

**An evaluation of the Midwifery Development  
Unit service specifications, through the  
Quality Assurance Model for Midwifery**

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# Abstract

## INTRODUCTION

The United Kingdom's first Midwifery Development Unit was established at Glasgow Royal Maternity Hospital in July 1992. This is a large university teaching hospital with around 5000 deliveries per annum which serves a relatively disadvantaged population (McGinley, Turnbull, Fyvie, Johnstone & MacLennan, 1995). The aim of the Unit was to improve the quality of care provided to women during pregnancy and childbirth. The Unit's objectives were to: introduce a midwifery care programme for healthy pregnant women; encourage participating midwives to utilise their skills to the full; monitor and evaluate the unit; and develop audit and educational tools for use by the profession and other health boards.

The Midwifery Development Unit consisted of a midwifery and a research team, overseen by a multidisciplinary steering group. The research team was responsible for evaluating the new midwifery care programme using a randomised controlled trial which compared the clinical, psychosocial and economic outcomes of 648 women randomised to receive midwife-managed care, with 651 women randomised to receive shared care (Midwifery Development Unit, 1995a).

The midwifery team developed the midwife-managed programme of care using a consumer driven Quality Assurance Model for Midwifery - QAMID (World Health Organisation, 1991; McGinley et al, 1995). Through QAMID, three service specifications were generated which described the goals of the new programme and encompassed:

**Continuity of carer:** women would be cared for by a named midwife and three associate midwives, from booking through to transfer to the health visitor in the postnatal period

**Individual informed care planning:** each woman would hold her own Care Plan which would contain clinical notes, as well as her preferences for care and her comments on care following a de-briefing session

**Information and choice:** each woman would receive a basic Information Pack with information tailored thereafter to the woman's needs.

In addition to the randomised controlled trial, a study was carried out to identify how well these service specifications were achieved. The specific objectives of the study were: to identify how many women received a Care Plan and basic Information Pack; to ascertain the number of midwives who cared for each woman; and to measure women's satisfaction with the delivery of care in relation to the service specifications.

## **METHODOLOGY**

### **Sample**

Recruitment to the randomised controlled trial commenced in January 1993, and a total of 648 women were allocated to midwife-managed care. From these, a consecutive sample (in terms of expected dates of delivery) of 180 women were chosen for the study. To give the midwives time to familiarise themselves with the new care programme, women randomised to receive midwife-managed care after 1st May 1993 were selected. To measure whether or not the unit achieved the service specifications, the sample was restricted to women who were still receiving midwife-managed care at the point of evaluation. Nineteen women were transferred to the obstetric team during the antenatal period, therefore the antenatal sample included 161 women. A further 41 women were transferred to the obstetric team during the intrapartum and postnatal periods, therefore the postnatal sample comprised 120 women.

### **Data collection**

One antenatal and one postnatal questionnaire were developed following extensive piloting. The questionnaires were used to identify how many women received a Care Plan and basic Information Pack, and to measure women's satisfaction with the delivery of care in relation to the service specifications. Both questionnaires mainly comprised closed-ended questions with responses arranged on 3-point to 5-point scales. Several open-ended questions were included where qualitative data was required. As well as these questions, the antenatal questionnaire included several statements arranged on a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree' (Likert, 1932).

The Likert scale examined women's attitudes to the service specifications set for continuity of carer and information and choice. Questionnaires were sent to women's homes at 34-35 weeks gestation and six to seven weeks after delivery.

A retrospective review of the case-records and Care Plan was conducted to measure continuity of carer and to examine the information recorded by women in their Care Plan. The number of different midwives who cared for each woman was identified by counting signatures in the case-records and Care Plan where there was evidence of care given. Four pages were incorporated into the Care Plan, on which women could document any preferences for care. These were titled: Pregnancy and birthplan, Pregnancy plan, Birthplan and Postnatal plan. A fifth page headed Talkback was also included as part of the de-briefing session. Information was collected on whether women used the designated pages of the Care Plan, how much was written on each page, and the content of what was written.

## **RESULTS**

### **Sample and response rates**

A total of 161 women were sent the antenatal questionnaire and 140 replied (87%). One hundred and twenty women were sent the postnatal questionnaire, to which 83 replied (69%). There were no differences in the following socio-demographic characteristics between respondents and non-respondents for both questionnaires: age, parity, marital status, smoking behaviour and neighbourhood type (Carstairs, 1991). All case-records were found and reviewed (n=120), as well as 90 percent of Care Plans (n=108).

## **Continuity of carer**

Fifty-four percent of women were cared for by four or fewer midwives from booking until transfer to the health visitor postnatally (95% CI: 44% to 63%). A further 25 percent were cared for by five midwives, 12 percent by six midwives, and nine percent were cared for by seven to ten midwives. Women had a strong degree of identification with their named midwife, with 91 percent correctly reporting their midwife's name.

## **Individual informed care planning**

Ninety-eight percent of women were given a Care Plan at their first visit to the hospital. The purpose of the Care Plan was to encourage women to discuss their pregnancy and preferences for care, and generally gain information about their pregnancy. One question was asked in relation to each of these items, and 90 percent of women reported the Care Plan useful for at least two of the three items. Most women (80%) were encouraged to document any preferences in the Care Plan "as much as they wanted". Eighty-one percent of women thought this was a good idea.

Examination of the content of the Care Plan identified that the majority of women completed the Talkback page (96%), where they made mainly positive comments about their care and described events that had occurred during their care. Thirty-two percent of women used the Birthplan, where they most frequently described preferences in relation to analgesia, mobilisation, perineal trauma and suturing. Twenty-seven percent of women used the Pregnancy and birthplan, seven percent used the Pregnancy plan, and 13 percent used the Postnatal plan.

## **Information and choice**

The majority of women (89%) received a basic Information Pack early in their pregnancy. Thirty-one percent wanted further specific information on subjects such as: the birth, pain relief, positions during labour and procedures. Of those, 76 percent were given "all" or "most" of the information they wanted, with 24 percent given "some", "little" or "none" of the information. Ninety-five percent of women thought it was important they "had a say in" what happened to them during their antenatal care. Of these, 88 percent had as much "of a say" as they wanted.

## **CONCLUSION**

Overall, the results demonstrated that the service specifications set for individual informed care planning and information and choice were achieved for the majority of women. However, the specification set for continuity of carer proved more difficult to maintain, and required review. In general, women were highly satisfied with the way care was delivered in relation to the service specifications and had a strong degree of identification with both the programme and their named midwife.

QAMID proved a good model to employ when developing the new programme of care. The process follows the normal audit cycle with the unique feature being that it is driven by users of the service. Perhaps due to this, care needs to be taken to ensure realistic and achievable service specifications are generated, particularly in areas where women's expectations may be high.

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# Chapter 1: Background & Introduction

## 1.1 BACKGROUND

Since 1990 there has been a growing momentum towards change in the maternity services, with the emphasis on woman centred care and a service tailored to meet women's expressed needs. Recent government initiatives have questioned the appropriateness of the traditional shared care model in the maternity service, where care is divided between midwives, obstetricians and general practitioners (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993). The House of Commons Health Committee Report (1992) identified three elements important to women in relation to maternity care: *"the need for continuity of care, the desire for choice of care and place of delivery"* and *"the right to control over their own bodies at all stages of pregnancy and birth"*. The report concluded that shared care did not meet women's needs and recommended a *"radical re-appraisal"* of the current system of maternity care (House of Commons Health Committee, 1992). In all the government reports the recognition of midwifery as a profession was recommended, and the development of midwife-managed units supported (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993).

Two midwife-managed units had been established and evaluated within the United Kingdom (MacVicar, Dobbie, Owen-Johnstone, Jagger, Hopkins & Kennedy, 1993; Hundley, Cruikshank, Lang, Glazenger, Milne, Turner, Blyth, Mollinson & Donaldson, 1994). In these units midwives had responsibility for only part of the woman's care, such as antenatal care or intrapartum care. This meant a degree of fragmentation remained within the service and continuity of care was not achieved. Another type of midwife-managed unit was established in Scotland, where midwives had responsibility for women from the onset of pregnancy until 28 days after delivery. This was the Midwifery Development Unit (also known as MDU) based at Glasgow Royal Maternity Hospital.

## 1.2 INTRODUCTION

In 1991 The Scottish Office Home and Health Department announced that central funding was available and invited bids for the implementation of a Midwifery Development Unit in Scotland. Glasgow Royal Maternity Hospital succeeded in securing the funding, and the United Kingdom's first Midwifery Development Unit was established in July 1992. The Midwifery Development Unit in Glasgow has been described as:

“ *A setting which aims to achieve and promote excellence in midwifery care. It is geared towards improving midwifery care in a climate where each person's contribution is valued and an open, questioning, supportive approach is fostered.* ”

(McGinley, 1993)

The Midwifery Development Unit was based within Glasgow Royal Maternity Hospital, which serves the North and East of the city. This is a large university teaching hospital and the busiest of Greater Glasgow Health Board's Maternity Units, with around 5000 deliveries per annum. The hospital serves a relatively disadvantaged population, with around half of the women attending the hospital living in areas of high social deprivation (Midwifery Development Unit, 1995a).

The aim of the Midwifery Development Unit was to improve the quality of care provided to women during pregnancy and childbirth. The Unit's objectives were to:

- Introduce a total midwifery care programme for women experiencing a normal healthy pregnancy
- Encourage participating midwives to utilise their skills to the full
- Monitor and evaluate the unit
- Develop audit and educational tools for use by other health boards and the midwifery profession.

The Midwifery Development Unit consisted of a midwifery team and a research team overseen by a multidisciplinary steering group. The midwifery team comprised a management team (the Head of Midwifery Services and two senior clinical midwives), together with a group of 20 midwives who delivered care. The midwifery team was responsible for developing and implementing the new midwife-managed programme of care.

The funding from The Scottish Office Home and Health Department was used primarily to create a multidisciplinary research team who would be responsible for monitoring and evaluating the unit. The team comprised a project manager, two research midwives (one the author), a social scientist, health economist, resource assessor and clerical support staff. An evaluation of the new midwifery care programme was conducted using a randomised controlled trial (also known as RCT), with analysis on the basis of intention to treat. The trial compared the clinical, psychosocial and economic outcomes of 648 women randomised to receive midwife-managed care, with 651 women randomised to receive shared care (Midwifery Development Unit, 1995a).

### **1.3 THIS STUDY**

The midwifery team developed the midwife-managed programme of care using a consumer driven Quality Assurance Model for Midwifery (QAMID) (World Health Organisation, 1991; McGinley et al, 1995). Through this model, three service specifications were generated which described the goals of the new programme. In addition to the randomised controlled trial, this study was conducted to identify if the Midwifery Development Unit service specifications were achieved. This was the first time QAMID had been tested in practice.

# **Chapter 2: *Literature Review***

## **2.1 INTRODUCTION**

Historically, the care of women during pregnancy, childbirth and the puerperium was provided in the home by midwives (Oakley, 1984; Donnison, 1988; Campbell & Macfarlane, 1994). This allowed midwives to utilise a range of skills including clinical, advisory and teaching skills, and ensured continuity of care for women. However, since the early 1900's the role of the midwife has been gradually eroded and the process of childbirth has become medicalised (Oakley, 1984; Pearce, 1987; Donnison, 1988; Morris-Thomson, 1992; Clarke, 1993; Campbell & Macfarlane, 1994). This led to the fragmented service evident today, and resulted in loss of continuity of care for women.

## **2.2 THE MEDICALISATION OF CHILDBIRTH**

Childbirth has changed dramatically over the last 100 years mainly due to the medicalisation of maternity care. Two factors instrumental in this change were the development of antenatal care and the trend towards hospital birth (Oakley, 1984; Wagner, 1994).

In the early 1900's, high rates of infant and maternal mortality persisted despite the fact that the birth rate fell. The evidence suggested factors such as poor housing and nutrition, as well as poor personal health were to blame. The government addressed this problem by establishing maternal and child welfare schemes and by introducing a system of antenatal care (Oakley, 1984; House of Commons Health Committee, 1992; Wagner, 1994). This interrupted the established tradition where maternity care was the remit of midwives and women delivered at home.

