to share their opinions and experiences.[34] However, there are a number of methodological issues that must be taken into consideration when exploring women's views and experiences of maternity services.

There is some evidence that women recall their birth experiences accurately and are reliable sources of information. A study by Bennett[35] found that

women's recall of the events of the birth of their first child were generally accurate on reinterview two years later. This finding is reinforced by another Australian study in which a comparison of 397 primiparous women's reports of obstetric events with their medical records found high levels of agreement.[36]

However, one problem identified with collecting information about maternity services directly from women themselves is the issue of the timing of data collection. Although accessing women in hospital has the advantage of a representative population within a few days of birth, there is the possibility of biased responses for fear of medical care being compromised should dissatisfaction be expressed. Furthermore, it is likely that the researcher could be perceived as being affiliated with the service, which may inhibit women in their responses. It is also possible that asking women about their birth experience in the weeks immediately following the birth may result in responses that are generally positive due to the 'halo' effect of giving birth.[37] However, whilst delaying seeking women's experiences and opinions may result in bias due to subsequent events, studies have found that women become more critical of the birth as time elapses and the halo effect wears off.[35,38] These findings suggest that it is beneficial to allow women some time to put their birth experience into perspective before seeking their views.

If research about maternity services is to influence the provision of appropriate health services, it is important that recommendations are representative of the service users. Most studies about maternity services are based on small, selective samples. More recently, however, several population-based studies

have been conducted using postal questionnaires. Although postal surveys generally elicit lower response rates than interview techniques, there is some evidence that self-administered postal surveys are a cost-effective method of monitoring maternity services and are capable of achieving response rates greater than 70%.[8,39] Self-administered questionnaires are advantageous in consumer research primarily because they enable populations to be sampled relatively inexpensively and yield quantifiable responses.

Whilst the issues described above apply to the conduct of maternity services research in general, much has been written about the methodological issues specific to assessing satisfaction with care. Essentially, satisfaction with care is a poorly defined, multidimensional concept often used interchangeably with terms such as 'positive perception' to monitor the quality of health services.[40,41] At a basic level, a patient's satisfaction is primarily based on his/her perception of their experience compared to their expectation.

A common approach used to assess satisfaction is to ask about the likely choice for a subsequent birth, including willingness to return to the same hospital. Responses to these questions must be interpreted with caution as the respondent may not have a choice, or may be choosing the least unsatisfactory option, or possibly stating a preference for an event they are familiar with rather than one they have not experienced.[37]

Such an approach to measuring overall satisfaction usually underestimates levels of dissatisfaction.[41,42] It has been suggested that more useful and

sensitive data can be obtained by including open-ended questions that allow women to elaborate on different aspects, and by focusing questions on specific issues rather than on general satisfaction.[34,41,42a]

The issues outlined above were considered when selecting appropriate literature to review and during the development and refinement of the research methodology of the current study.

1.3.2 Choice of hospital

Several studies were identified that explored women's reasons for selecting a particular hospital for the birth of their child. Research of this type provides valuable insights into those aspects of care that women identify as important, thus enabling hospitals to focus their resources on modifying service delivery in those areas that influence prospective mothers in their choice of hospital. It also enables individual hospitals to gain some indication of those aspects of their service that are perceived as being well provided. Literature concerning choice of birth centre falls beyond the scope of this thesis as the NSAHS does not have a birth centre.

Possibly the first large-scale population based consumer survey of maternity services in Australia was undertaken in 1987 as part of the Ministerial Taskforce Review of Obstetric Services in NSW.[43] Telephone interviews were conducted with 724 women booked into 8 hospitals with major obstetric units,

including 2 hospitals from the NSA (RNS, SAN). One component of the interview extensively explored women's reasons for their choice of hospital, including whether they by-passed their local hospital.

Overall, quality of nursing staff was the most common reason for choice of hospital, followed by close proximity and availability of emergency facilities. Analyses found that perceived differences in the hospitals themselves and whether women were in hospital as a public or private patient influenced women's selection of hospital. The two most frequently given reasons for choosing RNS were that it was close to home and had facilities for emergencies. Quality of the nursing staff was the most frequently given reason for choosing the SAN. Regression analyses determined that RNS was distinctively selected for its neonatal intensive care unit whilst the SAN was selected for the quality of its nursing staff. Five percent of women were unable to have their baby at their preferred hospital, primarily because their doctor did not practise there.

Fifty eight percent of women reported bypassing their local obstetric hospital in favour of another hospital and were most likely to be private patients. The most common reason given overall for choosing another hospital were that their chosen doctor did not go to the local hospital or recommended another hospital, poor reputation of the local hospital and inadequate general hospital facilities; these findings are similar to those of Whelan.[44] These were also the main reasons reported by women who bypassed their local NSA hospital.[43]

Robinson et al[45] found previous experience at another hospital to be the main reason for women by-passing their local obstetric hospital.

A state-wide cross-sectional survey of consumer views was also undertaken in 1989 as part of the ministerial review of obstetric, neonatal and gynaecological services in Western Australia. 1,315 women who had given birth three months earlier completed a postal self-administered questionnaire which included one question on women's choice of hospital. More than half the women reported that easy access to the hospital was the reason they selected the hospital, while just over a third selected their hospital because of its good reputation or because someone recommended it to them.[46] Similar findings were obtained when this survey was repeated 5 years later with 568 women who had given birth in Western Australia in the previous 6-7 months.[47]

The findings of these state-wide studies are similar to those reported in regional studies. In a study undertaken by the Illawarra Area Health Service in 1993, a sample of 374 women, who had given birth in one of three maternity units located in the Area in the previous six months, completed a postal self-administered questionnaire. The main reasons women gave for choosing a particular hospital for giving birth were that it was close, that it was the only choice available to them and that their doctor delivered there.[48] Again, these findings are similar to those of Whelan.[44]

A survey undertaken by Cunningham[49] in 1993 to compare the experiences of Sydney mothers who gave birth at home, at a birth centre or in a hospital labour ward, included a component exploring the reasons for the choice of

birthplace. 395 women who had given birth within the last year completed a postal self-administered questionnaire. Of the women who gave birth in a hospital labour ward, the most common influences on their choice of birthplace were safety, the availability of medical facilities and proximity of the hospital to home.

The only relevant studies identified that focused on women in the NSAHS are unpublished.[50,51] Both studies were small, methodologically flawed, incomplete in their reporting and should therefore only be considered as preliminary and explorative. However, they may give some clue as to which issues are important to women in the NSAHS.

A convenience sample of mothers attending Early Childhood Health Centres (ECHC) in one region of the NSA, with children less than 12 months old, found the most important factors in choosing an obstetric hospital to be the obstetrician, the reputation of the hospital and close proximity to the hospital.[50] These findings are similar to those obtained in a later survey of women still in one of the five NSA public obstetric hospitals after giving birth there. Proximity to home was the most frequently reported reason overall for choice of hospital and, not surprisingly, medical facilities was the most frequently reported reason for choosing RNS.[51]

In summary, these few studies have consistently found convenient access, favourable reputation, medical facilities and obstetrician's association with particular hospitals to be the most common influences on a woman's choice of

hospital and provide valuable information for the planning of maternity services. However, it remains unknown whether these findings reflect the views of women in the NSAHS.

1.3.3 Maternal postnatal length of stay

Maternal postnatal LOS in hospital may be influenced by factors such as the type of delivery, maternal and medical obstetric complications, neonatal morbidity and specific hospital early discharge policies. In 1995, postnatal LOS for women in Australia ranged from less than 1 day to more than 28 days with more than half of women staying between 3 and 5 days.[1] Thirty six percent of mothers were discharged from hospital less than 4 days after giving birth, compared with 20% in 1991.[1,13] There is some evidence that privately insured mothers are more likely to stay in hospital longer than public patients[1,46,47,52] Factors associated with a stay of less than 5 days are younger age, higher parity, Aboriginality, spontaneous delivery and giving birth in maternity units of medium size.[1] Other studies have also found average postnatal LOS is shorter for vaginal deliveries than for caesarean section.[47,52]

Appropriate postnatal LOS is a contentious issue in maternity care and is particularly important given the current move towards short-stay models of care such as birth centres, and the increasing implementation of obstetric early discharge programs. Although reduction in postnatal LOS may be viewed favourably by hospitals as a means of reducing pressure on beds and freeing

up resources for other uses, shorter postnatal LOS may not be acceptable to all women. Several studies were identified that looked at women's satisfaction with their postnatal LOS. The literature concerning the medical, psychosocial and economic consequences of early obstetric discharge and women's satisfaction with the early obstetric discharge scheme is not reviewed here as this falls beyond the scope of this thesis.

As part of the Victorian Ministerial Review of Birthing Services, a consumer survey of satisfaction with maternity care was conducted in 1989. A representative population-based sample of 1193 women who had given birth 8-9 months earlier completed a postal self-administered survey, which included 3 questions about length of hospital stay after giving birth. Early discharge was defined as discharge in less than 5 days, as most women in Victoria at that time stayed in hospital for 5 days after a normal vaginal delivery (NVD). Approximately one quarter of the sample had been discharged early from hospital. Overall, high levels of satisfaction with postnatal LOS were expressed, more than 80% of women feeling their LOS had been right, 11% feeling it had been too long and only 7% feeling it had been too short. [52] A second population-based survey was conducted in 1993 with a sample of 1336 women who had given birth 6-7 months earlier. Overall, 21% of the 355 women who left hospital within 48 hours of giving birth and 26% of the 126 women who left 3-4 days after giving birth thought their stay was too short. [52a]

The ministerial review of obstetric, neonatal and gynaecological services in Western Australia in 1989 found that the average LOS in hospital after giving

birth was 7.5 days, and that most women were satisfied with their LOS. Although public patients had a significantly shorter postnatal LOS than private patients, they were more likely to feel that their LOS was too long.[46] Reflecting the trend towards shorter postnatal LOS, the more recent review of maternity services in Western Australia in 1995 found the average LOS in hospital after giving birth was 5 days. The majority of women who stayed up to 14 days were satisfied with their LOS, including those women who stayed only 1 day. Consistent with the findings of the earlier review, public patients had a shorter stay than private patients and were more likely to feel that their stay was too long.[47]

In the study undertaken by the Illawarra Area Health Service in 1991, the majority (56%) of women stayed in hospital between three and five days and another 29% stayed between six and eight days after giving birth. Overall, 81% of respondents reported being happy with their LOS, 9% felt that their stay was too long and 10% felt their stay was too short.[48]

The only survey conducted with NSA women is unpublished and incomplete in its reporting.[51] The women who completed this survey stayed in hospital between one day and more than 10 days after a NVD and the majority felt their LOS was suitable. The reasons women gave for staying in hospital for as long as they did included: needing a rest, to feel more confident, problems breast feeding, to learn how to look after the baby and because the baby was sick.

Some information about why some women prefer a longer or shorter postnatal stay in hospital can be obtained by examining research exploring why women choose early discharge with domiciliary support or hospital stay. A survey of 153 mothers who chose to stay in hospital and 135 mothers who chose early discharge found that women who chose to stay in hospital reported rest and recuperation, and medical supervision of self and baby as the most common reasons for their choice. Other reasons for wanting to stay in hospital, reported by more than 50% of respondents, were to obtain information on feeding, information on baby care and time to focus on the baby.[53] For women who chose early discharge, the most common reasons for their choice were to establish a routine, and to rest, both reported by more than 50% of respondents.[54]

In summary, there is great variation in the postnatal LOS experienced by women in Australia. Furthermore, the levels of satisfaction reported in these studies suggest that the vast majority of women are going home at the appropriate time. Despite the trend towards reduced LOS, there is little evidence that consumers want a shorter stay in hospital. These studies indicate that there is much variation in the LOS preferences of women and suggest the need for hospitals to adopt a flexible approach to LOS to accommodate women's needs. However, it is unknown whether these findings are applicable to women in the NSAHS and what impact Castlecrag hospital as a postnatal care facility may have on women's LOS.

1.3.4 Satisfaction

Women's expectation of and subsequent experience with maternity care is an important outcome. It is essential that the future type of maternity care in Australia is guided by those aspects of care that women find most satisfying. To reiterate what was noted earlier, there is much difficulty defining and measuring satisfaction with childbirth in a meaningful way and many different approaches have been used. Several studies were identified that attempted to examine various aspects of women's satisfaction with maternity care.