The Notification of Births Act in 1907, and the extension to the Act in 1915, gave local government the power to award grants to local authorities and voluntary bodies to provide maternity care. As a result of these funds, facilities such as home helps, antenatal and child welfare clinics, maternity centres and maternity inpatient beds within hospitals were established (House of Commons Health Committee, 1992; Campbell & Macfarlane, 1994). Despite these changes the majority of women still delivered at home with midwives and hospital delivery was recommended for complicated pregnancies only (Donnison, 1988; Campbell & Macfarlane, 1994). However, throughout the 1920's obstetricians campaigned successfully to assert their independence and the British College of Obstetricians and Gynaecologists was founded in 1929. The College became extremely influential in exalting the status of obstetricians and the new profession flourished thereafter (Tew, 1995). As a result, the pattern of antenatal care still evident today was established by 1929 (monthly visits until 28 weeks, fortnightly visits until 36 weeks, and weekly visits thereafter). Along with obstetric antenatal care came the birth of technology such as x-rays, induction of labour and caesarean section (Wagner, 1994).

Throughout the 1920's and 1930's, obstetricians began advocating increased hospital confinement on the grounds of safety. At the same time women's groups were also campaigning for more hospital services (Campbell & Macfarlane, 1994). Some groups highlighted the poor condition of working class homes and their unsuitability for childbirth, while others wanted access to interventions such as analgesia in labour. As a result of this, the number of beds in hospitals, maternity homes and general practitioner units increased, although care continued to be provided in the home by midwives for the majority of women (Donnison, 1988; Campbell & Macfarlane, 1994).

Despite this fact, a battle for control of maternity care ensued between midwives, general practitioners and obstetricians. By the 1940's pressure was mounting from obstetricians who favoured hospital confinement, and in 1944 the Royal College of Obstetricians and Gynaecologists recommended that provision was made for 70 percent of births to take place in hospital (Campbell & Macfarlane, 1995). In 1946, the National Health Service (NHS) Act provided free maternity services for all, including the services of doctors and midwives. In addition, general practitioners were remunerated for the provision of maternity care (House of Commons Health Committee, 1992; Oakley, 1984). Where previously the first point of contact for women when pregnant had been the midwife, this was no longer necessarily the case. Indeed, due to the financial incentive, many general practitioners chose to offer maternity care which until then had largely been the remit of midwives (House of Commons Health Committee, 1992; Oakley, 1984). This served to balance the battle for control of care in favour of obstetricians and general practitioners (Oakley, 1984).

The trend for institutionalised care continued throughout the 1950's, when attendances at hospital antenatal clinics were far higher than those at local health authority clinics. By this time the number of hospital births was double the number of home births (Oakley, 1984). During the 1950's, information on perinatal mortality became available and it was suggested that the safest place to give birth was a hospital consultant unit (Oakley, 1984).

The Cranbrook Committee, set up in 1959 to review the maternity services, supported this view. The Committee recommended an expansion of hospital maternity services and suggested that provision should be made for 70 percent of women to deliver in hospital. However, the Committee also supported domicillary midwifery, although the careful selection of women for this service was recommended (Pearce, 1987; House of Commons Health Committee, 1992; Campbell & Macfarlane, 1995). The Committee concluded that obstetrics required specialist skills beyond the scope of the general practitioner and this may have contributed to the increased demand for maternity beds thereafter (Pearce, 1987; Campbell & Macfarlane, 1994).

Throughout the 1960's, the number of consultant obstetricians increased while the number of general practitioners providing maternity care decreased. Simultaneously, the number of midwives working in hospital increased and the number of community midwives attending home births fell. The target of 70 percent of women delivered in hospital was achieved by 1964, and this had risen to 80 percent by 1968 (Campbell & Macfarlane, 1994).

In 1970, the Standing Midwifery and Maternity Advisory Committee was established, with the remit of assessing the future of domicillary midwifery (Ministry of Health, 1970). The Report of this Committee (the Peel Report) effectively completed the institutionalisation of maternity care.

The Peel Report recommended that provision was made for all women to deliver in hospital, completely phasing out home birth. In addition, the Report recommended that maternity care was "shared" between obstetricians, general practitioners and midwives, and suggested the integration of domicillary and hospital based midwifery (Ministry of Health, 1970). Furthermore, the Report recommended the replacement of small isolated obstetric units with services centralised within large consultant/general practitioner obstetric units in general hospitals (Ministry of Health, 1970; House of Commons Health Committee, 1992; Campbell and Macfarlane, 1995). By 1979, 98 percent of women in the United Kingdom were delivered in hospital (Bryar, 1991; Campbell & Macfarlane, 1994). The recommendations of the Peel Report were approved by The House of Commons Social Services Committee, established in 1980 (Campbell & Macfarlane, 1994). Moreover, this Committee proposed that isolated general practitioner units should be closed and that home birth should cease.

As a result of the institutionalisation and medicalisation of maternity care, the gradual erosion of the midwives' role was realised. The traditional model of maternity care in the United Kingdom became and still remains the "shared care" approach (Bull, 1989; Tucker, Florey, Howie, McIlwaine & Hall, 1994). With this approach emerged the belief that no pregnancy was normal except in retrospect:

“ *When antenatal care began, a few percent of pregnant women were regarded as "at risk" of their own or their fetuses' mortality and morbidity. The task of antenatal care was to screen a population of basically normal pregnant women in order to pick up the few who were at risk of disease or death. Today the situation is reversed, and the object of antenatal care is to screen a population suffering from the pathology of pregnancy for the few women who are normal enough to give birth with the minimum of midwifery attention.* ”

(Oakley, 1984)

### **2.3 THE ROLE OF THE MIDWIFE**

The Midwives' Act of 1902 meant State Registration and professional status for midwives. However, over the last century, midwives have observed a gradual loss of autonomy and the right to control their own practice (Oakley, 1984; Donnison, 1988; Clarke, 1993). This has been due mainly to the decline of the social event of childbirth and its rise as a pathological medical condition (Oakley, 1984; Donnison, 1988).

Following the Act, all practising midwives were overseen by the Central Midwives Board which was comprised mainly of medical practitioners. In addition, midwives were subject to local authority supervision which at that time was usually associated with the licensing of tradesmen. Any breach of conduct, either professionally or socially, resulted in removal from the State Register (Donnison, 1988).

Apart from these governing bodies, the nursing profession was also a dominant force in the supervision of midwives. Indeed, this led to the situation where the majority of midwives were also qualified nurses (Donnison, 1988).

The main opponent to the Midwives' Act was the medical profession, which felt midwives were unnecessary and that registration would establish "*an inferior order of medical practitioners*" (Pearce, 1987). Since obstetricians and general practitioners were already in competition for the control of maternity care, the State Registration of midwives and recognition of their status as professionals was an added threat (Donnison, 1988). The institutionalisation of maternity care was one method whereby obstetricians effectively gained control over midwifery practice (Pearce, 1987; Morris-Thomson, 1992; Clarke, 1993).

By 1905, the midwives' roll contained over 20,000 practising midwives. A small proportion of these practised in hospitals or maternity homes, while the majority worked independently and provided home birth for all types of women (Donnison, 1988). However, following the implementation of antenatal care during the years 1907 until 1929, the role of the midwife was restricted to the care of women who were "normal" (Oakley, 1984). In addition, the medicalisation of care and increasing trend towards hospital birth meant a decline in home birth, the traditional remit of midwives (Campbell & Macfarlane, 1995). In 1936, a local authority salaried midwifery service was introduced, following which half of the practising midwives worked for maternity homes, hospitals, or local authorities (Donnison, 1988). Although this meant further recognition of the midwife's professional status, the movement into hospital saw midwifery practice under the control of obstetricians. Within the hospital setting, obstetricians had responsibility for women and midwives simply participated in the care (Oakley, 1984; Donnison, 1988; Tew, 1995).

The introduction of the NHS also impacted on the role of the midwife (Oakley, 1984; House of Commons Health Committee, 1992). Whereas midwives had worked autonomously in the past, NHS regulations meant that if a midwife and doctor both attended a delivery, the doctor had control (Oakley, 1984). The NHS also gave women free access to maternity care and direct access to a doctor. This meant the first point of contact for pregnant women became the general practitioner, rather than the midwife. Both these factors permanently altered the midwives' control over maternity care (Oakley, 1984; House of Commons Health Committee, 1992).

The trend towards hospital birth over the next 10-20 years added to the obstetric control over midwifery practice (Pearce, 1987; Donnison, 1988). With hospital birth came an interventionist model of maternity care, which was against the midwife's philosophy and outwith her sphere of practice (Oakley, 1984; Tew, 1995). This factor, coupled with the "sharing of care" recommended by the Peel Report in 1970, eroded the role of the midwife. Complicated cases became the remit of obstetricians, while general practitioners had responsibility for "normal" cases (Pearce, 1987; Campbell & Macfarlane, 1995). As a result, the autonomous role of the midwife ceased to exist.

The shared care approach subsequently led to fragmentation of care with midwives, obstetricians and general practitioners each providing part of the woman's maternity care (Murphy-Black, 1992a; Way, 1992; Walton & Hamilton, 1995). Duplication of care as well as role occurred, with care provided by midwives often repeated by general practitioners or obstetricians. In addition, continuity of care was lost. As a consequence, midwives became increasingly frustrated with their role and lost confidence in their skills (Robinson, 1990; Bryar, 1991; Robinson, 1993).

In 1985, although 156,988 midwives were qualified to practice only 26,500 chose to do so. The main reasons for leaving the profession were low pay and lack of job satisfaction (Pearce, 1987). A study by Robinson (1993) which examined midwives' careers, found that reasons for not practising included dissatisfaction with the erosion of the midwife's role due to the involvement of medical staff, and limited opportunities to utilise the full range of midwifery skills.

The last century witnessed a vast improvement in the safety of childbirth for both mother and baby (House of Commons Health Committee, 1992; The Scottish Office Home and Health Department, 1993; Campbell & Macfarlane, 1995). With obstetric care came the development of treatments to prevent or cure diseases associated with pregnancy and childbirth (Tew, 1995). The discovery of antibiotics greatly reduced maternal mortality as a result of puerperal sepsis. In addition, both maternal and perinatal mortality was reduced by the introduction of treatments to prevent rubella and rhesus disease (Tew, 1995). However, although the medicalisation of maternity care had many advantages, it was not without cost. Childbirth ceased to be a normal social event and became instead a pathological medical condition (Oakley, 1984; Pearce, 1987; Clarke, 1993). Despite the associated benefits of obstetric care and shared care, women as well as midwives have become somewhat dissatisfied with this approach (House of Commons Health Committee, 1992).

## 2.4 CONSUMER VIEWS

Consumer dissatisfaction with aspects of shared care, and antenatal care in particular, has grown steadily from the 1950's (Oakley, 1984). Although the obstetric, interventionist model of maternity care was the "norm" around the 1950's, there were appeals for a return to more natural methods of childbirth. The consumer focus was towards pregnancy and childbirth as a social event where women were treated as individuals (Oakley, 1984). This led to the formulation of consumers groups such as the National Childbirth Trust (NCT), established in 1956.

The Trust's objectives were to improve women's knowledge about labour and delivery, and to establish classes which helped women cope with the pain of labour. This was the beginning of the natural childbirth model of care, where a successful labour and delivery was one in which the mother was in control and minimal intervention occurred (Oakley, 1984). However, the NCT was concerned with labour and delivery only and not the antenatal or postnatal periods. Therefore in 1960, the Association for Improvements in the Maternity Services (AIMS) was founded, primarily as a result of complaints about antenatal care (Oakley, 1984). Although AIMS was initially enthusiastic about technological advances in maternity care, the cost of this for mothers was recognised over time. Over a period of twenty years, the objectives of AIMS changed to resemble the natural childbirth philosophy and centred around *"the right of the mother to experience normal physiological childbirth without interference unless she wants it or there are clear indications that it is needed"* (Oakley, 1984). In 1981, AIMS' objectives included low risk women being cared for by midwives throughout antenatal, intrapartum and postnatal care, and the provision of antenatal care in the community.

The level of women's satisfaction with antenatal care has been questioned, with complaints often related to the organisation of care (Oakley, 1984; Reid & Garcia, 1989; Reid & Macmillan, 1992; House of Commons Health Committee, 1992; The Scottish Office Home and Health Department, 1993). Generally, the complaints from women have been in relation to travelling times and costs associated with attending antenatal clinics, long waiting times, uncomfortable surroundings and poor facilities, and short consultation times with doctors (Reid & Garcia, 1989; House of Commons Health Committee, 1992; Tew, 1995). A number of studies have shown that women want care in an accessible location and desire continuity of antenatal care. In addition, women want more detailed information about pregnancy and wish to be respected and treated as individuals. Also, studies have been shown that women are more satisfied when they have been given choice, and that good communication is important to them (Oakley, 1984; Reid & Garcia, 1989; Reid & Macmillan, 1992; House of Commons Health Committee, 1992; The Scottish Office Home and Health Department, 1993).

Studies have also questioned the level of women's satisfaction with intrapartum care. Concern about the interventionist style of care during labour and delivery increased around the mid 1960's and was still evident over 20 years later (Oakley, 1984; Reid & Garcia, 1989; Reid & Macmillan, 1992). Arms in 1977 described her condition after birth: *"I came out of the delivery numb from the waist to the knees, dry and sour in the mouth, flat on my back, and strapped to a metal table four feet off the ground"* (Oakley, 1984). The evidence has suggested that interventions in labour, such as episiotomy or fetal heart rate monitoring, can adversely affect women's satisfaction (Reid & Garcia, 1989; Reid & Macmillan, 1992).

As with antenatal care, women want more information during labour, particularly about procedures and interventions. Women are also concerned about the amount of control they have during labour and delivery, and express a preference for support during childbirth (Reid & Garcia, 1989; Reid & Macmillan, 1992). Some of these issues have been addressed by care providers and changes to practice made. Fathers or other supporters have been allowed to accompany women in labour, and the routine use of interventions such as enemas and pubic shaving has been reviewed (Oakley, 1984; The Scottish Office Home and Health Department, 1993).

Although less written about, the level of women's satisfaction with postnatal care has also been questioned. Studies have suggested that the interventionist style of intrapartum care can have detrimental effects on women in the postnatal period (Reid & Garcia, 1989; Reid & Macmillan, 1992). In particular, women who have interventions such as instrumental delivery or caesarean section are less satisfied with their experience and are less able to bond with their babies. In relation to postnatal care in general, women have complained of conflicting advice and lack of support by care providers (Reid & Garcia, 1989; Reid & Macmillan, 1992).

From the many studies conducted in relation to consumer views, it became evident that women wanted:

- Courteous, considerate and individual treatment
- Good care from competent care providers
- Appropriate, detailed information
- To be listened to
- Opportunities to participate in decisions about care
- Choice

- Support
- Opportunities to comment on the service.

(The Scottish Office Home and Health Department, 1993)

Despite the associated benefits of obstetric care and shared care, women were extremely unhappy with some aspects of this system and wanted a return to the normal social event of pregnancy (Oakley, 1984; Reid & Garcia, 1989; Reid & Macmillan, 1992; House of Commons Health Committee, 1992). The need for change was clear and the time for change was right.

## **2.5 THE NEED FOR CHANGE**

Consumer concerns were one stimulus behind the recent House of Commons Health Committee Review of the Maternity services (1992). The Health Committee, chaired by Winterton, was established in 1991 and gathered information from a variety of sources on existing maternity care provision. At the outset, the Committee believed it was possible for some areas of maternity care to be unsatisfactory, despite good outcomes in the form of a healthy mother and baby (House of Commons Health Committee, 1992).

The Committee collected information from care providers throughout the maternity services, including experts in midwifery, obstetrics and paediatrics. Information about the consumer point of view was supplied by groups such as the NCT, AIMS and The Maternity Alliance, as well as from individual women. In addition, research evidence on women's views was considered. The Committee also visited a variety of maternity units throughout the United Kingdom.

One of the Committee's first conclusions was that the policy of total hospital confinement was not justified on the grounds of safety. They concluded:

“ *it is no longer acceptable that the pattern of maternity care provision should be driven by presumptions about the acceptability of a medical model of care based on unproven assertions.* ”

(House of Commons Health Committee, 1992)

From the evidence collected the Committee identified three common themes which described what women wanted from the maternity service:

- The need for continuity of care
- The desire for choice of care and place of delivery
- The right to control over their own bodies at all stages of pregnancy and birth.

(House of Commons Health Committee, 1992)

In relation to continuity of care, the Committee concluded women had a strong desire for continuity of care and that women viewed midwives as *"the group best placed and equipped to provide this"*. The Committee concluded that women wanted more choice in the type of maternity care they received, and that *"the current structure of the maternity services frustrates, rather than facilitates, those who wish to exercise this choice"*. The Committee felt women required unbiased and appropriate information to enable them to make informed choices, something which was often denied. They concluded women had little choice about place of birth and that this was not in accordance with women's wishes.

With regard to interventions such as episiotomy and instrumental delivery, the Committee recommended that these should cease to be carried out routinely and that women should be given a choice on the basis of available scientific evidence. In relation to control, the Committee concluded "*the experience of the hospital environment too often deters women from asserting control over their own bodies*".

The evidence from the professionals suggested that although they advocated partnership in care, the importance of continuity of care and giving women control was missed. The Committee believed "*the discussions we have heard about the case for providing continuity of care and the enabling of women to control over their own pregnancies and deliveries have been far too heavily influenced by territorial disputes between the professionals concerned for control of the women they are supposed to be helping*".

Recommendations for the future provision of maternity care included:

- A radical re-appraisal of the current system of shared care with a presumption in favour of its abandonment
- Abandonment of the closure of general practitioner maternity units on the grounds of safety
- The development of midwife-managed units
- Provision of a more homely environment within consultant obstetric units.

(House of Commons Health Committee, 1992)

In relation to the professions, the Committee recommended that midwives' status as professionals should be acknowledged. Midwives should have responsibility for a caseload, be given the opportunity to establish midwife-managed units, and should have the right to admit women to hospital. The Committee suggested the current system of remuneration for general practitioners should be abandoned and redesigned, and that they should be encouraged to facilitate women's choice particularly in relation to home birth and midwife only care.

The Committee's final conclusions revolved around women as the focus of care. They recommended provision should be made for continuity of care, choice in relation to care, a community based service, and partnership and co-operation between women and care providers (as well as within the professions).

In response to the House of Commons Health Committee Report, an Expert Group was set-up to identify ways of meeting the Committee's recommendations (Department of Health, 1993; Walton & Hamilton, 1995). The Group, chaired by Baroness Cumberlege, included representatives from midwifery, obstetrics and gynaecology, general practice, paediatrics, management, counselling services and journalism. The Group visited a range of maternity units and midwifery schemes and collected information from a variety of organisations, professional groups and individuals. A major conference was held in London which was attended by 400 people. In addition, the Group commissioned two studies which identified women's views of the maternity services (Department of Health, 1993). The Group completed its work after a period of nine months and produced the Changing Childbirth Report in 1993 (Department of Health, 1993).

The Report identified key components and principles of care, and included guidelines for the future provision of maternity services in England and Wales (Department of Health, 1993). The Group believed the first principle was that maternity care should be woman centred. In relation to this, they identified several key components of care which included:

- Provision of the service to suit women's needs
- Involvement of the woman and her partner in care planning
- Provision of a named midwife for each woman
- The lead professional an obstetrician in complicated cases
- Community based antenatal care
- Respect of the woman's right to choice
- Continuity of care.

(Department of Health, 1993)

Other principles highlighted, which the Group felt underpinned maternity care, were **appropriate care**, **accessible care**, and **effective care** (Department of Health, 1993; Walton & Hamilton, 1995).

**Appropriate care:** The Expert Group recommended that women should be given information to enable them to be involved in making decisions about their care. To facilitate this women should carry their own case-records if they so wished. The Group also recommended that women should have choice regarding the professional who leads their care, and that all professionals should have access to maternity beds. In addition, all women should know the name of their lead care provider. Antenatal care should be tailored to women's needs with greater emphasis on communication and parentcraft. In relation to place of birth, the Group stated that all women should receive unbiased advice and have the right to choose where their baby would be born.

Care in labour should be flexible, accommodating women's wishes as much as possible, and the use of Birthplans was recommended. Postnatal care should be tailored to individual women's needs (Department of Health, 1993; Walton & Hamilton, 1995).

**Accessible care:** The Group emphasised that maternity services should be based on a clear understanding of the local population's social, health and cultural needs. Consumers should be actively involved in the planning of services through representative groups such as Local Health Councils and Maternity Services Liaison Committees. Again, highlighting the need for information, the Group stated that this should be provided in a form both appropriate and accessible to women. The Report urged purchasers and providers to develop strategies to ensure accessible services for women who failed to attend for care (Department of Health, 1993; Walton & Hamilton, 1995).

**Effective care:** To ensure an effective and efficient service the Report urged purchasers and providers to develop strategic plans for the following five years. A definite shift towards community based care was recommended. Consumer views should be monitored and services updated to meet women's needs as an ongoing process. The Group considered clinical practice should be research based and audited on a regular basis. In addition, services should be cost effective and alternative models of care should be assessed locally in relation to this (Department of Health, 1993; Walton & Hamilton, 1995).

The Group realised that its recommendations and directives represented a major change in the pattern of maternity care. Due to this the Report not only suggested changes, but contained specific targets for purchasers and providers of the maternity services as well as time limits for their achievement.

Ten indicators of success were provided so that the extent to which the Group's recommendations were implemented could be measured (Department of Health, 1993; Walton & Hamilton, 1995). The Group recommended that the following changes should be in place by 1997:

- All women entitled to carry their case-records
- A named midwife for every women to ensure continuity of care
- The midwife should be the lead care provider for at least 30% of women
- The woman's lead professional known to her
- 75% of women to know the person who cared for them in labour
- Midwives with direct access to maternity beds
- 30% of women delivered in maternity units managed by midwives
- Number of antenatal visits reviewed for healthy women
- Paramedics able to support midwives in emergency situations
- Information available for women on their local services.

(Department of Health, 1993)

Since these changes were only relevant in England and Wales, The Scottish Office Home and Health Department produced a policy document - Provision of Maternity Services in Scotland in 1993 (The Scottish Office Home and Health Department, 1993). The Report was the work of a Departmental Policy Review Group, which had the remit of formulating a policy structure to aid purchasers and providers plan future maternity service provision. The Departmental Group was chaired by MacKay (Health Policy and Public Health Directorate) and included representatives from midwifery, nursing, medicine, public health, economics and management.

## Policy Review

The fundamental task of the Group was to decide the types of maternity care Health Boards throughout Scotland should aim to provide. In doing so, the Group balanced the safety of mother and child with a service which recognised a woman's right to choice, as well as less medicalised care for low risk women (The Scottish Office Home and Health Department, 1993). Ultimately, the Report informed purchasers and providers about the options for maternity care available, as well as developments in services and examples of good practice. The Report encouraged informed choice, meeting the needs of mothers, and efficiency gains (The Scottish Office Home and Health Department, 1993).

The Policy Review Group overviewed existing maternity services and described new models of care which had been implemented. Examples of these were team midwifery schemes and midwife managed initiatives, including the Midwifery Development Unit at Glasgow Royal Maternity Hospital. Consumer's views were considered, and similar to the House of Commons Health Committee Report (1992), the Group identified the key issues as continuity of care and informed choice (The Scottish Office Home and Health Department, 1993).

The Report described a system of care which incorporated women's needs, as well as issues of safety for mother and baby. Included in this system of care, Health Boards were to:

- Devise models whereby more women were given the options of DOMINO delivery (Domicillary in and out), home birth and early postnatal discharge
- Incorporate continuity of care
- Provide a homely environment for hospital births, and antenatal and postnatal care near to women's homes
- Give midwives opportunities to provide care for low risk women

- Ensure women received real choice in relation to care
- Give women opportunities to see a consultant at least once during pregnancy (regardless of choice of place of birth).

(The Scottish Office Home and Health Department, 1993)

To achieve the system of care described, the Policy Review Group made a number of recommendations. In order to encourage collaboration, the differing roles of midwives, obstetricians and general practitioners should be recognised. To enable women to make informed choice they should be given sufficient information and where possible women's preferences should be respected. Also, to encourage women to participate in making decisions about care, communication between women and care providers should be improved. The Group suggested that examples of good practice should be considered, particularly in relation to less medicalised care. Also, subject to satisfactory evaluation the development of midwife-managed units should continue. In relation to this, the Group recommended that effective back-up services should be available for home birth, midwife-managed care and general practitioner maternity care (The Scottish Office Home and Health Department, 1993).

The Report indicated that Health Boards should have strategies in place to achieve these changes by 1994, and that monitoring of their progress should be an ongoing process. The Policy Review Group concluded: *"Once mothers, and purchasers and providers, have a better awareness of what is available and what can be provided, we expect this report to act as a much needed catalyst to some movement towards more community based care"*.

These three government Reports highlighted the need for change and provided guidance on how to achieve a maternity service which was sensitive to women's needs. In addition, they presented midwives with an opportunity to reclaim their central role in the provision of maternity care. The Reports supported reversal of the medical model of care which had led to a degree of dissatisfaction among women and midwives. From these Reports, three key features emerged which were to form the basis for future maternity services.

These features were:

- Continuity of care
- Individual, informed care planning
- Information and choice.