The recent consumer survey undertaken in 1989 as part of the Review of Birthing Services in Victoria is an extensive exploration of women's satisfaction with Australia's current maternity system. Both general and specific questions about various aspects of care were included. Of the 790 women who completed the survey, 86% reported their antenatal care as good, 13% reported their antenatal care as good in some ways and poor in others, and less than 1% reported it as bad. Overall, women attending private obstetricians were significantly more satisfied than women attending public hospital clinics. Women attending public antenatal clinics were particularly dissatisfied with seeing a different doctor or midwife at each visit and waiting a long time.[55] These findings are similar to those obtained in the Western Australian consumer surveys in 1989 and 1995[46,47] and the Victorian consumer survey conducted in 1993.[17b]

These findings are reinforced by a more recent study undertaken by Zadoroznyj in 1996, in South Australia, in which women attending public hospitals were found to be particularly dissatisfied with having to wait a long time at clinics and not being treated as an individual. Women attending a midwives clinic in a public hospital were more likely to report greater satisfaction with the time nursing staff spent with them, and with the continuity of care they received than women attending a standard public hospital antenatal clinic.[56]

Two thirds of women participating in the Victorian 1989 consumer survey reported that their labour and delivery were managed as they liked,[57] which is similar to the rate reported in the 1995 consumer survey in Western Australia.[47] Dissatisfaction with care was found to be associated with not having involvement in decision making, receiving insufficient information, higher rates of obstetric intervention, and the perception that their caregivers were unhelpful.[55] These findings are consistent with previous studies which found information,[39,58] feeling in control,[40,58] adequate communication with caretakers,[40,42] fewer interventions[59] and receipt of preferred clinical procedures[42,59] to be associated with women feeling more satisfied with childbirth.

With regard to postnatal care, the 1995 consumer survey in Western Australia found that just over a third of mothers surveyed reported their postnatal care to have been better than expected and half found their care to be as they expected. More than half the positive comments about postnatal care related to

the attitude of the staff, while the most common negative comments also related to staff attitude and advice about feeding.[47]

Another method that has been used to assess satisfaction is to ask women where they would like to have their next baby. This approach was used in a study by Cunningham[49], which found 83% of mothers who had previously given birth in a labour ward wanted to have their next baby there, while the other 17% would prefer to have their next child at a birth centre or at home. Only 3% of mothers who gave birth in a birth centre or at home reported a preference to have their next baby in a hospital. Although women were given the opportunity to explain their answer, these data were not reported. It is unlikely that the current number of birth centres could accommodate the increased preference for birth centre births suggested by this study. The 1995 consumer survey conducted in Western Australia also found the majority of women reported they would choose the same hospital for their next delivery.[47]

These studies suggest that overall, women are satisfied with the maternity care they receive. However, the area where most dissatisfaction is expressed relates to labour and delivery. This suggests that new approaches to labour and delivery need to be explored in an attempt to bring maternity care in line with women's needs. This information provides useful direction to policy makers and health administrators about those areas of maternity services that need the most urgent attention.

1.4 AIMS OF THE CURRENT STUDY

There is no doubt that the provision of maternity care services in Australia has undergone some change recently and will continue to do so. There are now more birth options available than ever before, more highly trained obstetricians and midwives, improved medical technologies for monitoring complications, shorter postnatal stays in hospital, and higher expectations from consumers overall regarding the provision of obstetric services and their role in the decision making about labour and birth.

This is occurring concurrently with changes within the NSAHS itself. At present there are seven obstetric units in the NSA and another private hospital with a maternity unit is currently being established on the same site as RNS. This increase in maternity units is occurring at a time when the population is getting older and women in the NSA are having fewer babies. Furthermore, the review of obstetric services in NSW identified that women local to Ryde, Manly and MV hospitals tended to bypass their local hospital in favour of another, and that 22% of NSA women gave birth in a hospital in another AHS.[9] These shifts in the patterns of maternity service use in the NSA have resulted in increased competition between hospitals within the NSA as they attempt to attract as many women as possible to their maternity facility. If the NSAHS is to survive the current trends and prosper, it is essential that the views and experiences of local women are considered.

Whilst previous consumer surveys, some of which have included two or three hospitals from the NSA, have yielded valuable information, a rigorous and comprehensive Area-wide study of the views of local women towards the Area's obstetric hospitals has never been conducted. Therefore, the current evaluation was undertaken in 1995 to obtain useful information, based on the experiences of the service users, to guide the NSA in the modification of its existing maternity services, and planning of future maternity services, to ensure they better meet the changing needs of women and their families.

The specific aims of this study are:

1. to investigate women's reasons for choosing a particular obstetric hospital for the birth of their first child, including whether they by-passed their local obstetric hospital and their reasons for doing so;

2. to investigate factors affecting postnatal LOS and women's satisfaction with their LOS;

3. to investigate women's satisfaction with their choice of obstetric hospital.

CHAPTER 2: METHODOLOGY

2.1 QUESTIONNAIRE DEVELOPMENT

A comprehensive questionnaire was developed to investigate women's

(i) reasons for choosing a particular obstetric hospital,

(ii) length of stay in hospital after giving birth, and

(iii) satisfaction with their choice of hospital.

The developmental phase of the questionnaire involved five main tasks:

(i) a thorough review of the relevant literature,

(ii) focus group discussions,

(iii) postnatal interviews with women,

(iv) in-depth consultation with relevant health care professionals, and

(v) pilot testing with women who had recently had a baby

Literature search

To identify relevant Australian and overseas published literature, a search of MEDLINE and CINAHL computerised CD-ROM bibliographic databases between 1987 and 1997 was undertaken. The keywords and combinations used were: *childbirth, delivery, obstetric hospital, obstetric care, maternity services, maternity care, choice behavior* and *childbirth, length of stay* and *childbirth, patient satisfaction* and *length of stay* and, *consumer satisfaction* and *maternity services.* The search was restricted to articles printed in English.

Attempts were also made to locate any other relevant reports and literature. Letters were sent to key organisations including Consumers' Health Forum, Association for Improvement in Maternity Services-Australia, Maternity Alliance and the Centre for the Study of Mother's and Children's Health. These groups were asked to provide information on any relevant research known to them. Reports local to the NSAHS were also identified through discussion with an obstetrician. A search of the Sydney University database of library holdings was also conducted to identify any other relevant published and unpublished reports. Reference lists of relevant papers and reports were also reviewed in an attempt to identify any other literature.

Focus groups

Two in-depth group discussions were conducted with women and their partners attending antenatal classes at RNS and the SAN. Both focus groups had six participants each. Three women and their respective partners participated in the RNS focus group while 4 women and 2 partners participated in the focus group held at the SAN. All women who participated were aged between 25 and 34 years, privately insured and expecting their first baby.

The focus groups were held at the hospital immediately after the antenatal class had finished and primarily explored how and why the participants chose that hospital for the birth of their first child. At the start of each discussion group, each woman completed a short sociodemographic questionnaire.

The following three questions were then put to both groups to prompt discussion:

- Thinking back to when you were deciding where you would have your baby, what sorts of things were you looking for in a hospital? What actually determined your choice of hospital?

- What sorts of things stopped you from going to a different hospital?

- Were there any limitations or restrictions on your choice of hospital? What were they?

Both focus group discussions lasted for approximately 40 minutes each. They were audio-taped and later transcribed.

Interviews

Informal telephone and face-to-face interviews were conducted with 7 individual women postnatally in order to explore issues regarding their LOS in hospital, satisfaction with their hospital choice and their likes and dislikes about that hospital. Five of the women were aged between 25 and 34 years and 2 were aged between 35 and 39 years. All women were privately insured and had given birth to their first child in the last year.

Consultation with health care professionals

Several discussions were held with an obstetrician and a midwife separately to ensure the inclusion of the relevant clinical issues and to confirm that the correct medical terminology was used in the questionnaire.

Pilot testing

The questionnaire was pilot tested on 24 women postnatally and refined before data collection was undertaken. Most (n=17) women were aged between 25 and 34 years, 2 were aged between 20 and 24 years and 5 were aged between 35 and 39 years. Nine women were booked into hospital as public patients and 15 were private patients. All women had given birth to their first child in the last year.

Included in the pilot testing were 11 women attending a 'new mothers' group at Dee Why ECHC. Pilot testing in this setting also enabled 'new mothers' groups to be trialed as a means of questionnaire distribution.

2.2 DESCRIPTION OF QUESTIONNAIRE

The self-administered questionnaire took approximately 15 minutes to complete and included questions on:

- reasons for choosing a particular obstetric hospital
- reasons for not choosing the local hospital
- length of time spent in hospital after giving birth
- transferring to another hospital after giving birth
- satisfaction with hospital choice
- delivery type and location
- postnatal complications
- demographics (age, education, NESB, patient status)

Due to the process undertaken in developing the questionnaire, most questions were self-coded, although open-ended questions were provided for women to make additional comments. No identifying information was collected; the questionnaires were marked with a unique participant code number. A copy of the questionnaire can be found in Appendix 1.

2.3 SELECTION CRITERIA

To be eligible to participate in the study, women needed to fulfil all the following criteria:

- primiparous, that is, no previous livebirth or stillbirth before the birth under consideration. It is important that women's responses were not influenced by a previous birth experience of their own.

- resident of the NSA at the time of giving birth. Women living in the NSA reside in the catchment area for NSAHS obstetric hospitals.

- gave birth no more than six months ago. As women were asked to recall their experiences both at the beginning of pregnancy and after birth, it was important to minimise the amount of time between these events and their recruitment to the study to ensure as accurate recall as possible.

- proficiency in English because funds were not available to translate the questionnaire into other languages.

2.4 SAMPLING

ECHCs were chosen as the site for recruiting women to the study. This enabled women to be accessed postnatally in an environment independent of the hospital. Furthermore, given that the majority of primiparous NSA women attended an ECHC at least once, a representative sample of public and private obstetric patients could be surveyed, including those who delivered in another AHS.

A sample of 300 women were to be recruited to the study, representing approximately 10% of primiparous births in the NSAHS in one year (D. Saunders, personal communication). After considering the number of times primiparous women attend ECHCs in the first six months after giving birth, the geographical spread of the ECHCs across the NSA and the allocated time for data collection, it was decided to recruit 30 women from 10 ECHCs to obtain a total of 300 women and a self weighting sample.

The 10 ECHCs were selected using a strategy known as sampling with probability proportional to size. ECHCs were sampled proportional to the number of new registrations in the previous year. Using this procedure, each new mother had approximately equal chance of being included in the sample. If ECHCs had been randomly sampled, new mothers attending the smaller ECHCs would have had a greater chance of being included than new mothers attending the largest ECHCs.

The number of new registrations for January-November 1994 for each of the 39 NSA ECHCs was obtained from the NSAHS Health Services Branch. ECHCs with fewer than 200 new registrations were excluded from the selection procedure as the target number of women to be recruited from each clinic would not be possible in the available time. Thus, the ECHCs excluded at this point were Newport, Terry Hills, Hunters Hill, Wiseman's Ferry, Maroota and Scotland Island. From the remaining 33 clinics eligible for selection, the following 10 ECHCs were randomly selected as points of questionnaire distribution: Harbord, Dee Why, Collaroy, Willoughby, Chatswood, Lindfield, Galston, St Ives, Carlingford and Hornsby. These ECHCs were well placed in terms of both proximity to the obstetric hospitals and spread across the entire NSA. A map showing the location of the 10 ECHCs in relation to the obstetric hospitals and NSA is shown in Appendix 2.

2.5 RECRUITMENT

Each of the seven hospitals was informed of the study through its administrative head and each of the four NSA Family and Child Health directors was approached to obtain permission to conduct the study through the ECHCs. Ethics approval was also obtained from the University of Sydney Human Ethics Committee, RNS Medical Research Ethics Committee and HKH Ethics Committee.

30 women were to be recruited from each of the 10 selected ECHCs. However, due to time constraints, recruitment from Galston ECHC was terminated at 27 women, resulting in a total of 297 women surveyed. Such a small deviation from the sampling strategy did not warrant weighting of the sample in the analysis.

ECHCs are staffed by trained Early Childhood Nurses who offer routine baby health checks and advice to mothers through drop-in and appointment clinics. ECHCs in the NSA also offer mothers living in the Area 'new mothers' groups. These groups target women who have recently had their first child, but can also include mothers who have recently moved into the Area and mothers who have had a lengthy break between births. These informal groups provide women with baby care information and a forum for meeting other mothers with babies similar in age to their own.

From March to November 1995, women were recruited to the study through the ECHC drop-in and appointment clinics, and the 'new mothers' groups. During drop-in and appointment clinic times, women were approached in the waiting room of the ECHC and asked if they would be willing to participate in a research project looking at women's experiences with, and opinions of, maternity hospitals. Each woman who agreed to participate was screened to ensure that she fulfilled the selection criteria.

Those women meeting the criteria were given the questionnaire to complete while waiting to see the Early Childhood Nurse. If a woman was unable to complete the questionnaire before seeing the nurse, she was given the choice of either finishing it after her consultation or completing it at home and posting it in a stamped addressed envelope provided.

When recruiting from 'new mothers' groups, at the end of the group session, the group as a whole was informed of the purpose of the study. Each woman was then approached individually and asked to fill in a questionnaire. Those women who agreed to participate completed the questionnaire before leaving.