## **2.6 CONTINUITY OF CARE**

Since the early 1980's, a number of initiatives have been implemented throughout the United Kingdom with the aim of providing continuity of care (Hooton, 1984; Cooper, 1984; Flint, Poulengeris & Grant, 1989; McIntosh, 1989; Frohlich, 1989; Morris-Thomson, 1989; Heseltine, 1991; Murphy-Black, 1992b; Wraight, Ball, Seccombe & Stock, 1993; Keats, 1993; Nightingale, 1994). However, there is little evidence about whether these initiatives were successful in achieving their goals (Murphy-Black, 1992c; Wraight et al, 1993). Although there has been some debate as to what is meant by continuity of care, most of the initiatives offer continuity of care in the form of continuity of *carer* (Murphy-Black, 1992c; Flint, 1993; Walton & Hamilton, 1995). To facilitate this, care is usually provided by midwives working in teams of four or more (Flint, 1988; Wraight et al, 1993).

Three main types of midwifery teams have been identified. Those which provide hospital based care only, those which provide community based care only, and those which provide care integrated between hospital and community (Wraight et al, 1993; Stock & Wraight, 1993).

In 1992, 51 percent of maternity units in Scotland reported either planning or having established team midwifery schemes (Murphy-Black, 1992a). In addition, 37 percent of units in England and Wales reported having implemented similar schemes in 1993 (Wraight et al, 1993). However, the Mapping Team Midwifery Report identified that only one third of the team midwifery schemes established in England and Wales in the last five years had been evaluated (Wraight et al, 1993). In addition, although a common aim of the team approach to care is to provide continuity of care for women, few schemes had actually achieved this (Wraight et al, 1993). The Report suggested that some teams were in fact too large to impact on continuity of care. Although the teams varied in size, the average number of midwives per team was 11 to 13, with some teams including as many as 23 midwives (Wraight et al, 1993).

One of the most widely known initiatives is the "*Know your midwife*" scheme which was established in St George's Hospital, South London in 1983. This scheme formed the basis for many other initiatives related to continuity of care (Flint, 1988; Flint et al, 1989). In this model, four midwives provided hospital based and community based care for approximately 250 low risk women per annum. The midwives provided the majority of antenatal care, with women routinely seen by an obstetrician at booking, 36 weeks gestation and 41 weeks gestation (if required). Intrapartum care was provided by a member of the team through an "on call system", and postnatal care was the remit of the entire team.

The effect of this scheme was evaluated using a randomised controlled trial which compared team midwifery care with shared care. The trial was conducted primarily to evaluate whether continuity of care was improved in the new type of care and to assess women's satisfaction. In addition, the study compared a small number of clinical outcomes as well as the cost-effectiveness of both types of care. Results from the evaluation demonstrated that the "*Know your midwife*" scheme did enhance continuity of care (Flint et al, 1989; Flint, 1991). In addition, women were more satisfied with their care and the rate of obstetric intervention was reduced. Clinical outcomes were largely similar for both groups, and the "*Know your midwife*" scheme was found to be cost effective (Flint, 1988; Flint et al, 1989; Flint, 1991).

However, in this scheme the midwives provided intrapartum care through an "on call" system, which meant they had to be available to care for women when they were rostered off duty. In order to provide continuity of care in this way, the midwives occasionally worked long hours and without any formal back-up (Flint et al, 1989). Obviously, this has implications for the midwives' personal lives as well as for safety and therefore must be taken into account (Midwifery Development Unit, 1995b).

A similar model of team midwifery involving three teams was established in 1985 in the Taff Ely/Rhondda Valley area of South Wales (Keats, 1993; Stock & Wraight, 1993). Each team comprised of seven midwives who provided care for approximately 200 to 300 women per annum who lived in the area served by the midwives' community base. The midwives provided antenatal care in a variety of settings and were responsible for postnatal care, both in hospital and at home. Intrapartum care was provided by a member of the team through an "on call" roster, and both hospital and home birth were offered.

Evaluation of this model demonstrated a range of benefits, including increased satisfaction for mothers and midwives (Keats, 1993; Flint, 1993). However, like the "*Know your midwife*" scheme, this model involved midwives being "on call" which has implications for the midwives personally, as well as for safety and cost (Midwifery Development Unit, 1995b).

A slightly different model of team midwifery has operated in the City Maternity Unit in Nottingham since 1984. Again one of the objectives of the scheme was to improve continuity of care (Hooton, 1984; McIntosh, 1989). However, unlike the schemes described earlier, this model was hospital based. Five teams of midwives operated, each attached to a consultant obstetrician and working from a designated ward within the hospital. Each team of midwives provided antenatal, intrapartum and postnatal care within the hospital for women booked with their associated consultant. The midwives followed a duty roster which involved four months based in the ward area (during which they delivered antenatal and postnatal care), followed by four months based in the labour suite (McIntosh, 1989). When working in the labour suite the midwives were encouraged to care for women within their team, although this was not always possible. Although small studies have been conducted by team midwives themselves, there is no evidence of the more formal evaluation which had been planned (McIntosh, 1989).

In this scheme the teams aimed to provide continuity of care during hospital based care. However, community based antenatal and postnatal care was provided by midwives who were not involved in the team scheme, therefore this has implications for overall continuity of care (McIntosh, 1989).

This model is very similar to another scheme in Nottingham, based at University Hospital and established in 1983 (Cooper, 1984). In this scheme, midwives worked in teams of 10 and each team was linked to a specific consultant. The teams provided hospital based care for all women booked with their associated consultant. This included antenatal care (within the antenatal clinic at the hospital), intrapartum care, and postnatal care (within the postnatal ward at the hospital). To facilitate continuity of care, two team midwives were permanently based in the labour suite, while the other eight midwives worked on a six weekly rotational basis between the labour suite and the postnatal ward. Antenatal care was provided by the midwives working in the postnatal ward in co-operation with the two permanent labour suite midwives. However, similar to the previous model, community based antenatal and postnatal care was provided by community midwives who were distinct from the teams. Again, this reduces overall continuity of care. Although planned, there is no information on evaluation of this scheme (Cooper, 1984).

The midwife-managed programme of care implemented within the Midwifery Development Unit was distinct from the other schemes in operation throughout the country. Each of the 20 midwives in the Midwifery Development Unit operated as a named midwife, with responsibility for a caseload of around 29 women (Midwifery Development Unit, 1995a). However, in the other schemes, often all team members shared responsibility for a large caseload of around 200-400 women (McIntosh, 1989; Flint, 1993; Stock & Wraight, 1993; Keats 1993). In addition, within the Midwifery Development Unit, midwives provided hospital based and community based care for women from booking until discharge to the health visitor in the postnatal period (McGinley et al, 1995). However, in some of the other schemes community based care was not offered (Cooper, 1984; Hooton, 1984; McIntosh, 1989).

The number of midwives participating in team schemes has often been described (Flint, 1993; Stock & Wraight, 1993). However, because of the lack of evaluation, there is little information on the level of continuity of care achieved by these schemes. In addition, in all of the schemes reviewed, no service specifications or midwifery standards were described in which the number of care providers women could expect to see was defined. Also, although some schemes reported that the number of carers was reduced following implementation of the team, there was no comparison against a defined standard for continuity of care (Flint et al, 1989; Heseltine, 1991; Stock & Wraight, 1993).

## **2.7 INDIVIDUAL INFORMED CARE PLANNING**

Another method of overcoming fragmented care and improving continuity of care is by the use of individual care plans. Their purpose is to encourage women to become partners in care by participation in care planning, and to facilitate continuity of care by ensuring women's needs are met (The Scottish Office Home and Health Department, 1993). Indeed, one definition of continuity of care has been described as continuity of *caring*, which involves making the woman the focus of care (Murphy-Black, 1992c). Client-held records have been suggested as a method of achieving woman centred care, where all care providers are aware of the woman's wishes as well as the plan for care (Department of Health, 1993; Walton & Hamilton, 1995).

In a study of systems of midwifery care in Scotland conducted in 1992, 88 percent of units reported using individualised care plans (Murphy-Black, 1992a). Most of the units used the care plan throughout the antenatal, intrapartum and postnatal periods and updated the plan as an ongoing process. However, the units had quite differing views as to the purpose of the care plan. Some units considered the care plan as a method of documenting and solving problems, while others saw the care plan as an instrument for recording women's preferences (Murphy-Black, 1992a). Although over 60 percent of the units surveyed were either conducting or planning evaluation of their care plan, there is little information on the success of care plans in general. One evaluation, conducted by Bryar, aimed to measure the extent to which a new system of individualised care had been introduced within a maternity unit (Bryar, 1991).

Specific objectives of Bryar' project included the introduction of midwifery care plans, and the improvement of communication between users and providers of the service. Bryar concentrated on measuring the change in midwifery practice, as well as consumers and care providers views of the individualised approach to care. In addition, the use of the care plans was observed. Bryar found staff rarely consulted or completed the care plans while delivering care and seldom made use of the care plan to facilitate *care planning* (Bryar, 1991). Although one of the objectives of the project was to improve communication between women and staff, the care plan was not intended for use by the women. This was not unusual, as care plans were generally designed for use exclusively by midwives and other care providers, and held in the hospital along with other maternal records (Murphy-Black, 1992a). There are however, some exceptions to this.

Morris-Thomson (1992) described a care plan which contained a Birthplan and de-briefing section, and was carried by the woman. Another exception is the Birthplan, a document on which women record specific requests and preferences for care in relation to labour and delivery (Murphy-Black, 1992a; Murphy-Black, 1992b; Fawdry, 1994). Generally the Birthplan is completed by the woman, held by the woman and given to care providers by the woman on admission in labour. The only other record routinely carried by women is the co-operation card or "shared care card" as it is commonly known.

The co-operation card was introduced in 1956 with the aim of improving communication and liaison between care providers, and although national issue was discontinued in 1991 it continues to survive in a variety of forms (Elbourne, Richardson, Chalmers, Waterhouse & Holt, 1987; Fawdry, 1994). Although the card is held by the woman she simply acts as a messenger, transporting the shared care card between care givers. Generally the woman's input is not required and the card contains midwifery and medical abbreviations which may be meaningless to her. However, efforts have been made in the past to assess the feasibility of women carrying and having ownership of their maternity case-records (Lovell, Zander, James, Foot, Swan & Reynolds, 1986; Elbourne et al, 1987; West, 1994).

The two main studies in the area were conducted as randomised controlled trials in the late 1980's (Lovell et al, 1986, Elbourne et al, 1987). Although the studies were carried out at around the same time and used similar methodologies, the geographical settings were completely different. The first trial was conducted in the urban setting of St Thomas' Hospital London, and compared the experiences of 246 women randomly allocated either to hold their case-records or to carry the traditional co-operation card (Lovell et al, 1986). In this study women held their case-records during the antenatal period only.

The second evaluation was carried out in the rural setting of West Berkshire, with women attending a peripheral antenatal clinic situated in Newbury (Elbourne et al, 1987). This study compared 290 women who had either carried their case-records during pregnancy, labour and in the postnatal period, or had held the co-operation card only.

Both of these studies had similar findings despite the differing settings. There appeared to be no harmful effects associated with women carrying their own case-records. Indeed, women felt more in control of their care and felt that it was easier to communicate with their care providers (Elbourne et al, 1987). In addition, women who carried their case-records were more likely to wish a similar type of record in the future. Staff in both units had expressed the worry that case-records would be misplaced by the women, however, this fear was unfounded. In the St Thomas' evaluation, case-records were more likely to be available when carried by the women (Lovell et al, 1986). While both of these studies evaluated a form of client-held record, neither mentioned the inclusion or evaluation of a care plan.

Although not evaluated, a client-held record with a separate Birthplan was developed over several years at the Department of Obstetrics and Gynaecology, within Milton Keynes General Hospital (Fawdry, 1994). Similar to the practice at St Thomas', this record was carried by women during the antenatal period and remained in the hospital thereafter. Since the actual record did not include a care plan, additional sections were devised to accommodate the woman's preferences for labour and delivery, as well as details of postnatal care. Although these sections were transported along with the records, they remained separate and were kept by the woman at all times. Since there is no information on evaluation, women's experiences of the sections designated for them are unknown.

Although there has been little evaluation of client-held records overall, the available evidence suggests they are popular with women. In addition, recent government reports have highlighted the need for maternity care tailored to women's needs and have advocated the use of client-held case-records (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993). The Changing Childbirth Report has directed that all women should be given the opportunity to carry their maternity records, if that is what they want (Department of Health, 1993). The Report on the Provision of Maternity Services in Scotland included a similar recommendation (The Scottish Office Home and Health Department, 1993). In addition, the CRAG/SCOTMEG Working Group on Maternity Services (1995) has recently produced a document describing a best practice model of antenatal care which includes a client-held maternity record designed for use by all professionals.

## **2.8 INFORMATION AND CHOICE**

The importance of offering women choice in relation to their care has been highlighted by recent government reports (House of Commons Health Committee, 1992; The Scottish Office Home and Health Department, 1993). Indeed, the Changing Childbirth Report was based on the belief that women should have choice in the type of care they receive and that they should have control over the process (Department of Health, 1993). The need to provide women with appropriate information, to enable them to make informed choices in relation to care, has also been stressed (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993).

The Changing Childbirth Report has suggested that only by facilitating informed choice will women actually be in control (Department of Health, 1993). Two relatively recent studies specifically examined women's views in relation to information giving within the maternity services.

A large postal survey of 1500 women throughout ten geographical areas in England was reported by Jacoby in 1988. The women were randomly selected and had delivered approximately four months previously. When primigravid women were asked about the most helpful source of information for them, only a quarter of the women reported professional sources, with over 40 percent stating friends or relatives. In addition, antenatal parenthood classes were rarely reported as the most useful information source by primigravid women. Overall, around one fifth of women reported either not being given enough information, not receiving appropriate information, or finding it difficult to discuss or obtain information (Jacoby, 1988).

Another study by Flessig in 1993 reported similar results. Around 1500 women randomly selected from 20 districts in England and Wales were surveyed to evaluate the information given to them during the intrapartum period. Approximately one fifth of women reported receiving less information than they would have liked. Women reported wanting more information in relation to the progress of labour as well as procedures, such as instrumental delivery and caesarean section. Similarly, women who had experienced caesarean section or other forms of intervention were less likely to be satisfied with the amount of information they were given. Overall, women who were satisfied with the information given during the intrapartum period were more likely to have been satisfied with the way their labour was managed (Flessig, 1993).

Both of these studies highlighted the need for effective communication between women and their care providers. In particular, Flessig advocated the use of Birthplans to encourage discussion and also suggested a de-briefing session, particularly following emergency procedures (Flessig, 1993). These ideas were featured in the Midwifery Development Unit service specification related to individual informed care planning, with one of the aims of the Care Plan to facilitate information and choice (Midwifery Development Unit, 1995b). The importance of good communication between women and their care providers has also been emphasised in recent government Reports (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993). These Reports have suggested that effective systems for providing information are required if women are to participate in the decision making process.

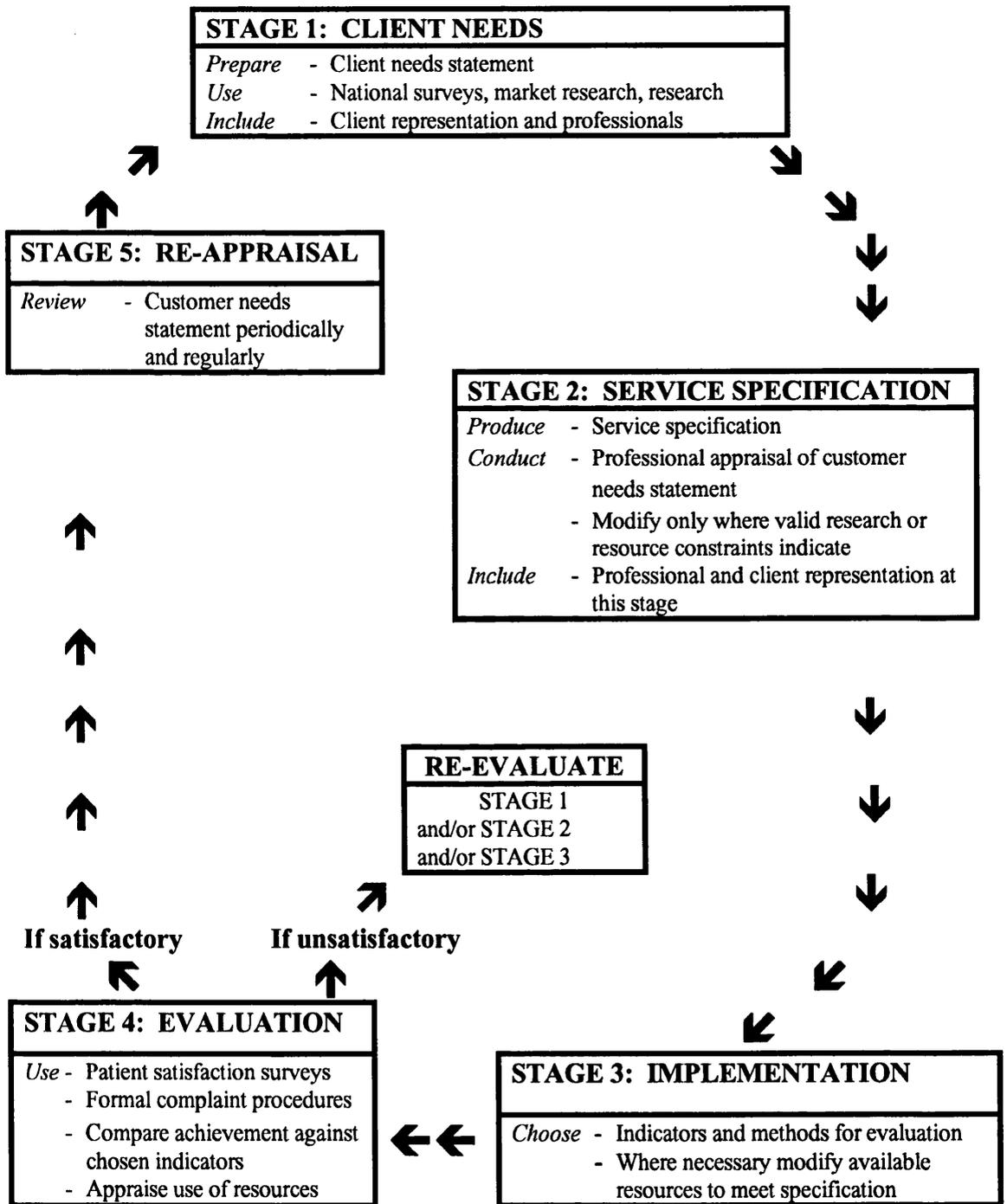
The need for evaluation and audit has also been highlighted, particularly where changes are implemented or new practices are introduced (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993). The establishment of the Midwifery Development Unit at Glasgow Royal Maternity Hospital represented a major change to midwifery practice. Although established prior to recent government initiatives, the Unit aimed to meet local women's expressed needs. An new midwife-managed care programme was generated to meet those needs using the Quality Assurance Model for Midwifery - QAMID (World Health Organisation, 1991; McGinley, 1992; Jenkins, 1994; McGinley et al, 1995).

## Chapter 3: QAMID

### 3.1 QAMID

In June 1991, the World Health Organisation (WHO) held a workshop on Quality Assurance in Midwifery (World Health Organisation, 1991). The aim of the workshop was to implement the WHO "Health for All Strategy" which encouraged member states to develop effective measures for ensuring quality patient care. Sixteen representatives from eight European countries participated. The Head of Midwifery Services at Glasgow Royal Maternity Hospital represented Scotland at this workshop. The participants reviewed previous work in relation to quality assurance and discussed concepts and models, such as those by Donabedin and Kitson (World Health Organisation, 1991; McGinley, 1992; McGinley et al, 1995). While these ideas laid the foundations for measuring quality in health care, the participants recognised that they were all primarily driven by the professional view and therefore lacked consumer orientation. Following discussion, the participants combined the relevant aspects of the existing concepts and models and developed a new, consumer driven Quality Assurance Model for Midwifery - QAMID. Within the health care system, this model was unique in that it required consumer involvement at the fundamental level (World Health Organisation, 1991). QAMID has five stages (Figure 1).

**Figure 1: QAMID - A Quality Assurance Model for Midwifery  
World Health Organisation, 1991**



**Stage 1 - Client needs:** The clients identify their needs, which are considered and discussed in a small group which includes representatives of both users and providers of the service.

**Stage 2 - Service specifications:** Service specifications are statements describing the goals of the programme. These are prepared taking account of clients needs, professional judgement, research based evidence and resource implications.

**Stage 3 - Implementation:** The service specifications are implemented and available resources are modified or re-organised, if required, to meet them.

**Stage 4 - Evaluation:** Evaluation is carried out to measure how well the service specifications are achieved. Methods such as client satisfaction surveys, interviews and review of case-records are used.

**Stage 5 - Re-appraisal:** If the results are satisfactory, client needs are reviewed and updated regularly. If the results are unsatisfactory, clients needs as well as the service specifications are reviewed and re-implemented, following which re-evaluation is carried out.

The Midwifery Development Unit provided an ideal setting to employ QAMID for two reasons.

1. With consumer participation, a midwife-managed care programme could be developed which would meet women's expressed needs.
2. QAMID was up to that point a theoretical model which had yet to be tested in practice.

## **3.2 QAMID IN THE MDU**

### **3.2.1 Stage 1: Identifying client needs**

Within the Midwifery Development Unit a working group was established which included: the Head of Midwifery Services as a facilitator, consumer representation from the National Childbirth Trust and the Greater Glasgow Health Council, and two midwives who were involved in providing the new programme of care (McGinley, 1992; McGinley et al, 1995). A series of meetings were held during which the group identified the needs of local women. Recent studies concerning consumers' views of the maternity services, including the National Childbirth Trust's Maternity Services Survey (1992) and work conducted by Melia et al (1991), were discussed. In addition, findings from the recent House of Commons Health Committee Report on Maternity Services (1992) were considered. Evidence from these sources suggested that women wanted continuity of care, choice in relation to their care and more control over their care.

While consumer representation was essential at this stage, there was some debate as to how closely pressure groups such as the Natural Childbirth Trust voiced the opinions of the local population. To discover if local women expressed similar needs to those identified nationally as well as those views asserted by the National Childbirth Trust, local research was conducted by the Midwifery Development Unit research team who were independent from the working group (McGinley et al, 1995). Two questionnaires were adapted from the Office of Population Censuses and Surveys Manual - Women's Experience of Maternity Care (Mason, 1980).

An antenatal questionnaire was sent to 10 women who were 35 weeks gestation on the date selected for postage of the questionnaire. Gestation was attributed according to the hospital booking register. A postnatal questionnaire was sent to seven women who had delivered a live baby 8 weeks previously according to the hospital birth register. Both questionnaires examined what was important to women in relation to their care. In addition, a convenience sample of 15 women were interviewed on the normal dependency wards of the hospital to gain more qualitative information on what was important to them. From the information gathered, five client needs were identified:

- Continuity of carer and care
- Individual informed Care Planning
- Information and choice
- Support and information
- Family oriented service.

(McGinley, 1992; McGinley et al, 1995)

These findings confirmed that local women expressed similar needs to those reported nationally. The working group then distilled the five client needs into three service specifications (McGinley, 1992; McGinley et al, 1995).

### **3.2.2 Stage 2: Service specification**

To ensure that acceptable, achievable service specifications were written, the group had to consider several factors. As well as client needs, the group took account of professional judgement and research based evidence. In addition, the resource and practical implications involved in meeting client needs were considered (McGinley, 1992; McGinley et al, 1995).

An example of where this proved invaluable, was when the consumers in the group defined continuity of carer throughout the antenatal, intrapartum and postnatal periods as one or two midwives providing care. The midwives in the group considered this would have significant resource implications. In order to achieve one or two carers as defined, each midwife would have to be available on a 24 hour basis. This would require midwives to be "on call" when they were off duty, necessitating extra duty payment and thus impacting on the salary budget within the hospital. In addition, when a midwife had been "called out" overnight, for example to deliver a client, she was unavailable the following day to provide care for the remainder of her caseload. Since care would then be provided by a different midwife, this affected continuity of carer for a number of women. After negotiation, the group agreed one or two midwives was an unrealistic standard and a compromise was reached.

Following this practice of considering client needs, alongside what was achievable and acceptable within the service, three service specifications were generated by the group. These were defined as:

**Continuity of carer:** *Healthy women being cared for by the MDU midwives can expect to be cared for by a named midwife and three associate midwives from booking through to transfer to the health visitor postnatally.*

**Individual informed Care Planning:** *The MDU will facilitate individual informed Care Planning. Each woman will hold her own Midwifery Care Plan which will contain clinical progress notes as well as her personal choices for care antenatally, postnatally as well as her Birthplan. During the final episode of care the midwife will evaluate the Care Plan with the woman prior to it being returned to the case-record.*

**Information and choice:** *Every woman being care for in the MDU will receive a Basic Information Pack. In addition, there will be an ongoing assessment of specific information requirements which will be tailored to the individual woman's circumstances. The midwife will allow time to discuss information and choice with each woman.*

(McGinley, 1992; McGinley et al, 1995)

### **3.2.3 Stage 3: Implementation**

After agreeing the service specifications, a new midwife-managed care programme was developed incorporating the standards of care described (McGinley, 1992; McGinley et al, 1995). This was taken forward by the midwifery management team at Glasgow Royal Maternity Hospital in consultation with the midwives who provided the care.