This face-to-face method of recruiting women to the study was chosen for the following reasons:

- disruptions to ECHC routines and staff were minimal.

- questions women had about the study were able to be dealt with immediately by the researcher.

- the researcher was perceived as being independent of the obstetric hospitals, enabling women to comment openly, without fear of their responses impacting upon any future medical care they may seek from the hospitals under evaluation.

- previous experience showed that it produces high rates of compliance.

2.6 ANALYSIS

A combination of qualitative and quantitative methods were used to analyse the questionnaire responses. All questionnaires were included in the qualitative analysis of responses to open-ended questions so the richness of this information could be retained. Seven questionnaires returned by post were received after the clinic in which they had been distributed had already achieved its quota of 30. These seven additional questionnaires were excluded from quantitative analyses. Data from the 4 women who gave birth at Ryde Hospital were also excluded from quantitative analyses due to the low number. All quantitative analyses were undertaken using the SAS computer software package.

Initially, the association of the outcome variables (reason for hospital choice, whether bypassed the local hospital, whether transferred after birth, and degree of satisfaction with LOS) with the demographic variables (age, education level, NESB/ESB and patient status) and obstetric hospital were examined using chi-square and Kruskal-Wallis analyses.

Reasons for hospital choice with more than one significant predictor ($P<0.05$) were further analysed using backward logistic regression analyses that considered the following potential confounders: planned caesarean, twins, PIH and diabetes. To examine and compare how important the various reasons were in the selection of each hospital, a mean rating was calculated for each

reason as follows. Response categories 3 (‘not at all important’) and 4 (‘not applicable’) were combined to form one category (‘not important’). Then response category scores were assigned as: 1=‘very important’, 2=‘somewhat important’, 3=‘not important’. For each reason, the scores of the women who attended each hospital were summed and divided by the number of women who attended that hospital to obtain an overall mean rating between 1 and 3. The closer this was to 1, the more important the reason was to the selection of the hospital.

Analysis of variance and t-tests were used to explore differences in LOS by demographic variables, obstetric hospital, type of delivery (vaginal, vaginal with forceps/vacuum extraction, planned caesarean section, emergency caesarean section), birth location (labour ward, birth centre, operating theatre) and complications (pregnancy induced hypertension (PIH), diabetes, premature labour, episiotomy/tear, bleeding, infection, multiple pregnancy, feeding difficulties, sick baby). Significant associations ($P<0.05$) were further examined using backward multiple regression analyses. Differences between individual hospitals could not be explored in the same model as patient status (public/private) because private hospitals only have private patients. Separate models were therefore developed for public hospitals and private hospitals, and another model was used to explore the effect of patient status.

Significant associations ($P<0.05$) between the demographic variables and whether the woman transferred to another hospital after birth were also further examined using backward logistic regression analyses.

Content analysis was conducted on open-ended questions exploring reasons for transferring hospitals, hospital likes and dislikes, and reasons for choosing or not choosing the same hospital for a subsequent birth. The identification of themes was guided by those reported in the relevant literature.

CHAPTER 3: RESULTS

3.1 RESPONSE RATE

340 women were approached to take part in the study. Of these, 11 (3%) refused to participate, 8 of whom were in eligible because they were unable to speak or understand sufficient English. Of the 329 (97%) women who filled in a questionnaire, 17 (5%) were subsequently excluded from the sample for the following reasons: not primiparous (n=6), not a resident of the NSA at the time of giving birth (n=2), incomplete questionnaire due to insufficient understanding of English (n=1), homebirth (n=1) and return of the questionnaire after the clinic quota was reached (n=7).

Overall, 315 women were eligible to be included in the sample. Of these, 3 (1%) declined to participate and 15 (5%) did not return their questionnaire, leaving a sample of 297 women. An overall response rate of 94% was achieved.

The amount of time that elapsed between women giving birth and completing the questionnaire was evenly distributed between less than 6 weeks (34%), 6-12 weeks (31%) and 13-26 weeks (35%).

3.2 DESCRIPTION OF SAMPLE

A summary of sociodemographic and obstetric characteristics of the survey sample compared to population data for births in the NSA is presented in Table 2. The most common age group of women sampled was 30-34 years (38%). Ninety eight percent were either married or in a de-facto relationship. More than half (58%) had completed a qualification beyond secondary school. The occupations of the sample were coded according to the Australian Standard Classification of Occupations with clerical being the most common (27%) occupation reported. Eighteen percent spoke a language other than English at home, predominantly Chinese. Two thirds (64%) were booked into hospital as a private patient. Of the 67% of women who had private health insurance at the time their baby was conceived, 26% specifically took out private cover because they were having a baby. Half (53%) had a NVD and 75% gave birth in a hospital labour ward.

Chi square analyses indicated that the survey sample differed significantly in age (χ^2=36.75, df=5, P=<0.0001), marital status (χ^2=6.66, df=2, P=0.036) and delivery type (χ^2=40.69, df=3, P=0.<0.0001) compared to the 1995 Midwives Data Collection[22] for births in the NSA. The survey sample included significantly more women aged 25-29 years, emergency caesarean and forceps/vacuum extraction deliveries and significantly fewer women aged 35-39 years, women who never married and NVD and planned caesarean deliveries than population data for births in the NSA. These are the only variables for which comparison data are available.

TABLE 2: Sociodemographic and obstetric characteristics of participants compared to 1995 Midwives Data Collection for NSA.

Characteristics	Survey (n=297)		NSA (n=8,690)	
	n	%	n	%
Age				
less than 20	3	1	112	1
20-24	42	14	676	8
25-29	102	34	2,292	26
30-34	113	38	3,599	41
35-39	31	10	1,713	20
40 and over	6	2	297	3
Education				
Primary school	1	0		
School Certificate	68	23		
Higher School Certificate	56	19	**	**
Certificate/diploma	76	25		
University	94	32		
Marital status				
Married/de facto	291	98	8,339	96
Never married	3	1	305	3
Divorced/separated	3	1	45	<1
Occupation				
Managers and administrators	45	15		
Professional	66	22		
Para-professional	33	11		
Tradespersons	5	2	**	**
Clerical	80	27		
Sales and personal service	46	16		
Labourer	3	1		
Not in paid workforce	19	6		

TABLE 2 continued

Characteristics	Survey (n=297)		NSA (n=8,690)	
	n	%	n	%
Language spoken at home				
English	243	82	**	**
Language other than English	54	18		
Patient status at time of delivery				
Private	190	64	**	**
Public	107	36		
Patient status at time of baby's conception				
Private	201	68	**	**
Public	95	32		
Delivery type				
Emergency caesarean	42	14	761	9
Planned caesarean	21	7	1,055	12
Forceps/vacuum extraction	77	26	1,327	15
NVD	157	53	5,472	63
Delivery location				
Operating theatre	62	21		
Labour ward	223	75	**	**
Birth centre	12	4		
Complications				
PIH	49	17		
Diabetes	11	4		
Premature birth	11	4		
Episiotomy/tear	182	61		
Post-partum hemorrhage	34	11	**	**
Infection	19	6		
Multiple birth	4	1		
Feeding difficulties	101	34		
Sick baby	15	5		

** Comparison data are not available

3.3 CHOICE OF HOSPITAL

Table 3 shows the proportion of women who gave birth at each hospital and the proportion of each hospital's total births in 1995 included in the sample. Ninety three percent of women surveyed gave birth in a NSA obstetric hospital and 7% travelled to a hospital in another AHS. Fifty eight percent of women had their baby in a public hospital; that is HKH, Manly, MV, RNS, Ryde, Hawkesbury, KGV, RHW or Westmead. The most frequently attended hospitals were the SAN (n=70), RNS (n=57) and the Mater (n=46), while Ryde was the least attended hospital (n=4). Data for women who attended Ryde Hospital are excluded from statistical analysis due to the small number of women who gave birth there.

TABLE 3: Distribution of births by hospital

Hospital	n	% of sample	% of births in 1995 [a]
HKH	36	12%	3.4%
Manly	39	13%	4.1%
Mater	46	16%	2.7%
MV	23	8%	3.0%
RNS	57	19%	2.5%
Ryde	4	1%	0.5%
SAN	70	24%	3.1%
Other [b]	22	7%	—
TOTAL	297	100%	

[a] Source: Taylor and Pym (1996).

[b] 'other refers to hospitals located outside of the NSA and includes Hawkesbury, King George V, Royal Hospital for Women (Paddington), St Margaret's, The Hills Private and Westmead.

Age

Table 4 shows the distribution of maternal age by hospital. There is a significant difference in the maternal age among hospitals (Kruskal-Wallis χ^2=19.55, df=6, P=0.003) with the youngest women giving birth at MV, HKH and Manly hospitals. Women giving birth at RNS, the SAN and the Mater were more likely to be among the older age groups.

TABLE 4: Frequency distribution of maternal age (years) by hospital

Hospital	**<20**	**20-24**	**25-29**	**30-34**	**35-39**	**40+**	**Total**
	n	**n**	**n**	**n**	**n**	**n**	**n**
HKH	2	9	12	9	2	2	36 (12%)
Manly	0	8	16	13	2	0	39 (13%)
Mater	0	3	11	25	6	1	46 (16%)
MV	0	4	12	6	1	0	22 (8%)
RNS	0	9	16	24	7	1	57 (19%)
Ryde	1	2	1	0	0	0	4 (1%)
SAN	0	3	26	32	7	2	70 (24%)
Other	0	4	8	4	6	0	21 (7%)
TOTAL	3 (1%)	42 (14%)	102 (34%)	113 38%)	31 (10%)	6 (2%)	295 (100%)

Education level

Table 5 shows the highest level of education completed by women who gave birth at each hospital. There is no significant difference in the education level of women among the seven hospitals (Kruskal-Wallis χ^2=12.08, df=6, P=0.06). The educational profile of the sample suggests that overall, the women are generally well educated with more than half (58%) having completed a qualification beyond secondary school.

TABLE 5: Frequency distribution of highest level of maternal education by hospital

Hospital	Primary	SC	HSC	Cert/Dip	Uni	Total	
	n	n	n	n	n	n	
HKH	1	8	7	11	9	36	(12%)
Manly	*	10	6	10	13	39	(13%)
Mater	*	9	12	7	18	46	(16%)
MV	*	11	3	7	1	22	(8%)
RNS	*	13	9	16	19	57	(19%)
Ryde	*	1	1	1	1	4	(1%)
SAN	*	12	15	15	15	70	(24%)
Other	*	4	4	9	5	21	(7%)
TOTAL	1	68	56	76	94	295	
	(0.3%)	(23%)	(19%)	(26%)	(32%)	(100%)	

Primary = primary school, SC = school certificate, HSC = higher school certificate, Cert/Dip = certificate/diploma, Uni = university or higher degree.

Language background

Table 6 shows the proportion of NESB women giving birth at each hospital. There is a significant difference in the proportion of NESB mothers across the hospitals (χ^2=14.40, df=6, P=0.03). Hospitals outside of the NSA were found to have the highest proportion of NESB women (41%), followed by the Mater (24%) and RNS (21%). Almost all women attending the two peninsula hospitals, MV (96%) and Manly (90%), were of an English speaking background.

TABLE 6: Maternal language background by hospital

Hospital	NESB		Total	
	n		n	
HKH	6	(17%)	36	(12%)
Manly	4	(10%)	39	(13%)
Mater	11	(24%)	46	(16%)
MV	1	(4%)	23	(8%)
RNS	12	(21%)	57	(19%)
Ryde	1	(25%)	4	(1%)
SAN	10	(14%)	70	(24%)
Other	9	(41%)	22	(7%)
TOTAL	54	(18%)	297	(100%)

Insurance status

Table 7 shows the proportion of private patients attending each hospital. Even when the two private NSA hospitals (SAN and Mater) were excluded from the analysis, the proportion of private patients differed significantly among the remaining hospitals (χ^2=14.55, df=4, P=0.009). HKH (81%) and Manly (67%) hospitals had a higher proportion of public patients than private patients while MV (52%) and RNS (49%) had almost equal number of public and private patients. Women who had their baby at a non-NSA hospital were slightly more likely to be private patients (59%).

TABLE 7: Distribution of private patients by hospital

Hospital	Private		Total	
	n		n	
HKH	7	(19%)	36	(12%)
Manly	13	(33%)	39	(13%)
Mater	46	(100%)	46	(16%)
MV	11	(48%)	23	(8%)
RNS	29	(51%)	57	(19%)
Ryde	1	(25%)	4	(1%)
SAN	70	(100%)	70	(24%)
Other	13	(59%)	22	(7%)
TOTAL	190	(64%)	297	(100%)

3.3.1 Reasons for selection of hospital

Women were asked to indicate on a 4-point Likert scale (1='very important', 2='somewhat important', 3='not at all important', 4='not applicable') how important each of 15 reasons was when deciding at which hospital to have their baby. Table 8 shows the proportion of women who rated the various reasons as 'very important' when choosing a hospital, in decreasing order.

TABLE 8: Proportion of women rating each reason as 'very important' in selection of hospital

Reason	n	%
Reputation	236	80%
Quality of nursing care	212	71%
Expertise of clinical staff	195	66%
Convenient location	169	57%
Obstetrician goes there	162	55%
Recommendation of friend or family	145	49%
Access to emergency facilities	137	46%
Private hospital	99	33%
Education programs offered	98	33%
Range of rooms available	94	32%
Length of stay in hospital after birth	92	31%
Doctor's advice	90	30%
Range of birth options	87	29%
Public hospital	44	15%
Other	16	5%
Religion	7	2%

Overall, reputation of the hospital was the reason most frequently rated as ‘very important’ in choice of hospital, reported by 80% of women. The quality of nursing care (72*%),* expertise of clinical staff (70%), convenient location (57%) and that their obstetrician goes there (55%) were next in importance, more than half of respondents rating these reasons as ‘very important’ factors in their decision making. Although both the Mater and SAN are church-affiliated hospitals, only 2% of women rated religion as ‘very important’ when deciding at which hospital to have their baby.

The relationship between the importance of each reason in the choice of hospital and each of the demographic variables was examined by separate chi-square analyses. For these analyses, responses to the importance of each reason were dichotomised into ‘very important’ or not (‘somewhat important’, ‘not at all important’ and ‘not applicable’). Language background was not significantly associated with the importance of any reasons in hospital choice. No significant association was identified for any of the following reasons for hospital choice: access to emergency facilities, education programs offered, doctor’s advice and religion.

As shown in Table 9, the importance of the following reasons in choice of hospital were found to be significantly associated with patient status - reputation, quality of nursing care, expertise of clinical staff, convenient location, obstetrician goes there, recommendation of friend or family, range of rooms available, range of birth options, public hospital and private hospital.

A higher proportion of private patients than public patients rated reputation, quality of nursing care, expertise of clinical staff, obstetrician goes there, recommendation of friend or family, range of rooms available and private hospital as very important in their choice of hospital. However, a higher proportion of public patients than private patients rated convenient location, range of birth options available and public hospital as very important in their hospital choice.

TABLE 9: Reasons for choice which were significantly associated with patient status (private/public)

Reasons for hospital choice	χ^2	df	P
Reputation	21.50	1	<0.001
Quality of nursing care	17.32	1	<0.001
Expertise of clinical staff	11.91	1	<0.001
Convenient location	11.46	1	<0.001
Obstetrician goes there	86.56	1	<0.001
Recommendation of friend or family	5.84	1	0.02
Range of rooms available	20.68	1	<0.001
Range of birth options	6.74	1	0.009
Public hospital	38.29	1	<0.001
Private hospital	84.21	1	<0.001

The importance of LOS in hospital was found to be significantly associated with level of education (χ^2=13.72, df=3, P=0.05) with a higher proportion of more highly educated women rating it as very important in choice of hospital than less educated women.

The importance of the obstetrician attending the hospital was found to be significantly associated with age (χ^2=9.66, df=3, P=0.02). A higher proportion of older women rated this reason as 'very important' to their choice of hospital than younger women.

As 'obstetrician goes there' was associated with more than one significant predictor, logistic regression analysis was conducted to determine the impact of the demographic variables and variables which were known prior to the birth and may impact upon the choice of hospital (type of delivery, twins, PIH, diabetes) on rating the reason as 'very important' in choice of hospital. Patient status was identified as the only significant predictor of rating 'obstetrician goes there' as very important in choice of hospital as summarised in Table 10. However, the wide confidence limits suggest this finding should be interpreted with caution.

TABLE 10: Significant predictor of rating 'obstetrician goes there' as 'very important' in choice of hospital in multivariable analysis

Variable	OR	95% CI	P
patient status	23.05	11.90-44.64	<0.001

To assess how important the various reasons were in the selection of each hospital, the mean rating for each reason was examined. These mean ratings range between 1 (very important) and 3 (not at all important), as defined in section 2.6. Table 11 shows the overall mean rating for each reason and each hospital, with the most important reason(s) for each hospital highlighted in bold.

TABLE 11: Reasons for choice summarised with mean rating by hospital

	HKH	Manly	Mater	MV	RNS	Ryde	SAN	other
location	**1.28**	**1.32**	1.72	**1.30**	1.39	**1.25**	1.63	1.85
reputation	1.47	1.42	**1.04**	**1.30**	**1.30**	2.25	**1.03**	1.60
recommendation	1.86	1.87	1.52	2.04	2.12	1.50	1.40	1.75
dr's advice	2.25	2.24	2.17	2.17	2.12	2.25	2.09	2.26
obstetrician	2.64	1.97	1.46	1.48	1.88	2.50	1.36	2.04
emergency	1.81	1.68	1.89	1.74	1.39	2.00	1.86	1.70
expert staff	1.44	1.53	1.30	1.78	1.44	2.75	1.31	1.49
nursing care	1.36	1.45	1.15	1.48	1.56	2.75	1.13	1.36
edn programs	1.83	2.03	2.11	1.87	2.14	2.75	1.77	1.87
birth options	1.89	1.79	2.04	2.17	2.16	1.75	2.17	2.06
LOS	1.97	2.03	1.89	2.13	2.23	2.50	1.99	1.90
rooms	2.22	2.29	1.70	2.04	2.37	2.25	1.60	2.00
private hospital	2.89	2.92	1.39	2.83	2.75	3.00	1.30	2.34
public hospital	1.92	2.21	2.91	2.43	2.39	2.50	2.99	2.58
religion	3.00	2.87	2.85	3.00	2.93	3.00	2.84	3.00
other	2.94	2.97	2.65	3.00	2.84	2.00	3.00	2.95

Overall, convenient location was more important than any other reason for women attending HKH (mean rating=1.28), Manly (mean rating=1.32) and Ryde (mean rating =1.25). Reputation was more important overall for women attending the Mater (mean rating=1.04), RNS (mean rating=1.0) and SAN (mean rating=1.03). Both convenient location (mean rating=1.0) and reputation (mean rating=1.0) were of greatest importance to women attending MV.

There was a significant difference in the importance of convenient location across hospitals (Kruskal-Wallis χ^2=30.49, df=6, P<0.0001). Convenient location was more important to women who went to HKH, Manly, MV or RNS than it was to women who attended the Mater or SAN when deciding at which hospital to have their baby. Not surprisingly, It was least important to women who chose to attend a hospital in another AHS.

The importance of the reputation of the hospital differed significantly across hospitals (Kruskal-Wallis χ^2=37.57, df=6, P<0.0001). Hospital reputation was of greater importance to women who had their baby at the SAN or Mater than it was to women who gave birth at any of the other hospitals.

There was a significant difference in the importance of friends or family recommendation across hospitals (Kruskal-Wallis χ^2=30.33, df=6, P<0.0001). Recommendation of friends or family was more important to women attending the SAN or Mater than it was to women attending the other hospitals. It was less important to women who chose to go to MV or RNS.

The importance of the obstetrician's hospital affiliation differed significantly across hospitals (Kruskal-Wallis χ^2=54.16, df=6, P<0.0001). The hospital the obstetrician delivered at was of more importance to women who attended the SAN, Mater or MV than it was to women who chose to go to any of the other hospitals. It was of particularly little importance in the decision making of women who had their baby at HKH.

There was a significant difference in the importance of access to emergency facilities across hospitals (Kruskal-Wallis χ^2=17.42, df=6, P=0.008). Access to emergency facilities was clearly more important to women who went to RNS than to women who went to any of the other hospitals.

There was a significant difference in the importance of nursing care across hospitals (Kruskal-Wallis χ^2=30.13, df=6, P<0.0001). Quality of care from the nursing staff was a factor of more importance to women who went the SAN or Mater than it was to women who had their baby at any of the other hospitals.

The importance of the range of rooms available differed significantly across hospitals (Kruskal-Wallis χ^2=44.2, df=6, P<0.0001). The range of rooms available in a hospital was clearly more important to women who went to the SAN or Mater than it was to women who went to any of the other hospitals.

Not surprisingly, going to a private hospital was of greater importance to women who went to one of the two private NSA hospitals (SAN and Mater) than

it was to women who went to any of the other hospitals (Kruskal-Wallis χ^2=182.09, df=6, P<0.0001).

Going to a public hospital was considered more important in the decision making of women who went to HKH or Manly than it was to women who went to any of the other hospitals (Kruskal-Wallis χ^2=77.46, df=6, P<0.0001).

The importance of the following reasons did not significantly differ between hospitals: doctor's advice (Kruskal-Wallis χ^2=1.25, df=6, P=0.97); expertise of clinical staff (Kruskal-Wallis χ^2=10.15, df=6, P=0.12); education programs offered (Kruskal-Wallis χ^2=10.22, df=6, P=0.11); range of birth options (Kruskal-Wallis χ^2=8.82, df=6, P=0.18); LOS in hospital after birth (Kruskal-Wallis χ^2=5.75, df=6, P=0.45) and religion (Kruskal-Wallis χ^2=10.8, df=6, P=0.09).

3.3.1.1 Most important reason for selection of hospital

Women were asked to identify the reason that was the most important when deciding at which hospital to have their baby. Table 12 shows the frequency with which the various reasons were selected as the most important.

Reputation of the hospital was reported by 32% of women as the most important reason for their choice of hospital. Other reasons selected by more than 10% of respondents were the convenient location of the hospital (14%), their obstetrician delivered there (12%) and the quality of nursing care (12%).

TABLE 12: Most important reason for selection of hospital

Reason	n	%
reputation	94	32%
convenient location	40	14%
obstetrician goes there	34	12%
quality of nursing care	34	12%
expertise of clinical staff	21	7%
recommendation of friend or family	20	7%
access to emergency facilities	19	7%
range of birth options	10	3%
doctor's advice	8	3%
other	5	2%
public hospital	3	1%
education programs offered	2	1%
range of rooms available	2	1%
private hospital	1	<1%
religion	1	<1%
LOS in hospital after birth	0	0
TOTAL	294	100%

The most important reason for choice of hospital was examined in relation to each of the demographic variables. Age (χ^2=14.55, df= 6, P=0.024) and patient status (χ^2=37.63, df= 3, P<0.001) were found to have a significant association with the most important reason for choice of hospital. Younger women (less than 25 years) and public patients were most likely to select a hospital because it was conveniently located, while older women and private patients were most likely to select a hospital because of its reputation, their obstetrician delivered there, and the quality of nursing care.

The reason most frequently selected as the most important in the choice of each hospital was identified and is shown in Table 13. Women attending four of the five public hospitals in the NSA most frequently selected convenient location as the most important reason for their choice of hospital. Twenty two percent of women who gave birth at HKH, 26% of women at Manly, 31% of women at MV and 75% of women at Ryde chose that hospital because it was conveniently located. However, the two most commonly given reasons for choosing the other NSA public hospital, that is RNS, were the reputation of the hospital and the chosen obstetrician delivered at the hospital, each reported by 24% of women who gave birth there. Women attending the private NSA hospitals, that is the Mater and SAN, reported the reputation of the hospital to be the most important factor in their selection of a hospital. Sixty two percent of women who gave birth at the SAN and 41% of women who went to the Mater did so because of the favourable reputation of the hospital.

TABLE 13: 'Most important' reason for choice by hospital

Hospital	Most important reason	n	%
HKH	convenient location	8	22%
Manly	convenient location	10	26%
Mater	reputation	19	41%
MV	convenient location	7	30%
RNS	reputation	13	24%
	obstetrician goes there	13	24%
Ryde	convenient location	3	75%
SAN	reputation	43	62%
other	reputation	5	23%

3.3.2 By-passing the local maternity hospital

Women were asked to identify the obstetric hospital closest to where they lived and to indicate whether they gave birth at that hospital. Those women who did not attend their local obstetric hospital were subsequently asked why they by-passed that hospital in favour of another hospital.

Overall, 40% (n=118) of mothers did not give birth at their local maternity hospital. Table 14 shows, for each hospital, the proportion of women who chose to not attend that hospital even though it was their nearest obstetric hospital.

TABLE 14: Proportion of women who by-passed their local hospital

Local hospital by-passed	n	% of local women [a]
HKH	20	42%
Manly	21	36%
Mater	4	24%
MV	13	44%
RNS	28	43%
Ryde	17	85%
SAN	10	20%
other	5	50%
TOTAL	118	40%

[a] Expressed as a percentage of those women who reported each hospital as their closest obstetric hospital

Of all hospitals, Ryde was the most overlooked; 85% of local women chose to go to another hospital. Non-NSA, MV, RNS and HKH were by-passed by about

half of the women local to them. The two private hospitals, that is the Mater and SAN, were seldom bypassed by local women in favour of another hospital.