The care programme aimed to be "woman-centred" with the emphasis on partnership in care, and a philosophy of appropriate intervention was adopted (Midwifery Development Unit, 1995b). Antenatal care was provided at a venue which suited the individual woman. This was either the antenatal clinic at the hospital, the antenatal clinic within a peripheral health centre, or in the woman's home. Three birth rooms and a sitting room within the existing labour suite at Glasgow Royal Maternity Hospital were designated for Midwifery Development Unit use. These rooms were decorated to be more home-like, with essential equipment available but mostly hidden from view so that women could deliver in comfortable and homely surroundings. Women were encouraged to complete their Birthplan and to have a partner, relative or friend with them for support during labour (if they wanted).

Hospital based postnatal care was provided in a small ward, which was decorated to look less clinical and encouraged a relaxed atmosphere. Early discharge from hospital into the family environment was planned in the antenatal period, in consultation with women. Postnatal care in the community was tailored to women's requirements, taking account of the midwife's professional judgement.

### **Continuity of carer**

In relation to continuity of carer, the service specification stated that care would be provided by a named midwife and three associated midwives, from booking until discharge to the health visitor postnatally (McGinley, 1992; McGinley et al, 1995). Each named midwife had her own caseload of women, all at different stages of pregnancy. The named midwife was the main care provider, looking after the woman during planned episodes of care such as in the antenatal and postnatal periods. The associate midwives were involved as required, for example during labour which was an unplanned event (McGinley, 1992; Midwifery Development Unit, 1995b).

This was distinct from the traditional shared care model, where women are cared for by different midwives at each stage of pregnancy and in each care area (i.e. antenatal clinic, labour ward, postnatal ward and community) (McGinley, 1992). In order to achieve the service specification, the same midwives needed to be available at each stage of pregnancy and in each clinical area, therefore the midwives altered their working pattern.

Normally, midwives work 37½ hours per week and practise within one clinical care area, such as the antenatal clinic or the labour ward. To achieve continuity of carer within the Midwifery Development Unit, each midwife needed to work within all clinical areas rather than only one. To facilitate this, a new deployment model was developed which allowed the midwives to plan where they worked in order to accommodate their caseload (McGinley et al, 1995; Midwifery Development Unit, 1995b). This model was based on a 75 hour fortnight with the midwives spending 48 percent of their time in labour ward, 30 percent in the postnatal ward, 17 percent in the community, and five percent in the antenatal clinic. The midwives provided an agreed commitment to each clinical area using a system of self-rostering (McGinley et al, 1995; Midwifery Development Unit, 1995b).

To further enhance continuity of carer, the midwives aimed to avoid duplication of care in the antenatal period, therefore the antenatal care programme was planned around eight or nine visits at critical stages of pregnancy (McGinley et al, 1995; Midwifery Development Unit, 1995b). These visits were conducted either at hospital, in community health centres or in women's homes. In addition, when rostered to the labour ward the midwives opted to work 12 hour shifts (rather than 8 hour) to reduce the number of midwives involved in care during the intrapartum period (McGinley et al, 1995; Midwifery Development Unit, 1995b).

### **Individual informed care planning**

The second service specification revolved around individualised, informed care planning and was facilitated by a client-held Care Plan (McGinley, 1992; McGinley et al, 1995).

In order to implement individual, informed care planning, the midwives and consumers designed a new Care Plan, as client-held documents were not used within Glasgow Royal Maternity Hospital. The purpose of the Care Plan was to encourage two way communication between women and their care providers (McGinley, 1992; McGinley et al, 1995; Midwifery Development Unit, 1995b). The aims were to encourage women to participate in planning care, allow them access to information, and enable them to record any preferences and personal choices for care. In addition, the Care Plan included midwifery progress notes and a section for de-briefing at the end of care.

An A5 size booklet was developed, which had a white laminated cover for protection and was entitled "*Midwifery Development Unit Care Plan*". Contents included: a personal profile, family history, maternity and well woman history, health information and parenthood education, delivery summary, as well as mother and baby Care Plans. Four pages were designated for women to use for recording preferences for care. These were titled: Pregnancy and Birthplan; Pregnancy plan; Birthplan; and Postnatal plan. A fifth page called "Talkback" was incorporated for women to record their views on care as part of the de-briefing session (Midwifery Development Unit, 1995b). The women carried the Care Plan and were encouraged to bring it to each visit with the midwives.

### **Information and choice**

The third Midwifery Development Unit service specification was in relation to information and choice (McGinley, 1992; McGinley et al, 1995). All women who received midwife-managed care were to be given a basic Information Pack, with information thereafter tailored to the woman's needs.

In order to implement information and choice, the midwives and consumers agreed which publications were to be contained in the basic pack. After discussion, the following were included: the Pregnancy Book by the Health Education Board for Scotland; information on breast feeding from the National Childbirth Trust; advice on eating during pregnancy; and the Hospital Information Booklet. All of the information was contained in a brown folder labelled "*MDU Information Pack*".

To deliver care as described in the service specification, the midwives ensured sufficient time for discussion of information requirements with each woman. In the antenatal period, each midwife was allocated one three hour session within the hospital antenatal clinic where she provided care for her clients (McGinley et al, 1995; Midwifery Development Unit, 1995b). In addition, approximately one third of the midwives' time was allocated to community based care so that information and options for care could be discussed in women's homes.

### **3.2.4 Stages 4 and 5: Evaluation and Re-appraisal**

Following implementation of the midwife-managed care programme, an evaluation was conducted to identify whether the service specifications were achieved. This evaluation was carried out by the author and the remaining chapters describe the methodology used, report the results, and discuss the findings. To complete the re-appraisal stage of QAMID, results from the evaluation were presented to the group who generated the service specifications and then to the midwifery team. This stage was facilitated by the author and is described in detail in the discussion.

# Chapter 4: *The RCT*

## 4.1 INTRODUCTION

The third objective of the Midwifery Development Unit project was to monitor and evaluate the unit (McGinley et al, 1995; Midwifery Development Unit, 1995b). This was carried out by a multidisciplinary research team which comprised of a project manager, two research midwives (one of which was the author), a social scientist, part time resource assessor and health economist, and clerical support staff. Although additional studies were conducted, the main research design used to evaluate the unit was a randomised controlled trial. The aim of the trial was to compare the efficacy of midwife-managed care with that of shared care. The study tested the hypothesis that compared with shared care, midwife-managed care would produce:

- A lower rate of intervention
- Similar (or more favourable) outcomes
- Similar complication rates
- Enhanced satisfaction with care
- Improved continuity of care and carer.

Related to the hypothesis was also the question of relative cost-effectiveness of both types of care (Turnbull et al, 1995; Midwifery Development Unit, 1995a). The following information is from a report on which the author was a key researcher (Midwifery Development Unit, 1995a).

## 4.2 STUDY ENTRY

To be eligible for the study, women had to book at the hospital within 16 completed weeks of pregnancy, live within the geographical area served by the hospital, and be experiencing a healthy pregnancy at booking. To define a healthy pregnancy, a range of clinical criteria were agreed at the outset by the midwifery team in consultation with obstetric colleagues. The exclusion criteria included the following factors: demographic (e.g. age less than 16 years or greater than 40 years); physical (e.g. small stature in primigravidae); genetic (e.g. family history of congenital malformation); medical (e.g. cardiac disease); obstetric (e.g. previous caesarean section); gynaecological (e.g. previous surgery to the reproductive tract); psychological (e.g. previous puerperal psychosis); and social (e.g. drug misuse).

Prior to attending the hospital women were sent information about the study. The referral letters and case-records of all women who booked at the hospital over a 14 month period (from January 1993) were screened by the research team. The case-records of potentially eligible women were highlighted. On attending the antenatal clinic these women were seen by a midwife who determined eligibility during standard history taking. Eligible women were referred to a member of the research team who sought consent using a standardised procedure. Written consent was obtained from women who agreed to join the study prior to randomisation. Allocation to type of care was by telephone from the research team in the antenatal clinic to a clerical officer based in separate department. Non-consenters to the trial were referred through the antenatal clinic as normal.

## **4.3 METHODOLOGY**

### **4.3.1 Sample**

A total of 1586 women were eligible for the study. The main reasons for women being excluded were that they booked at the hospital too late (15% of reasons), and clinical reasons such as previous caesarean section (14%) or regular prescribed drug therapy (11%). Of the 1586 who were eligible, 1299 agreed to join the study (a consent rate of 82%). The main reason for women not consenting was that they wished the existing style of care (71% of reasons). Of those randomised, 648 women were allocated to receive midwife-managed care and 651 were allocated to shared care. There were no differences between the two groups in the following baseline characteristics: age at booking, parity, smoking behaviour, marital status, and socio-economic status.

### **4.3.2 Outcomes**

The outcomes measured were defined apriori. The criteria for collection was that they were of significance to clinicians, to policy makers and to women. A range of clinical, psychosocial and economic outcomes were collected. The clinical outcomes were interventions, complications and outcomes of pregnancy. The psychosocial outcomes were women's satisfaction with care and continuity of care and carer. The economic evaluation was in the form of a cost benefit analysis.

## **Clinical outcomes**

Data were gathered through a retrospective review of the following records: the case-record, co-operation card, midwifery kardex, and Midwifery Development Unit Care Plan. This provided information on the mother from booking at the hospital until 28 days after delivery. Information on the baby was collected from birth until transfer to the Special Care Baby Unit or discharge to the health visitor in the postnatal period. Inter-rater reliability was measured for five percent of records to determine the level of agreement among the data collectors. To minimise bias, each data collector coded equal number of cases from the midwife-managed and shared care groups.

## **Psychosocial outcomes**

Women's satisfaction with care was measured using three self-report questionnaires sent to women's homes. The first was administered at 34-35 weeks gestation and assessed satisfaction with antenatal care. The second was sent seven weeks after birth and measured satisfaction with intrapartum and postnatal care. A final questionnaire was sent to a sample of women seven months after birth which gave an overall summary of satisfaction. The questionnaires measured women's satisfaction with care in general, as well as with specific dimensions of care such as information transfer and choices and decisions. A number of statements were developed to represent each dimension and arranged on a traditional Likert Scale (Likert, 1932). A mean attitude score was obtained for each dimension by adding the responses and dividing by the number of statements answered. The scores ranged from -2 representing negative attitudes to 2 representing positive attitudes.

Continuity of care and carer was assessed for a consecutive sample (in terms of expected date of delivery) of 180 women randomised to receive midwife-managed care and 180 randomised to receive shared care after 1st May 1993. The number of care providers was extracted from the records through a signature count, and to facilitate data collection sample signatures were obtained from midwives and obstetricians. Signatures were counted where there was evidence of physical care given or that care had been discussed with women. Inter-rater reliability was measured for five percent of records to determine the level of agreement among the data collectors. Questions were also included in the satisfaction questionnaires to ascertain the level of continuity of care from the woman's perspective.

### **Economic outcomes**

The economic evaluation included a cost analysis and an outcome analysis. The cost analysis involved measuring costs to the National Health Service (NHS) and costs to women. For NHS costs, resource use associated with all aspects of care was collected from the records, and a cost applied to each aspect of care. Costs to women included expenses such as travel and childcare costs, and opportunity costs such as lost leisure time or time taken off work. The cost of a single attendance antenatally for each of the venues (hospital antenatal clinic, community health centre clinic, general practitioner and home) was assessed through self-report questionnaires. The number and location of visits was collected from the records.

The outcome analysis involved the identification, measurement and valuation of outcomes. Valuation was conducted where outcomes were improved but costs were higher, to determine whether the added benefit was worth the additional cost. A conjoint analysis was carried out for the valuation stage using self-report questionnaires. Women were asked to rate the importance of specific components of care. In addition, they were asked to choose between several hypothetical scenarios where one was labelled A and the other B. One of the scenarios remained constant (with attributes similar to shared care) and the other had varying attributes (similar to those of midwife-managed care). In this way women's valuations of midwife-managed care and shared care were measured.

### **4.3.3 Analysis**

Analyses were conducted on the basis of intention to treat. Categorical data were analysed using the Chi Square Test ( $X^2$ ), including a linear trend for ordered variables. Continuous data were presented as means, and both these and differences in proportions were presented with 95% confidence intervals (CI). All differences were presented as shared care minus midwife-managed care.

## **4.4 RESULTS**

### **4.4.1 Clinical outcomes**

#### **Interventions**

Women in the midwife-managed group had a mean of nine antenatal visits compared with 10 for women in the shared care group (mean diff: 0.8, 95% CI: 0.3 to 1.2). They were less likely to be induced (24% compared with 33% in shared care, diff: 9.4%, 95% CI: 4.4% to 14.5%). A similar proportion of women in both groups had augmentation of labour (43% in the midwife group and 40% in shared care). There was a significant difference between the groups in condition of the perineum. Thirty-one percent of women in the midwife-managed group had an intact perineum compared with 24 percent in shared care. The rate of 1st and 2nd degree tears was the same (42% for both groups). Twenty-eight percent of women had an episiotomy in the midwife group compared with 34 percent in the shared care group ( $X^2$  trend=7.4, df=3,  $p=0.006$ ). There was no difference in the type of pain relief used. Thirty-three percent of women in the midwife group and 34 percent in shared care had an epidural ( $X^2$  trend=12.2, df=4,  $p=0.3$ ). The mean length of postnatal stay for both groups was three days and the mean number of postnatal visits was five.

#### **Complications**

There were no either statistically significant or clinically important differences between the two group in maternal or neonatal complications. Three babies in each group had a major abnormality.

In the midwife-managed group the major abnormalities were microcephaly, cleft lip and palate, and pulmonary atresia with ventricular septal defect. In shared care they were hydrocephaly, multicystic dysplastic kidney, and cleft lip and palate. The rate of fetal loss in both groups was similar: (9 in shared care, 4 in the midwife group).

## **Outcomes**

Gestation at delivery was similar, with the mean being 39 weeks for both groups. Mode of delivery was also similar and almost three quarters of women in both groups had a spontaneous vertex delivery. The rate of caesarean section was 13 percent in the midwife-managed group and 11 percent in the shared care group ( $X^2$  trend=1.96, df=6, p=0.9). The majority of babies in both groups had an APGAR score of 8-10 at one minute (78% in the midwife group and 76% for shared care). Similarly, the majority of birthweights were between the 5th and 95th centiles (88% in the midwife group and 89% in shared care).

### **4.4.2 Psychosocial outcomes**

#### **Women's satisfaction with care**

Several dimensions of satisfaction were measured. These were: general satisfaction, information transfer, social support, interpersonal relationships with staff, and choices and decisions. A mean attitude score was obtained for each dimension across the following periods of care: antenatal care, intrapartum care, postnatal care in hospital and postnatal care at home.

The first dimension was general satisfaction which was measured using statements such as *"I'm satisfied with the care I receive"* and *"I should get better care"*. Although women in both groups demonstrated positive attitudes in relation to this, women in the midwife-managed group had a higher score for each time period which indicated higher levels of satisfaction ( $p<0.001$ ). A similar pattern was displayed for information transfer which examined satisfaction with understanding, accessibility, amount and usefulness of information. Although women in shared care were satisfied with this dimension, women in the midwife group were more highly satisfied ( $p<0.001$ ).

Social support was measured using statements such as *"I'm treated like just another number"* and *"I feel staff are interested in me and not just my pregnancy"*. As before, women in the midwife-managed group indicated higher levels of satisfaction, with the largest differences found for antenatal care and postnatal care in hospital ( $p<0.001$ ). Interpersonal relationships with staff examined how pleasant and helpful staff were and how much confidence women had in them. Again women in the midwife group were more highly satisfied with this dimension ( $p<0.001$ ).

The last dimension was choices and decisions for care which was measured using statements like *"I can be in control of decisions about my care when I want to"* and *"I'm offered little choice about my care"*. Although women in shared care were satisfied with this dimension, women in the midwife-managed group demonstrated higher levels of satisfaction ( $p<0.001$ ).

## **Continuity of care and carer**

Overall, women in the midwife-managed group were cared for by 10 care providers throughout their care, compared with 17 in the shared care group (diff: 7.1, 95% CI: 5.8 to 8.4). They were cared for by five fewer midwives (diff: 4.7, 95% CI: 3.8 to 5.6) and two fewer members of the obstetric team (diff: 2.0, 95% CI: 1.5 to 2.5). The number of general practitioners seen was less than one for both groups (diff: 0.1, 95% CI: 0.0 to 0.2).

In addition to having fewer carers, women in the midwife-managed group were more likely to be satisfied with the number of care providers they saw throughout all of their care. Ninety-three percent of women reported they had seen "just the right amount" of staff compared with 66 percent in the shared care group ( $p < 0.00001$ ).

### **4.4.3 Economic outcomes**

#### **Cost analysis**

##### **Costs to the NHS**

There were no significant differences in costs to the NHS during the antenatal period (£357.15p for the midwife-managed group, £383.59p for the shared care group,  $p=0.5$ ) or the intrapartum period (£276.07p midwife care, £280.37p shared care,  $p=0.4$ ). Midwife-managed care was associated with significantly higher costs in the postnatal period (£496.83p compared with £397.10p for shared care,  $p < 0.0001$ ).

For midwife-managed care, base costs were estimated using a mean caseload of 29 women per midwife per annum, which was achieved during the trial. However, caseload ranged from 19 to 39 women per midwife per annum. As analysis showed satisfaction was unaffected by the larger caseload, the costs were re-calculated based on a caseload of 39 women per midwife per annum. This resulted in significantly higher costs for shared care in the antenatal period (£383.60p compared with £345.65p in midwife care,  $p=0.05$ ), intrapartum costs were unchanged, and costs for the midwife-managed group remained significantly higher in the postnatal period (£443.86p compared with £394.42p for shared care,  $p<0.0001$ ).

### **Costs to women**

The total average costs to women attending for antenatal care were £101.45p in the midwife-managed group and £109.39p in the shared care group.

### **Outcome analysis**

The NHS costs demonstrated that there were no differences in costs during the antenatal and intrapartum periods between the two groups. Overall, midwife-managed care resulted in similar clinical outcomes and improved psychosocial outcomes compared with shared care. Therefore as costs were the same and outcomes were improved during these periods, valuation was not required. Midwife-managed care was more cost effective than shared care in the antenatal and intrapartum periods. However, midwife-managed care resulted in similar clinical outcomes and better psychosocial outcomes in the postnatal period, but was associated with significantly higher costs. Valuation (conjoint analysis) was therefore conducted to identify whether the added benefit was worth the additional cost.

Women were asked to choose between several hypothetical scenarios (one labelled A and the other B). One of the scenarios remained constant (with attributes similar to shared care) and the other had varying attributes (similar to those of midwife-managed care). Results from the conjoint analysis demonstrated a general preference for midwife-managed care over shared care. Women valued highly a comfortable, homely ward in the postnatal period and believed the hospital should pay £234 for this. In addition, they valued continuity of care and felt the hospital should pay £214 for this attribute. Overall, women were willing to pay £530 more for midwife-managed care than shared care. Since women highly valued the additional benefits associated with midwife-managed care, this suggested it was cost effective compared with shared care in the postnatal period.

## **4.5 CONCLUSION**

The randomised controlled trial supported the research hypothesis. Compared with shared care, midwife-managed care did result in similar or reduced rates of intervention. Clinical outcomes and complication rates were similar for mother and baby. Satisfaction with care was enhanced and continuity of care and carer was improved. In addition, midwife-managed care was cost effective throughout antenatal, intrapartum and postnatal care. Overall, midwife-managed care for healthy women which is integrated alongside existing services was found to be safe and had added benefits for women.

# Chapter 5: *M*ethodology

The aim of this study was to identify whether the service specifications of the Midwifery Development Unit at Glasgow Royal Maternity Hospital were achieved.

The specific objectives of the study were to:

- Identify how many women received a Care Plan and basic Information Pack
- Ascertain the number of midwives who cared for each woman
- Measure women's satisfaction with the delivery of care in relation to the service specifications.

Ethical approval for the randomised controlled trial and additional studies (including this study) was granted from the Glasgow Royal Infirmary University NHS Trust Ethical Committee.

## 5.1 SAMPLE

A total of 648 women were allocated to midwife-managed care through the randomised controlled trial. From these, a consecutive sample (in terms of expected dates of delivery) of 180 women were chosen for the study.

The sample size required was calculated on the assumption that 65 percent of women would receive the main interventions, and a sample of 85 was needed for a 95 percent confidence interval width of 10 percent. Following pilot studies for the randomised controlled trial, a response rate of approximately 80 percent was anticipated for questionnaires, therefore 20 percent was added to this figure. To measure whether the service specifications were achieved, the final sample was restricted to women who were still receiving midwife-managed care at the point of evaluation. Therefore the sample size was further adjusted to compensate for the removal of women from the care programme due to a change in their risk status. Women transferred to the obstetric team and therefore removed from midwife-managed care were traced through the randomised controlled trial database register.

A consecutive sample was chosen to ensure that data collection was completed within a reasonable time period and to allow quick feedback of the results to care providers. This also eliminated the possibility of selection bias. Since the main research tools were questionnaires administered at set time periods, consecutive expected dates of delivery were used.

Recruitment of women to the randomised controlled trial commenced in January 1993, with each midwife having a gradual increase in caseload. To give the midwives time to obtain a caseload and to become familiar with the new care programme, women randomised to receive midwife-managed care after 1st May 1993 were selected for the study.

### **5.1.1 Antenatal sample**

The antenatal sample included all women who were still receiving midwife-managed care at 34-35 weeks gestation. Nineteen women were transferred to the obstetric team during the antenatal period, therefore the antenatal sample included 161 women. This was the sample used for the antenatal questionnaire.

### **5.1.2 Postnatal sample**

The postnatal sample included women who had received midwife-managed care throughout the antenatal, intrapartum and postnatal periods. A total of 60 women were transferred to the obstetric team at some time during their care, therefore the postnatal sample was 120 women. This sample was used for the postnatal questionnaire as well as review of the case-records and Care Plan.

## **5.2 METHODS OF DATA COLLECTION**

Two methods of data collection were used:

- Self-report questionnaires
- Review of the case-records and Care Plan.

## 5.2.1 Self-report questionnaires

Self-report questionnaires were used to identify how many women received a Care Plan and Basic Information Pack and to measure women's satisfaction with the delivery of care in relation to the service specifications. Satisfaction was investigated in relation to the service specifications as follows:

**Continuity of carer:** women's views on continuity of carer and their relationship with the midwives

**Individual informed care planning:** care planning and the Care Plan

**Information and choice:** tailored information and choices and decisions for care.

One antenatal and one postnatal questionnaire were developed (Appendices 1 and 2). The antenatal questionnaire was sent at 34-35 weeks gestation and the postnatal questionnaire at six to seven weeks after delivery. Both questionnaires were sent to the women's homes.

### **Justification of Methodology**

Previous studies into maternity care have shown that reliable and valid information can be gained on a variety of pregnancy events using postal surveys of mothers (Lumley, 1985; Martin, 1987). Reports by Melia et al (1991) and Cartwright et al (1987) have advocated the use of postal questionnaires for investigating consumers views on maternity care and for monitoring the maternity services. In addition, high response rates of about 80 percent have been achieved by such surveys proving that pregnancy is a salient subject to women.

Preliminary research within the Midwifery Development Unit involved sending a modified version of the Office of Population Censuses and Surveys Questionnaire to a sample of women within the area served by Glasgow Royal Maternity Hospital (Mason, 1989). An 82 percent response rate was obtained from this questionnaire, demonstrating that local women were both able to answer such a questionnaire and willing to participate in a maternity survey. In addition, this supported the view that pregnancy was an important subject to women.

The timing of the questionnaires was given careful consideration, as a number of studies have found that women's satisfaction with childbirth experiences can change over time. Bennett (1985) advocated the use of more than one questionnaire, with an interval after birth which allows women time to reflect on their experience and gain perspective on events. This view was endorsed by Lumley (1985), who suggested that the immediate postnatal period was too early to measure satisfaction due to the variety of emotions experienced at that time. With this in mind the antenatal questionnaire was designed to measure satisfaction with care during pregnancy, and the postnatal questionnaire to assess satisfaction with labour and postnatal care.

Lumley (1985) has demonstrated that women may feel captive whilst in hospital and perceive negative responses as direct criticism of care providers. As women can feel a sense of loyalty and obligation to their care providers, this may result in socially desirable answers being given (Lumley, 1985). In an attempt to overcome this and to obtain honest responses, the questionnaires were sent to women's homes. In addition, an introductory letter signed by the researcher was included which explained that the questionnaire originated from a researcher and assured that all responses were confidential and would not affect care delivery in any way.