When considering the demographic variables in relation to by-passing the local hospital, patient status was the only variable of statistical significance. Private patients (46%) were more likely than public patients (28%) to by-pass their local obstetric hospital in favour of another hospital (χ^2=9.55, df=1, P=0.002). Women who were booked into hospital as a public patient tended to go to their nearest obstetric hospital.

Table 15 shows the number of women who attended their local obstetric hospital and the hospitals subsequently chosen by those women who by-passed their local obstetric hospital. The majority of women who by-passed their local NSA obstetric hospital did so in favour of the Mater, SAN and RNS hospitals. Seventy two percent (n=33) of women who had their baby at the Mater, 43% (n=30) who had their baby at the SAN and 35% (n=20) of women who had their baby at RNS were not local to that hospital.

The Mater drew its non-local patients primarily from the area served by RNS, the SAN primarily attracted patients local to HKH, non-local patients attending RNS came from across the entire Area. Local patients bypassing Manly primarily chose to attend MV, RNS and the Mater. Ryde lost its local patients to hospitals across the whole Area except the northern peninsula (Manly and MV).

TABLE 15: Local obstetric hospital and hospital attended

	Local obstetric hospital								
Hospital attended	**HKH** **n**	**Manly** **n**	**Mater** **n**	**MV** **n**	**RNS** **n**	**Ryde** **n**	**SAN** **n**	**other** **n**	**TOTAL** **n**
HKH	**28**	0	0	0	0	4	2	2	36
Manly	0	**37**	0	1	1	0	0	0	39
Mater	1	5	**13**	4	18	1	4	0	46
MV	0	7	0	**16**	0	0	0	0	23
RNS	3	5	2	4	**37**	3	3	0	57
Ryde	0	0	0	1	0	**3**	0	0	4
SAN	14	3	0	3	4	4	**40**	2	70
other	2	1	2	0	5	5	1	**6**	22
TOTAL	48	58	17	29	65	20	50	10	297

Women were asked to select from a list of reasons why they chose to give birth at a hospital other than their closest obstetric hospital. As shown in Table 16, the most common reason for by-passing the local hospital was because the obstetrician didn't deliver there, reported by 42% of women. Other common reasons, reported by more than 25% of women were 'other', lack of private rooms, and reputation of the hospital. The two most prominent reasons stated by women in the 'other' category were their desire to go to a private hospital (n=8) and a prior preference for a particular hospital (n=8).

TABLE 16: Reasons for by-passing the local obstetric hospital

Reason	n	%
Obstetrician doesn't go there	49	42%
Other	37	31%
Lack of private rooms	33	28%
Reputation of the hospital	31	26%
Doctor preferred or recommended another hospital	23	20%
Old buildings	19	16%
Too many beds in a ward	18	15%
Standard of care from staff	16	14%
Lack of access to emergency facilities	9	8%
Lack of birthing options	7	6%
Previous experience at that hospital	6	5%
Cost	5	4%
Inconvenient for family	4	3%
No early discharge scheme	4	3%
No birth centre	3	3%
Already fully booked	2	2%
No continuity of care	2	2%
Religion	2	2%

The most common reason given for by-passing HKH was that the woman's doctor preferred or recommended another hospital (30%). Over half (57%) of the women who by-passed Manly did so because of the reputation of that hospital. More than half (57%) of the women who by-passed RNS reported the lack of private rooms as a reason for their decision. MV (62%), Ryde (53%) and SAN (70%) were bypassed primarily because women's chosen obstetrician did not deliver there. No single main reason for the Mater and non-NSA hospitals being by-passed was apparent.

3.3.3 Preferred maternity hospital

Eighty four percent (n=249) of women reported that they wanted to go to a particular hospital to have their baby. Of these, 91% (n=227) went to the hospital of their choice, while the remaining 9% (n=22) did not. The reasons for women being unable to attend their preferred hospital were grouped into the following four categories:

- obstetrician did not deliver at the hospital (obstetn)
- the hospital was already fully booked at time of booking in (booked)
- cost
- other (complicated pregnancy; moved; started follow-up at other hospital)

Table 17 shows the hospital where women had their baby, their preferred hospital and the reason for being unable to go there. Overall, the Mater was most often the hospital of choice that women were unable to attend, accounting for 77% of these responses.

The main reason women gave for being unable to give birth at their preferred hospital was that it was already booked out. Eleven of the 17 women who had wanted to go to the Mater but were unable to had found that it was already fully booked. Instead, these women went to RNS (n=6), Manly (n=3) or the SAN (n=2).

The second most common reason for women not being able to go to the hospital of their choice was because their obstetrician did not deliver there (n=6). Three women who wanted to give birth at the Mater went to a hospital outside the NSA because their obstetrician did not deliver at the Mater.

Six women unable to have their baby at the hospital of their choice travelled to a hospital in another AHS. Had these women been able to attend their preferred hospital, five would have given birth in a NSA hospital.

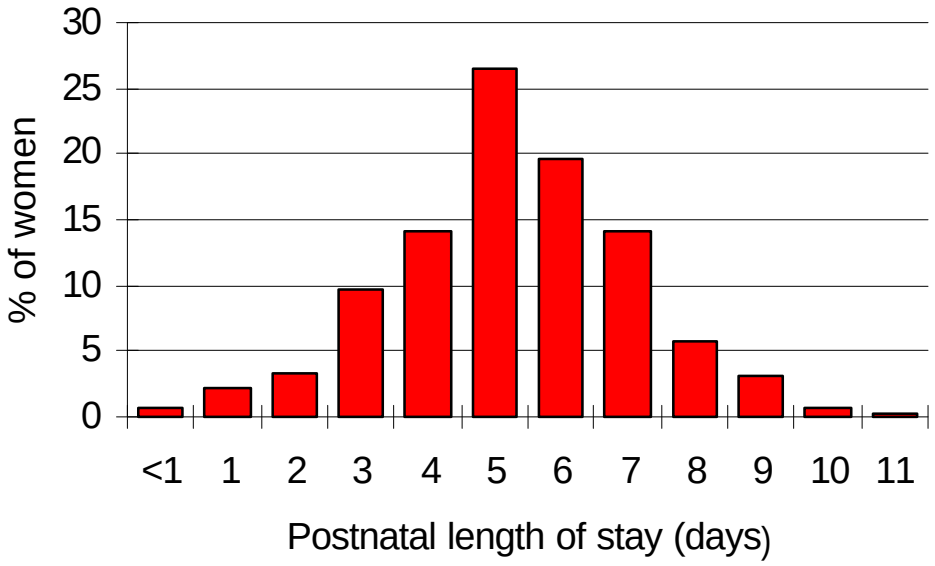
TABLE 17: Hospital attended, preferred hospital and reason for not attending, for women not giving birth at their preferred hospital

Hospital attended	Preferred hospital	Booked n	Obstetn n	Cost n	Other n	Total n
Manly	Mater	3	0	0	0	3
RNS	HKH	0	1	0	1	2
	Mater	6	0	1	0	7
	SAN	0	1	0	0	1
SAN	Mater	2	1	0	0	3
other	Mater	0	3	0	1	4
	RNS	0	0	0	1	1
	other	0	0	1	0	1
TOTAL		11	6	2	3	22

3.4 POSTNATAL LENGTH OF STAY IN HOSPITAL

The postnatal LOS in the hospital where women had their baby ranged from less than 1 day to 11 days. The mean postnatal LOS was approximately 5 days. Figure 1 shows the distribution of postnatal LOS in hospital.

FIGURE 1: Distribution of postnatal LOS in hospital



Two women (<1%) stayed in hospital for less than one day after they gave birth, 6 women (2%) stayed only one day after the birth of their baby, 13% stayed 2-3 days, the majority (74%) stayed 4-7 days and 10% stayed in hospital for more than a week.

There was a highly significant difference in the average postnatal LOS between the hospitals (F=8.39; df=6, 280; P=0.0001), as shown in Table 18. Women who gave birth at the private NSA hospitals, that is the SAN and Mater, had the longest postnatal LOS at approximately 6 days. Women who gave birth at any of the public hospitals in the NSA had a shorter LOS, RNS having the shortest at 4.4 days.

TABLE 18: Mean postnatal length of stay by hospital in descending order.

Hospital	LOS (days)	SD
SAN	6.26	1.09
Mater	5.89	1.37
other	5.19	2.23
Manly	5.05	1.72
MV	4.77	1.74
HKH	4.66	2.24
RNS	4.41	1.95

The mean postnatal LOS was examined in relation to each of the demographic variables. As shown in Table 19, the mean LOS increased with age. Women aged between 30 and 34 years stayed in hospital for an average of 5.7 days, while those younger than 25 years stayed in hospital for an average of 4.3 days after giving birth. On average, private patients stayed in hospital one day longer than public patients. Private patients stayed in hospital for an average of 5.6 days after giving birth compared with public patients who stayed for an average of 4.7 days. There was no statistically significant difference in the average LOS across level of maternal education or language background.

TABLE 19: Mean (SD) postnatal length of stay (days) by demographic variables

Characteristic	LOS (SD)	Test statistic	P
Age (years)			
<25	4.33 (1.81)	F(3,287)=6.09	0.0005
25-29	5.24 (1.71)		
30-34	5.68 (1.86)		
≥ 35	5.36 (1.69)		
Patient status			
private	5.61 (1.71)	t(289)=4.26	0.0001
public	4.68 (1.89)		
Education			
School Certificate or less	5.26 (1.96)	F(3,285)=2.17	0.09
Higher School Certificate	5.00 (1.77)		
certificate/diploma	5.04 (1.93)		
university	5.66 (1.66)		
Language spoken at home			
English	5.23 (1.83)	t (289) =1.02	0.31
other than English	5.51 (1.83)		

The mean postnatal LOS was also examined in relation to each of the birth characteristics shown in Table 20. Women who had a caesarean section stayed in hospital significantly longer than women who had a vaginal delivery. The longest LOS was for women who had an emergency caesarean section, who stayed in hospital for almost one week after having their baby. The shortest stay was for women who had a NVD who stayed in hospital for an average of 4.7 days. Women who had their baby in an operating theatre stayed in hospital significantly longer than women who gave birth in a labour ward or

birth centre. Women who gave birth in a birth centre stayed in hospital for the shortest length of time.

Table 20: Mean (SD) postnatal length of stay (days) by birth characteristics

Birth characteristics	n	LOS (SD)	Test statistic	P
Delivery type				
emergency caesar	42 (14%)	6.53 (1.83)	F(3,287)=17.8	0.0001
planned caesar	21 (7%)	6.39 (1.47)		
forceps/vacuum	77 (26%)	5.56 (1.67)		
NVD	157 (53%)	4.66 (1.69)		
Birth location				
operating theatre	62 (21%)	6.47 (2.34)	F(2,288)=19.48	0.0001
labour ward	223 (75%)	5.01 (1.69)		
birth centre	12 (4%)	4.09 (1.71)		

Postnatal LOS was examined in relation to the following complications: PIH, diabetes, premature birth, episiotomy or tear, post partum haemorrhage, infection, multiple birth, feeding difficulties and sick baby. As shown in Table 21, women who experienced PIH stayed in hospital on average one day longer than women who did not. The average LOS of women who had a premature baby was approximately one day greater than women who did not. Women who had a multiple birth stayed in hospital on average two days longer than women who gave birth to one baby. Women who experienced difficulties breast feeding stayed in hospital on average one day longer than women who did not. Women who had a sick baby stayed in hospital on average one day longer than women whose baby was well. There was no significant difference in the average LOS

between those women who did and did not experience the following complications: diabetes, episiotomy or tear, postpartum haemorrhage and infection. It should be noted that these data should be interpreted with caution due to small numbers of some complications.

TABLE 21: Mean (SD) postnatal length of stay (days) by complications

Complication	**Yes[a]**	**No[b]**	**Test statistic**	**P**
	LOS (SD)	**LOS (SD)**		
PIH	6.17 (1.77)	5.10 (1.79)	t(289)=3.76	0.0002
Diabetes	6.3 (2.06)	5.24 (1.81)	t(289)=1.8	0.07
Premature birth	6.45 (1.97)	5.23 (1.81)	t(289)=2.19	0.03
Episiotomy/tear	5.15 (1.7)	5.48 (2.0)	t(289)=1.49	0.14
Haemorrhage	4.79 (1.76)	5.34 (1.83)	t(289)=1.64	0.1
Infection	5.84 (2.19)	5.24 (1.8)	t(289)=1.39	0.17
Multiple birth	7.25 (2.22)	5.25 (1.81)	t(289)=2.18	0.03
Feeding difficulties	5.69 (1.76)	5.06 (1.83)	t(289)=2.85	0.005
Sick baby	6.20 (1.97)	5.23 (1.81)	t(289)=2.01	0.05

[a] women who reported complication
[b] women who did not report complication

Multiple regression analyses were then conducted to determine the impact of the significantly associated demographic variables (patient status and age) in combination with the birth characteristics, complications that were found to have a significant influence (PIH, premature birth, multiple birth, feeding difficulties, sick baby) and the NSA hospitals themselves on postnatal LOS. Differences between individual hospitals could not be explored in the same model as patient status (public/private) because private hospitals only have

private patients. Separate models were therefore developed for public hospitals and private hospitals, and another model was used to explore the effect of patient status.

For public hospitals, the only variables significantly associated with postnatal LOS in the multivariate model were delivery type and premature birth. After allowing for these variables there was no longer any significant effect of birth location and PIH. After adjusting for premature birth, women who had an emergency caesarean section stayed 2.0 days longer than women who had a NVD, women who had a planned caesarean stayed 1.9 days longer than those who had a NVD and women who had a vaginal delivery with forceps stayed 0.9 days longer than those who had a NVD. After allowing for delivery type, women who had a premature birth stayed 1.3 days longer than women who did not have a premature birth.

After allowing for delivery type and premature birth, there was no significant difference in mean postnatal LOS for the four public hospitals (F=2.54; df=3,144; P=0.06). The unadjusted and adjusted mean LOS for each of the public hospitals after allowing for delivery type and premature birth is summarised in Table 22.

TABLE 22: Unadjusted and adjusted mean postnatal length of stay (days) for NSA public hospitals

Hospital	Mean LOS	Adjusted mean LOS[a]
HKH	4.66	7.00
Manly	5.05	7.09
MV	4.77	7.02
RNS	4.41	6.21

[a] for a NVD, non-premature birth

For the private hospitals, the only variables significantly associated with postnatal LOS in the multivariate model were PIH and delivery type. After allowing for these variables there was no longer any significant effect of multiple birth. After adjusting for premature birth and PIH, women who had an emergency caesarean section stayed in hospital 1.4 days longer than women who had a NVD, women who had a planned caesarean stayed 1.1 days longer than those who had a NVD, and women who had a vaginal delivery with forceps stayed 0.3 days longer than those who had a NVD. After allowing for delivery type and premature birth, women with PIH stayed 0.7 days longer than women without PIH. After allowing for delivery type and PIH, women who had a premature birth stayed 1.2 days longer than women who did not have a premature birth.

After allowing for delivery type, premature birth and PIH, there was no significant difference in the mean LOS of the two private hospitals (t=-1.87, df=107, P=0.06). The unadjusted and adjusted mean LOS for both of the private hospitals after allowing for delivery type, premature birth and PIH is summarised in Table 23.

TABLE 23: Unadjusted and adjusted mean postnatal length of stay (days)for NSA private hospitals

Hospital	Mean LOS	Adjusted mean LOS[a]
Mater	5.89	9.41
SAN	6.26	9.79

[a] for a NVD, non-premature, non-PIH birth

For patient status (public/private), the only variables significantly associated with postnatal LOS in the multivariate model were PIH and delivery type. After allowing for these variables there was no longer any significant effect of multiple birth. After adjusting for PIH, women who had an emergency caesarean section stayed in hospital 1.5 days longer than women who had a NVD, women who had a planned caesarean stayed 1.5 days longer than those who had a NVD and women who had a vaginal delivery with forceps stayed 0.6 days longer than those who had a NVD. After allowing for delivery type, women who had PIH stayed 0.7 days longer than women who did not have PIH.

After allowing for delivery type and PIH, there was a significant difference in the mean LOS of public and private patients ($t=-4.026$, $df=260$, $P<0.001$). The unadjusted and adjusted mean LOS for public and private patients after allowing for delivery type and PIH is summarised in Table 24.

TABLE 24: Unadjusted and adjusted mean postnatal length of stay (days) for private and public patients

Patient status	Mean LOS	Adjusted mean LOS[a]
Public	4.71	5.59
Private	5.61	6.45

[a] for a NVD, non PIH birth

3.4.1 Satisfaction with postnatal length of stay

Women were asked to indicate whether their postnatal LOS in hospital was too long, just right or too short. Overall, the majority (84%) of women were happy with the length of time they spent in hospital after birth. Twenty eight women (10%) felt their postnatal stay was too long while seventeen women (6%) felt their stay was too short (Table 25).

TABLE 25: Satisfaction with postnatal length of stay by hospital

Hospital	too long	just right	too short	Total
	n	n	n	n
HKH	7	28	0	35
Manly	0	37	2	39
Mater	1	36	6	43
MV	1	19	2	22
RNS	7	43	3	53
Ryde	2	2	0	4
SAN	7	57	4	68
other	3	18	0	21
TOTAL	28 (10%)	240 (84%)	17 (6%)	285

Women commenting that their LOS was too long were most likely to have had their baby at Ryde, HKH, RNS or the SAN, while women commenting that their postnatal stay was too short were most likely to have had their baby at the Mater.

Satisfaction with postnatal LOS was examined in relation to the demographic variables. There was evidence of a significant association between satisfaction with LOS and patient status (χ^2=14.97, df=2, P=0.001). Nine percent (n=17) of women who were in hospital as private patients and no public patients reported that their LOS was too short. In contrast, 16% (n=16) of public patients reported that their postnatal stay was too long compared to 7% (n=12) of private patients.

Women who felt their LOS was too long or too short were asked how long they would have liked to stay in hospital and to indicate the reasons for their preferred length of postnatal stay. Table 26 shows the frequency with which the various reasons for wanting a longer stay in hospital were selected. The most common reason for women wanting to stay in hospital longer was to rest and recuperate. The next most common reason was to establish feeding.

TABLE 26: Reasons for wanting a longer postnatal stay in hospital for 17 women

Reason	n	%
to rest and recuperate	13	76%
to establish feeding	12	71%
to learn how to look after baby	7	41%
to go to exercise classes	5	29%
I had little help at home	4	24%
I wanted medical supervision	3	18%
other	2	12%
baby still in hospital	0	0

As shown in Table 27, on average, women wanting a longer stay at Manly or the Mater would have preferred to stay in hospital an additional three days, while women wanting a longer stay at MV, RNS or the SAN would have preferred an additional two days. For women at the public NSA hospitals, that is Manly, MV and RNS, the most common reason for wanting to stay in hospital longer was to establish feeding. Women who had their baby at one of the private hospitals in the NSA, that is the Mater or SAN, primarily wanted to stay in hospital longer to rest and recuperate. It should be noted however, that although this information may be useful to individual hospitals, it should be interpreted with caution due to small numbers.

TABLE 27: Average postnatal length of stay, preferred postnatal length of stay and most common reason for wanting a longer stay, by hospital

Hospital	n	LOS (days)	preferred LOS (days)	Most common reason
Manly	2	5.5	9.0	to establish feeding
Mater	6	4.8	7.8	to rest and recuperate
MV	2	3.5	5.5	to establish feeding
RNS	3	4.7	6.7	to establish feeding
SAN	4	5.7	8.3	to rest and recuperate

Table 28 shows the frequency with which the various reasons for wanting a shorter postnatal stay in hospital were selected. The most common reason women gave for wanting to leave hospital earlier was that they disliked being in hospital. The next most common reason was that they felt well.

TABLE 28: Reasons for wanting a shorter postnatal stay in hospital for 28 women

Reason	n	%
dislike being in hospital	16	57%
felt well	13	46%
noisy ward	12	43%
to establish a routine at home with baby	11	39%
felt confident looking after baby	11	39%
not enough privacy	10	36%
help was available at home	6	21%
other	6	21%
cost of being in hospital	2	7%

As shown in Table 29, women wanting a shorter stay at HKH, RNS, Ryde or the SAN would have preferred their stay in hospital to have been approximately two days shorter. Women wanting a shorter stay at MV or a non-NSA hospital would have preferred their stay to have been one day shorter while women wanting a shorter stay at the Mater would have liked their stay in hospital to have been reduced by about half.

The most common reason for women at HKH wanting a shorter postnatal stay in hospital was that they felt well. The woman at the Mater who wanted to leave earlier did so did because of the cost of being in hospital. Women at MV and RNS felt confident about looking after their baby at home. Women who had their baby at Ryde or a hospital in another AHS wanted to leave hospital earlier because of the noisy wards, while women at the SAN simply disliked being in hospital. Again, it should be noted that although this information may be useful

to individual hospitals, it should be interpreted with caution due to the small numbers.

TABLE 29: Average postnatal length of stay, preferred postnatal length of stay and most common reason for wanting a shorter stay, by hospital

Hospital	n	LOS (days)	preferred LOS (days)	Reason
HKH	7	4.1	2.5	felt well
Mater	1	10.0	4.5	cost of being in hospital
MV	1	4.0	3.0	felt confident
RNS	7	5.7	3.7	felt confident
Ryde	2	5.5	3.7	noisy ward
SAN	7	6.8	4.9	dislike being in hospital
other	3	4.3	2.5	noisy ward

3.4.2 Transfer to another hospital

After giving birth, eighteen women (6%) transferred to Castlecrag for postnatal care. The majority of these women had given birth at RNS (n=13). Women also went to Castlecrag from the Mater (n=3), Manly (n=1) and a non-NSA hospital (n=1).

There was a significant association between women transferring to Castlecrag and age (χ^2=6.49, df=1, P=0.01). The likelihood of transferring increased with increasing age; no women younger than 25 years, 4% (n=4) of 25-29 year olds, 9% (n=10) of 30-34 year olds and 11% (n=4) of women 35 years and over transferred to Castlecrag.

There was also a significant association between transferring to Castlecrag and patient status (χ^2=7.72, df=1, P=0.005). Nine percent (n=17) of private patients and only 1% (n=1) of public patients transferred to Castlecrag.

Age and patient were the only variables significantly associated with transferring to another hospital. Logistic regression analysis was then performed to further explore the relationship between transferring to another hospital and the covariates age and patient status. Patient status was identified as a significant predictor of transferring as summarised in Table 30. Private patients were more likely to transfer to Castlecrag than public patients.

However, the small numbers and wide confidence limits suggest this finding should be interpreted with caution.

Table 30: Predictors of transferring to another hospital after giving birth

Variable	Adjusted OR	95% CI	P
Age (years)			
≤29	1.00	0.89-8.86	0.08
≥30	2.80		
Patient status			
Public	1.00	1.09-64.91	0.04
Private	8.40		

Women were asked to list as many reasons as they wanted for transferring to Castlecrag. A total of 29 reasons were offered and were grouped into the following four categories:

- rest
- preferred LOS
- pleasant hospital environment
- individual care and assistance from nursing staff.

As shown in Table 31, the most common reason women gave for transferring to Castlecrag was the individual care and assistance offered by staff, accounting for half of all responses. The next most common reason was the pleasant hospital environment. However, given the small numbers, this data can only be seen as explorative.

TABLE 31: Reason for transferring to Castlecrag by hospital

Hospital	staff care	hospital envt	LOS	rest
Manly	1	0	0	0
Mater	1	0	1	1
RNS	13	8	2	1
other	0	0	1	0
TOTAL	15	8	4	2

3.5 SATISFACTION WITH CHOICE OF HOSPITAL

Women were asked to list up to three aspects they liked and three aspects they disliked about the hospital at which they gave birth.

Aspects women liked were grouped into the following 10 categories: nursing staff care; room; hospital facilities; food; hospital environment; convenient location; birthing facilities; care from clinicians; emergency facilities and LOS. Table 32 shows the frequency with which each of these categories was reported by respondents. Clearly, the most favoured hospital feature overall was the care from the nursing staff, accounting for 39% of comments.

TABLE 32: Favourable aspects of hospitals

Category	n	%
nursing staff care	277	39%
room	90	13%
hospital facilities	83	12%
food	65	9%
hospital environment	59	8%
convenient location	34	5%
birth facilities	33	5%
care from clinicians	27	4%
emergency facilities	19	3%
LOS	10	1%
TOTAL	705	100%

For each hospital, the three most commonly mentioned positive features were identified. Table 33 shows that for all hospitals, nursing care was the most

positive feature identified by women. Emergency facilities were rated as the second most positive feature of RNS, which is not surprising given that it offers a Neonatal Intensive Care Unit.

TABLE 33: Three most common positive features by hospital

Hospital	feature 1	n	feature 2	n	feature 3	n
HKH	nursing care	32	hospital facilities	10	birth facilities	7
Manly	nursing care	38	hospital facilities	9	room	9
Mater	nursing care	45	room	23	food	19
MV	nursing care	22	location	9	hospital envt	8
RNS	nursing care	51	emergency facilities	15	hospital envt	14
Ryde	nursing care	4	hospital facilities	2	birth facilities	2
SAN	nursing care	68	room	31	hospital facilities	28
other	nursing care	17	food	7	room	4

Following are some women's comments describing what they liked about the hospital they gave birth at:

"The staff could not have been more helpful, friendly and professional - nothing was too much trouble"

"The staff were excellent - knowledgable, helpful, put me at ease and gave me confidence. Food was great. Room and labour ward very comfortable. Physio and training classes great."

"Very helpful midwives seemed to have plenty of time to help if needed; clean (very) comfortable room with bathroom; education and exercise classes."

"Medically very efficient; well looked after by friendly and caring staff; own labour room - delivered in same room as in labour with a big private room afterwards."

"Convenient (close to home), availability of a private room, staff were friendly."

Aspects women disliked about the hospital at which they had their baby were grouped into the following 12 categories: poor nursing care; interruptions/noise; room; food; lack of hospital facilities; old buildings; visiting hours; lack of birth options; LOS; parking problems; poor care from clinicians and inconvenient location. As shown in Table 34, the most disliked feature of the hospitals overall was the lack of care and attention from nursing staff because they were too busy, accounting for 28% of responses.

TABLE 34: Negative aspects of hospitals

category	**n**	**%**
poor nursing care	86	28%
interruptions/noise	58	19%
room	45	14%
food	40	13%
lack of hospital facilities	19	6%
old buildings	17	5%
visiting hours	14	5%
lack of birth options	8	3%
LOS	8	3%
parking problems	8	3%
poor care from clinicians	5	2%
inconvenient location	4	1%
TOTAL	312	

For each hospital, the three most commonly mentioned negative features were identified. Table 35 shows that for all hospitals except HKH, poor nursing care was the most negative feature identified by women.

TABLE 35: Three most common negative features by hospital

Hospital	Feature 1	n	feature 2	n	feature 3	n
HKH	room	11	noise	7	food	7
Manly	nursing care	13	noise	13	food	6
Mater	nursing care	13	noise	7	LOS	5
MV	nursing care	4	noise	4	room	2
RNS	nursing care	21	room	16	food	16
Ryde	nursing care	3	room	2	noise	2
SAN	nursing care	17	food	7	noise	6
other	nursing care	9	room	6	lack of facilities	5

Following are examples of women's comments describing what they disliked about the hospital they gave birth at:

"Very busy - at times it was difficult to have nursing support."

"Sometimes the advice given by nurses on breastfeeding wasn't consistent and it was confusing to someone who didn't know how to do it at all."

"Very difficult to sleep during the day because of interruptions - doctors, midwives, meals, cleaners."

As an indication of women's overall satisfaction with the hospital they gave birth at, respondents were asked to indicate if they would return to the same hospital if they were to have another baby. Overall, women were very satisfied with their choice of hospital; 92% of respondents stated that they would go back to the same hospital for the birth of a subsequent child. Table 36 shows the proportion of women at each hospital who would return to that hospital again. Data of women who were undecided were excluded (n=4) although it is plausible to suggest that such uncertainty could reflect some level of dissatisfaction.

TABLE 36: Frequency and proportion of women who would return to the same hospital

Hospital	n	%
HKH	24	97%
Manly	34	92%
Mater	43	93%
MV	22	100%
RNS	51	90%
Ryde	0	0%
SAN	66	94%
Other	18	82%

Women attending hospitals in the NSA displayed high levels of overall satisfaction with their choice of hospital. For all NSA hospitals except Ryde, at least 90% of women reported they would return to the same hospital for their next baby. The following comments made by some respondents illustrate the high level of overall satisfaction with choice of hospital:

“Overall, I thought the hospital was great; it’s not a big maternity section, it was more personal and you got to know the midwives and they were very helpful and caring. I’ll definitely be going back there.”

“I thought Manly Hospital was wonderful and would definitely go back for No2. Good mix of feeling like a birthing centre but with the knowledge that the medical backup was there but discreetly kept at a distance.”

“The public health care system worked for me. I received excellent pre and post labour advice and care and was extremely happy with the midwife who delivered. The hospital’s location, staff and facilities were all excellent.”

“I had a long and difficult labour but I always felt I was in good hands. After the birth the facilities were excellent.”

“I was very happy with my stay in hospital and even though it was not my first choice (other hospitals were closer to where I live) I would prefer to return to familiar surroundings.”

“The staff in maternity and physiotherapy were very caring and gave me a lot of support and helpful advice. Despite the length of my stay, I enjoyed my time in hospital and came home feeling confident and positive about my new role as a mother.”

Satisfaction with hospital choice was examined in relation to type of delivery, and no association was found. Women who had a vaginal delivery with or without forceps/vacuum extraction were as likely as women who had a caesarean section to want have a subsequent baby at the same hospital as their first baby. Satisfaction with choice of hospital was also examined in relation to transferring to another hospital after birth, and no association was found. Women who transferred to another hospital after birth were as likely as women who did not, to have another baby at the same hospital as their first child.

Eighty four percent of women (n=246) provided an explanation describing why they would or would not choose the same hospital for another birth. The two most frequently reported reasons for choosing to go to the same hospital again were the quality of care received by staff (n=103) and the overall service provided by the hospital (n=78). The two most frequently reported reasons for wanting to go to a different hospital for a subsequent birth were the unhelpful midwives (n=6) and the desire to go to a private hospital (n=4).

DISCUSSION

This study was undertaken to explore women's views and experiences of obstetric hospitals in the NSAHS. In particular, we were interested in finding out what factors influenced women in their choice of obstetric hospital, how long they stayed in hospital after giving birth and whether they were satisfied with that LOS, and how satisfied they were overall in their choice of hospital. These issues were identified by the NSAHS as elements of most interest after recognising a shift in the pattern of use of the Area's obstetric hospitals. This study was seen as one way of obtaining valuable consumer information to help gain some insights into the changing patterns of use, and to assist in the modification and planning of the Area's maternity services.

Several aspects of the current study warrant comment prior to considering the results. As described earlier, both the timing and approach adopted to obtain women's views are important methodological issues to consider in the conduct of maternity services research. Recruiting from ECHCs was the most appropriate means of accessing women for this study for a number of reasons. First, it was necessary to access women postnatally in order to investigate the factors affecting their LOS in hospital after giving birth and their satisfaction with their choice of hospital. Second, it enabled responses to be collected from both public and private obstetric patients. Third, given that approximately 88% of first born children in the NSA attend an ECHC at least once, it ensured

responses were potentially able to be collected from a representative sample of women living in the NSA (J. Skinner, personal communication). Fourth, it enabled women who live in the NSA and travelled to an obstetric hospital in another AHS for the birth of their baby to be surveyed. Finally, it was independent of the hospital environment, thereby enabling women to more freely express their negative views and dissatisfaction without fear of repercussions on their future health care from that hospital.

The overall response rate of 94% was considerably higher than that reported by previous consumer surveys of maternity services[8,40,42,42a,43,46-49,56,59] and suggests women are keen to have some input into the maternity care they receive. The sample size of 297 women represents 2.8% of all births in NSA obstetric hospitals in 1995. It should be noted however, that for some sub-group comparisons such as those including obstetric complications, the information should be interpreted with caution due to small numbers. Despite the considerable advantages of collecting data from ECHCs, a comparison of the maternal and obstetric characteristics of the sample with the NSW Midwives Data Collection[22] indicates that the sample is not entirely representative of women in the NSAHS giving birth in 1995. Women aged 25-29 years and women who had an emergency caesarean or forceps/vacuum extraction delivery were over-represented while women aged 35-39 years, women who never married and women who had a NVD or planned caesarean delivery were under-represented. This may be due in part to the unequal representation of births at Manly, RNS and Ryde hospitals in the survey sample compared to the other NSA obstetric hospitals. Births at Manly were over-

represented in the sample which is likely to be a consequence of 3 of the 10 ECHCs being located nearby. However, births at RNS were under-represented and may reflect the role of RNS as a tertiary referral unit receiving patients from other Areas with complicated pregnancies or labours. Furthermore, several NESB communities live locally to RNS and the ineligibility of NESB women to participate in the survey may also have contributed to this under-representation. Births at Ryde hospital were also under-represented which is likely to be a consequence of its close proximity to at least three other obstetric hospitals in another AHS. However, despite these limitations, the current study represents the first rigorous assessment of women's views of NSA obstetric hospitals.

Overall, reputation of the hospital and quality of the nursing care were the most common reasons given for the choice of hospital. In retrospect, hospital reputation was not particularly helpful as a reason for hospital choice as it provides no insight into those issues which women perceive as contributing to a hospital's reputation. In future, it may be more helpful to attempt to identify more specific reasons. Other factors that were influential in determining women's choice of hospital were the expertise of the clinical staff, convenient location and the obstetrician's hospital association. Private patients were also more likely to be concerned about these issues than public patients, except in relation to convenient location which was of greater concern to public patients. These issues were also the most commonly identified 'most important' reasons for choice of hospital and are consistent with previous research. Given the lack

of a birth centre in the NSAHS, it is not surprising that range of birth options did not rate highly as a factor influencing hospital choice.

There is some evidence that the hospitals were selected for different reasons, suggesting that women do in fact perceive the hospitals as having different features to offer. For example, convenient location was associated with the selection of the public hospitals. In contrast, women's selection of the private hospitals was associated with hospital reputation, the recommendation of family and friends, quality of the nursing care, choice of obstetrician and the range of rooms available. Selection of RNS was distinctly associated with access to emergency facilities, which is not surprising given that it is the regional tertiary referral unit and provides neonatal intensive care facilities. Similar associations were also evident in women's identification of the most important reason for their choice of hospital. These findings are consistent with those of Bazley[43] who found women's selection of RNS to be associated with modern emergency technology, and staff care to be related to the selection of the SAN.

Just under half the sample by-passed their local obstetric hospital in favour of another. Of all hospitals Ryde was the most overlooked, which is likely to be in part due to its close proximity to other obstetric hospitals in the NSA and other AHSs. Private patients were more likely to by-pass their local hospital than public patients, primarily because their obstetrician did not deliver at their local hospital. Those choosing the non-local hospital were also looking for a private room. This information is useful from a planning perspective as it suggests that

increasing the number of private rooms could persuade some women to go to their nearest hospital.

The results of the current study show great variation in maternal postnatal LOS, ranging from less than 1 day to 11 days. Overall, the average postnatal LOS of women in the sample (5.3 days) was higher than the national average of 4.5 days. Given that the NSA has high rates of private health insurance and that women with private health insurance tend to stay in hospital longer than public patients, this finding is not surprising.[1] In line with other research findings,[1,46,47,52] the current study found that patients who were privately insured, older, had a caesarean section, had complications (PIH, premature birth), a multiple birth or difficulties breastfeeding stayed in hospital longer than women without these factors. However, given that many of these variables are highly correlated, these findings are not surprising. For example, it is reasonable to think that a woman who experiences complications may have a caesarean section.

While it is acknowledged that reliable information about LOS can be difficult to obtain due to issues such as accuracy of self-report and variation in how hospitals determine day 1, overall, the majority of women reported being satisfied with their postnatal LOS, indicating that the time of discharge was appropriate for most women. This finding supports other research where women with varying amounts of time in hospital after birth report being happy with their postnatal LOS.[46-48,52] Women who felt their stay was too long were more likely to be public patients, despite a shorter average postnatal LOS than

private patients. Thus the findings of this study and those of the recent review in Western Australia[47] do not support concerns that public patients may be discharged from hospital before they are ready in order to help reduce demands on public beds. This is in contrast to the findings of Small[52] who found that public patients were both more likely to go home early and more likely to feel that their stay was too short. The differences between these studies may reflect changes that have occurred in hospital early discharge policies between 1989 and 1995. Consistent with previous research,[53] the main reasons women gave for wanting a shorter stay in hospital were that they disliked being in hospital, they felt well or the ward was noisy.

More surprising however was the finding from the current study that private patients felt their hospital stay was too short, despite the fact that they stayed one day longer on average than public patients. In line with previous research, the main reasons women wanted to stay longer were to rest and recuperate and to establish feeding.[54] This possibly reflects women's perceptions that, following discharge, it is difficult to access expert advice on breast feeding and suggests the need for women to be made aware of the range of relevant services available in the community so they can make an informed decision about the postnatal LOS in hospital that is right for them.

The issue of postnatal LOS in the NSA is somewhat complicated by the existence of Castlecrag hospital, a private hospital offering postnatal care. Not surprisingly, of the small proportion of patients in the sample who transferred to Castlecrag, the majority were private patients from RNS. Although RNS

maintains an active liaison with Castlecrag and during busy times suggests to patients that they consider transferring there, some women plan to go to Castlecrag for postnatal care. The most common reason reported by women for transferring to Castlecrag was to receive more personalised care from nursing staff.

Clearly there is marked variation in the postnatal LOS and postnatal care preferences of women in the NSAHS. Despite the national trend towards shorter postnatal LOS in hospital, there is little evidence that women in the NSAHS desire a shorter stay, which highlights the need for hospitals to be flexible to accommodate women's LOS needs. This is borne out in the Western Australia consumer surveys where the reduction in postnatal LOS from 7 days in 1989 to 5 days in 1995 was matched with a reduction in the proportion of women reporting their LOS as just right. Those NSA hospitals that do offer early discharge schemes should ensure that information about the scheme is widely available. Similarly, women should also be informed about Castlecrag hospital as a postnatal care option. This would enable women to make an informed decision about the postnatal care that best suits them and their family.

As outlined earlier in this thesis, there are several approaches to measuring satisfaction with maternity services. The method chosen for this study was to ask women to list three aspects of the hospital they went to that they liked and disliked. As an overall measure of satisfaction, women were also asked whether they would go to the same hospital if they were to have another baby, and were given the opportunity to explain their answer. Although this is not an

ideal method of assessing satisfaction, the length of the questionnaire meant it was not amenable to including any specific satisfaction measures.

Clearly the most favoured hospital feature overall was the care from the nursing staff. Furthermore, for each hospital in the NSAHS, nursing care was identified as the most positive feature. There were few differences between hospitals in the features that women rated as most positive, but some are worth commenting on. For example, access to emergency facilities was frequently reported by women who attended RNS, which is not surprising given its NICU. For the two private hospitals, that is the SAN and Mater, the room was frequently reported as a positive feature. For the public hospitals, hospital facilities such as exercise classes and education sessions also rated highly. At two public hospitals, that is HKH and Ryde, birth facilities were frequently reported as good features of the hospital. This is valuable feedback for individual hospitals to receive as it indicates to them the aspects of their service that they are getting right.

Overall, women made few negative comments about the hospitals. However, just as nursing care can be the most positive feature of a hospital experience, it can also be the worst, as was found in the current study. The most common comments concerning poor nursing care were offered in relation to nursing staff being too busy to offer assistance to patients and inconsistent advice on breastfeeding. Staff shortages are inherent in the health system and reflect cuts to hospital budgets. However, there is the opportunity to address the issue of breastfeeding. For example, hospitals should encourage staff to participate

in regular inservice courses to ensure that staff are adequately trained and up to date. Furthermore, hospitals should develop and implement a breastfeeding policy to minimise variation in the advice offered to new mothers. Other negative features frequently mentioned concerned excessive noise and unpleasant food.

Women expressed a high level of overall satisfaction with all NSAHS obstetric hospitals except Ryde. At least 90% of women reported that they would return to the same hospital for the birth of their next baby. However, some caution needs to be exercised in interpreting this information as previous research has shown that this approach usually underestimates levels of dissatisfaction.[41,42] It is alarming that all 4 women in the survey who gave birth at Ryde would not return there to have another baby. The main reason given for this was the unhelpful midwives. However, these data also need to be interpreted with caution as the study sample greatly under-represented women who had given birth at Ryde hospital.

As the first Area-wide study of women's views of the NSAHS obstetric hospitals, this study suggests that women have high levels of overall satisfaction with the maternity services they are receiving. Although there is still some room for improvement, it is difficult to pinpoint from these results any major consumer issues for the obstetric hospitals of the NSAHS to address in order to meet the needs of its service users. At a time when other areas of NSW and Australia are establishing alternative birth options such as birth centres for their service users, the NSAHS remains comparatively conservative.

It is surprising that the comparative lack of alternative birth options in the NSAHS was not borne out as an area of dissatisfaction in this study but this may simply reflect unfamiliarity with an option that is not easily accessible. Conversely, it may reflect women's satisfaction with whatever their birth experience when they have no previous birth experience to compare it to.

REFERENCES

1. Day P, Lancaster P, Huang J. *Australia's mothers and babies 1995*. Perinatal Statistics Series No 6. Sydney: AIHW National Perinatal Statistics Unit, 1997.

2. Bennett A, Etherington W, Hewson D. *Childbirth choices*. Ringwood: Penguin, 1993.

3. Bennett C, Shearman R. Maternity services in NSW – childbirth moves toward the 21st century. *Med J Aust* 1989;150:673-676.

4. Sutherland P. Childbirth options. *Healthright* 1982;1:35-38.

5. Draper M, Hill S. Valuing consumer feedback:: putting patient satisfaction into quality measures. *Health Forum* 1997;40:15-17

6. Health Care Committee. *Options for effective care in pregnancy*: *consultation document*. National Health and Medial Research Council,1994.

7. Ministerial Taskforce to review obstetric, neonatal and gynaecological services in Western Australia. *Volumes I-III* Perth: Health Department of Western Australia, 1990.

8. Ministerial Review of Birthing Services In Victoria. *Having a baby in Victoria*. Melbourne: Health Department Victoria, 1990.

9. Ministerial Task Force on Obstetric Services in New South Wales. *Maternity Services In New South Wales*. Sydney: NSW Department of Health, 1989.

10. Shearer M. Maternity patients' advocates in the 1990s. *International Journal of Technology Assessment in Health Care* 1991;7:517-529.

11. Campbell R, Macfarlane A. Recent debate on place of birth. In: Garcia J, Kilpatrick R, Richards M, editors. *The politics of maternity care: services for childbearing women in twentieth century Britain*. Clarendon Press: Oxford, 1990.

12. Tito F, editor. *Compensation and professional indemnity in health care – an interim report.* Review of professional indemnity arrangements for health care professionals. Canberra: AGPS, 1994.

13. Lancaster P, Huang J, Pedisich E. *Australia's mothers and babies 1991*. Perinatal Statistics Series No 1. Sydney: AIHW National Perinatal Statistics Unit, 1994.

14. Australian Institute of Health and Welfare. *Australia's health 1996*. Canberra: AGPS, 1996.

15. Halloran J, Gunn J, Young D. Shared obstetric care: the general practitioner's perspective. *Aust NZ J Obstet and Gynaecol* 1992;32:301-305.

16. Ratten G, McDonald L. Organisation and early results of a shared antenatal care program. *ANZ J Obstet & Gynaecol* 1992;32:296-300.

17. Giles W. Collins J. Ong F. MacDonald R. Antenatal care of low risk obstetric patients by midwives: a randomised controlled trial. *Med J Aust* 1992;157:158-61.

17a. Webster J, Forbes K, Foster S, Thomas I, Griffin A, Timms H. Sharing antenatal care: client satisfaction and use of the 'patient-held record'. *ANZ J Obstet & Gynaecol* 1996; 36:11-14.

17b. Laslett A-M, Brown S, Lumley J. Women's views of different models of antenatal care in Victoria. *Birth* 1997;24:81-89.

18. Milne P and Associates. *Client response to birth centres in NSW*. North Sydney: NSW Health Department, 1992.

19. National Health and Medical Research Council. *Report of the working party on homebirth and alternative birthing centres*. Canberra: NHMRC, 1987.

20. Bastian H, Lancaster P. *Homebirths in Australia 1988-1990*. Sydney: AIHW National Perinatal Statistics Unit, 1992

21. Skinner J, Hort K, March L, Holt D et al. *Health from the Harbour to the Hawkesbury: update 1994*. Hornsby: Northern Sydney Area Health Service, 1994.

22. Taylor L, Pym M. *New South Wales Midwives Data Collection 1995*. Public Health Bulletin Supplement, Number 2, North Sydney: NSW Health Department, 1996.

23. Holt D. NSW midwives data collection 1994. [unpublished]. Sydney, 1995.

24. Taylor L, Pym M. *New South Wales Midwives Data Collection 1994*. Public Health Bulletin Supplement, Number 3, North Sydney: NSW Health Department, 1995.

25. Roberts C, Algert C, March L. Delayed childbearing - are there any risks? *Med J Aust* 1994;160:539-544.

26. Jonas O, Roder D, Chan A. The association of maternal and socioeconomic characteristics in metropolitan Adelaide with medical, obstetric and labour complications and pregnancy outcomes. *Aust NZ J Obstet Gynaecol* 1992; 32:32-15.

27. Miller G. Midwife crisis. *The Northern Herald* (Sydney) 28 September,1995:4.

28. Hund G, editor. (1995). Maternity hospitals survey. *Sydney's Baby* Autumn: 18-21.

29. *Your maternity unit by the sea* [brochure]. Sydney. Manly Hospital, [undated].

30. *Sydney Adventist Hospital welcomes you to their maternity unit* [brochure]. Sydney Adventist Hospital, 1993.

31. *Welcome to my world* [brochure]. Royal North Shore Hospital and Community Health Service, [undated].

32. *Welcome to our maternity unit* [brochure]. Sydney: The Hornsby Ku-ring-gai Hospital and Community Health Services, [undated]

33. Postnatal care [leaflet]. Castlecrag Private Hospital, [undated].

34. Jacoby A, Cartwright A. Finding out about the views and experiences of maternity services users. In: Garcia J, Kilpatrick R, Richards M, editors. *The politics of maternity care: services for childbearing women in twentieth century Britain*. Clarendon Press: Oxford, 1990.

35. Bennett A. The birth of a first child: do women's reports change over time? *Birth* 1985;12:153-158.

36. Hewson D, Bennett A. Childbirth research data: medical records or women's reports? *Am J Epidemiol* 1987;125:484-491.

37. Lumley J. Assessing satisfaction with childbirth. *Birth* 1985;12:141-145.

38. Erb L, Hill G, Houston D. A survey of parents' attitudes toward their caesarean births in Manitoba hospitals. *Birth* 1983;10:85-91.

39. Cartwright A. Monitoring maternity services by postal questionnaires to mothers. *Health Tends* 1987;19:19-20.

40. Seguin L, Therrien R, Champagne F, Larouche D. The components of women's satisfaction with maternity care. *Birth* 1989;16:109-113.

41. Bramadat IJ, Driedger M. Satisfaction with childbirth: theories and methods of measurement. *Birth* 1993;20:22-28.

42. Sullivan DA, Beeman R. Satisfaction with maternity care: a matter of communication and choice. *Med Care* 1982;20:321-330.

42a. Brown S, Lumley J. The 1993 survey of Recent Mothers: issues in survey design, analysis and influencing policy. *Intl J Qual Health Care* 1997;9:265-75.

43. Bazeley PA. *Choosing an obstetric hospital*. Report of a consumer survey presented to the Ministerial Taskforce to Review Obstetric Services. Sydney: NSW Department of Health, 1988.

44. Whelan A. *Centering birth: a prospective cohort study of birth centres and labour wards* [PhD thesis]. Sydney: Univ of Sydney,1994.

45. Robinson MB, Sim FM, Chapple J. Which maternity unit? Who makes the choice? *J Public Health Medicine* 1993;15(3):277-280.

46. Bartlett H, Pennebaker D. *Consumer views of maternity services in Western Australia*. A report for the Ministerial Task Force to review obstetric, gynaecological and neonatal services in Western Australia. Volume III Survey reports. Perth: Health Department Of Western Australia, 1990.

47. Gilles M, Gee V, Rouse I, Semmens J. *Consumer views of maternity services: a survey for mothers*. A report for the Parliamentary Select Committee on Intervention in Childbirth in Western Australia. Perth: Health Department Of Western Australia,1995.

48. Illawarra Area Health Service. *Measuring maternity services: quality and outcome*. Illawarra: IAHS, 1993.

49. Cunningham JD. Experiences of Australian mothers who gave birth either at home, at a birth centre, or in hospital labour wards. *Soc Sci Med* 1993;36:475-483.

50. Concannon P, Danvers L, Messum D, Bird H. *Mother's perceptions of antenatal perinatal and postnatal services in lower north shore area of Sydney – 1988* [unpublished]. Sydney, 1991.

51. O'Malley S. *Northern Sydney Area Health Service obstetrics survey*. [unpublished]. Sydney, 1993

52. Small R, Lumley J, Brown S. To stay or not to stay: are fears about shorter postnatal hospital stays justified? *Midwifery* 1992;8:170-177.

52a. Brown S, Lumley J. Reasons to stay, reasons to go: results of an Australian population-based survey. Birth 1997;24:148-58.

53. Shiell A, Cameron S, Kenny P, King M. A mother's choice: the reasons women choose hospital stay over early discharge. *Health and Social Care* 1994;2:69-76.

54. Cleland S, Cameron S, Kenny P, King M et al. *Evaluation of obstetric early discharge: an overview*. Discussion paper series number 9. Westmead: Centre for Health Economics Research and Evaluation, 1992.

55. Brown S, Lumley J. Antenatal care: a case of the inverse care law? *Aust J Public Health* 1993:17:95-103.

56. Zadoroznyi M. Women's satisfaction with antenatal and postnatal care. *Aust NZ J Public Health* 1996;20:594-602.

57. Brown S, Lumley J. Satisfaction with care in labour and birth. *Birth* 1994;21:4-13.

58. Green JM. Expectations, experiences, and psychological outcomes of childbirth: a prospective study of 825 women. *Birth* 1990; 17:15-24.

59. Jacoby A. Women's preferences for and satisfaction with current procedures in childbirth - findings from a national study. *Midwifery* 1987;3:117-24.

APPENDIX 1

APPENDIX 2