## **Questionnaire Development**

One antenatal and one postnatal questionnaire were developed, both designed and piloted by the researcher. The questionnaires mainly comprised closed-ended questions with responses arranged on three-point to five-point scales. Several open-ended questions were included where pre-defined responses were inappropriate. For example, where a wide range of answers was possible for the question and fixed responses would have introduced bias, or where more qualitative data were required.

The use of scaled responses provided more descriptive information on the women's experiences, as a range of answers was possible for each question. This was preferable to simple "Yes/No" responses which would not have detected subtle variations in the level of women's satisfaction. As suggested by Ware et al (1983), five point scales were used most often as they have been shown to yield the most information. Also, this enabled a more detailed analysis to be conducted as extreme views could be selected and reported, or alternatively the scales could be collapsed to reflect positive and negative responses. However, previous work has suggested that closed questions can elicit fewer negative responses (Oppenheim, 1992; Bramadat & Driedger, 1993). Therefore, to minimise response bias, the scales were balanced so that a proportionate number of negative answers were possible for each question. In addition, the scales were reversed so that an equal number were included where the option of a negative response came first (Ware, Snyder, Wright, Davies, 1983).

### **Pilot study and results**

Several pilot studies were carried out prior to finalising both questionnaires, to ensure the use of language familiar to women and to test whether the questions would be interpreted as intended. The antenatal questionnaire was piloted in the antenatal clinic at Glasgow Royal Maternity Hospital with 16 women who were 34-35 weeks gestation. Piloting the postnatal questionnaire involved visiting women in their homes six to seven weeks after delivery. Since women no longer had contact with the maternity services at that time, only 2 women were approached and both consented to participate in the pilot. All the women included in the pilot studies received the midwife-managed care programme but were not included in the sample for this study.

Preliminary piloting of the questionnaires identified that some women had difficulty responding to open questions and often left them blank, while closed questions proved easier and quicker for the women to complete. Due to this several questions were changed from free response format to scaled responses. In addition, several changes were made to the language used in the questionnaires following piloting. Terms such as "obstetrician" and "personal situation" were changed to "doctor" and "home circumstances" when it became apparent that some women were not familiar with them. Also, phrases were changed to clarify the meaning of some questions. In particular, questions using the words "choices" and "decisions" proved problematic for the women, so these were rewritten in words used by the women themselves. For example,

"Do the MDU midwives *consult you in decisions* about your care?"

was changed to

"With MDU care, *how much of a say do you have* in what happens to you?"

Descriptions of the Care Plan and basic Information Pack, two of the main features of the service specifications, were not detailed enough for women to know what was being referred to without prompting. These were re-written making them more explicit, again employing language used by women.

Overall, it emerged that some aspects of care as described in the service specifications were slightly abstract to the women and proved difficult for them to answer using closed questions alone. In particular the following were problematic: in relation to continuity of carer, women's relationship with their midwives; and in relation to information and choice, tailored information and choices and decisions for care. These were addressed using a traditional Likert scale (Likert, 1932).

### **Likert scale**

The antenatal questionnaire included several statements arranged on a five-point Likert scale ranging from "strongly agree" to strongly disagree" (Likert, 1932). These statements examined women's attitudes to the service specifications set for continuity of carer and information and choice. Six statements examined the issue of continuity of carer by investigating women's relationships with their midwives. Information and choice was measured by five statements examining tailored information and three statements examining choices and decisions for care. These issues were considered particularly important in the antenatal period to measure the impact of the programme.

The following statements were used to measure choices and decisions for care:

*My MDU midwives involve me in my care*

*My MDU midwives pay little attention to my wishes*

*My MDU midwives try to meet my requests.*

The statements used to investigate women's relationship with their midwives concentrated on the midwives interpersonal skills and whether or not they treated the woman as an individual. Tailored information was measured using statements which identified whether the midwives had given the woman information which applied to her, and in a way that she could understand.

Previous work has suggested that Likert scale questions can elicit fewer negative responses (Oppenheim, 1992; Bramadat & Driedger, 1993). Therefore, in order to reduce response bias, both favourably and unfavourably worded statements were included to represent each issue (Ware et al, 1983). In addition, the statements were arranged in the scale in a random order. Ware et al (1983) have shown that obtaining a mean score for multi-item scales such as the Likert scale elicits a more reliable measure of satisfaction. Therefore, the statements were re-coded during analysis as follows: responses to negatively worded statements were reversed; "disagree" and "strongly disagree" were re-coded to minus one and minus two respectively; not sure was re-coded to zero; and "agree" and "strongly agree" were re-coded as one and two respectively. A mean score was then obtained for each issue by adding the responses and dividing by the number of statements answered. This produced a score for each issue which ranged from -2 (representing negative attitudes) to 2 (representing positive attitudes).

To test the discriminant validity of the Likert scale, a modified Q Sort procedure was carried out to confirm that the statements reflected the appropriate issue in relation to the service specifications (Anastasi, 1976).

### **Q Sort**

The Q Sort was conducted with two consumer and six professional representatives. Consumer representation was provided by the National Childbirth Trust and the Local Health Council, and the professionals represented the disciplines of midwifery, social sciences and public health. This provided a range of backgrounds and perspectives. The Q Sort was carried out with all participants individually.

The titles "women's relationship with their midwives", "tailored information" and "choices and decisions for care" were written on separate cards. The statements representing these issues were also written on individual cards and arranged in jumbled order. The participants were asked to place each statement beside the title which they felt it reflected. Where more than 2 participants (20%) placed a statement beside one of the other titles, that statement was re-categorised accordingly. Two statements were adjusted in this way. These statements had been intended to represent "tailored information", but as a result of the Q Sort were re-categorised and analysed as reflecting "women's relationship with their midwives".

## **The Final Questionnaires**

The purpose of the questionnaires was to:

- Identify how many women received a Care Plan and basic Information Pack
- Measure women's satisfaction with the delivery of care in relation to the service specifications.

Two questions were included in the antenatal questionnaire to identify if and when women were given a Care Plan and basic Information Pack. Women's satisfaction was measured in relation to the service specifications as follows.

**Continuity of carer:** women's views on continuity of carer and their relationship with the midwives

**Individual informed care planning:** opinions on care planning and the Care Plan

**Information and choice:** views on tailored information and choices and decisions for care.

### **1. Continuity of carer**

#### ***Continuity of carer***

Within the midwife-managed care programme the named midwife aimed to provide the majority of planned episodes of both antenatal and postnatal care. To see if this was the case, four questions were included in the postnatal questionnaire. These questions identified who had mainly cared for the woman during her antenatal and postnatal care, and how often she had known who would visit her at home in the postnatal period.

As labour was not considered a planned care episode, continuity of carer was not guaranteed during the intrapartum period. This was a controversial issue, as recent policy directives have suggested that women should be delivered by someone they know (Department of Health, 1993; The Scottish Office Home and Health Department, 1993). In addition, when defining the service specification, the consumer representatives from the National Childbirth Trust considered this to be extremely important. To ascertain women's views on this issue, they were asked in the postnatal questionnaire how important it was that they already knew the person who cared for them during labour, and why.

### ***Women's relationship with the midwives***

The main feature of the service specification set for continuity of carer was the named midwife. In relation to this the researcher wanted to investigate how well women identified both with the new midwife-managed care programme and their named midwife. Five questions were used across both questionnaires to assess how well women identified with the care programme. These questions ascertained whether the woman knew she was being cared for by the Unit, and what Midwifery Development Unit care meant to her; what she liked best and least about being cared for within the Midwifery Development Unit, and which type of care she would prefer in a future pregnancy.

How well women related to their named midwife was evaluated using two closed questions in the antenatal questionnaire. Women were asked if they could remember their midwife's name and if not, whether they would know her by sight. The relationship that would develop between the women and their midwives in general was measured using six statements arranged on the Likert scale.

These statements identified whether the woman was treated as an individual and if she found it easy to talk to the midwives and discuss things with them.

## **2. Individual informed Care Planning**

### ***Care Planning***

To measure the level of Care Planning, women were asked in the postnatal questionnaire how often they felt their antenatal care had been planned to suit them. Part of the philosophy of the midwife-managed care programme was planned early discharge in the postnatal period. Two questions were included in the postnatal questionnaire to ascertain if the woman had made a plan for discharge, and whether or not she had kept to that plan.

### ***The Care Plan***

The main feature of the service specification related to individual informed care planning was the client-held Care Plan. Since this was an innovation for women attending Glasgow Royal Maternity Hospital, it was important to ascertain their opinions on the Care Plan. The purpose of the Care Plan was to encourage two way communication between the woman and her care providers. The Care Plan aimed to help her talk about her pregnancy, discuss preferences for care, and gain information on the progress of her pregnancy. One question was included in the antenatal questionnaire in relation to each of these items, and answers to these questions were collated during analysis to identify how many women found the Care Plan useful for one, two and all three of the items. Two questions addressed how well the midwives had explained the Care Plan to women.

Four pages were included the Care Plan for women to record personal choices for care. A fifth was incorporated for them to write comments about their care during the de-briefing session. Six questions were included in the postnatal questionnaire to identify women's views on these pages. Women were asked what they thought about being able to write things down, how much the midwives encouraged them to do so and if the midwives paid attention to what was written. As the Care Plan was an innovation for women in the midwife-managed care programme, women were asked in the postnatal questionnaire when the Care Plan was of most use to them, and whether or not they would like one in a future pregnancy.

### **3. Information and choice**

#### ***Tailored information***

In the antenatal questionnaire, women were asked if they wanted any particular information during their care and whether they were given that information. In addition, five statements were included arranged on the Likert scale which identified whether the midwives had taken time to find out what information women wanted, and if women were given information suited to their needs and which they could understand.

#### ***Choices and decisions for care***

How much choice women were given during their care and how much they had participated in decision making was measured using the three statements previously described which were arranged on the Likert scale.

In addition, three questions were included in the antenatal questionnaire which identified whether women thought it was important to participate in their care, if they were given the opportunity to participate, and what areas of care were important for them to participate in.

### **Questionnaire administration**

Questionnaires were sent to women's homes at 34-35 weeks gestation and six to seven weeks after delivery. The questionnaires were posted one week in advance to ensure arrival at the woman's home at the appropriate time. Women who had changed address were located either via the midwives or the community health index. A reply paid envelope was included to encourage responses. Non-respondents received a follow up letter two weeks later and a second letter and replacement questionnaire four weeks later. The questionnaires were incorporated into the satisfaction questionnaires for the randomised controlled trial so that women only received one questionnaire at each time period.

#### **5.2.2 Review of case-records and Care Plan**

Retrospective review of the case-records and Care Plan was conducted to evaluate the service specification set for Continuity of carer and to examine the information recorded by women in their Care Plan.

## **Continuity of carer**

Continuity of carer was measured by identifying how many different midwives cared for each woman from the booking visit until transfer to the health visitor in the postnatal period using a signature count.

### **Justification of methodology**

Although the reliability of information collected from case-records has been questioned, it was unrealistic to expect women to accurately recount the number of different midwives who participated in their care (Cartwright, 1987; Martin, 1987). In addition, it would have been difficult for women to differentiate between midwives working within the midwife-managed care programme and other midwives working within the hospital.

### **Procedure**

The number of different midwives caring for each woman was identified by counting signatures in the case-records and Care Plan, where there was evidence of care given. Care was attributed where there was evidence of physical care given or that care had been discussed with the woman. This assumed that anyone signing the case-records or Care Plan had given the care. To facilitate data collection sample signatures were obtained from each Midwifery Development Unit midwife, as well as other midwives and members of the obstetric team within the hospital.

A data collection form was designed on which the number of different midwives involved in care during the antenatal period, the intrapartum period and the postnatal period was recorded (Appendix 3). In addition, the total number of different midwives providing care throughout all time periods was recorded separately. The number of other care providers was also recorded for each time period and overall.

As mentioned previously, the named midwife aimed to provide the majority of planned episodes of care. This was measured by recording the number of antenatal and postnatal visits carried out by the named midwife. By collecting this information and using the total number of antenatal and postnatal visits as a denominator, the proportion of planned care episodes given by the named midwife was calculated.

## **The Care Plan**

Five pages were incorporated into the Care Plan on which women could record information. These were coloured pink to make them easily identifiable to the women and were titled: Pregnancy and Birthplan; Pregnancy Plan; Birthplan; Postnatal Plan; and Talkback. The idea was that the named midwife would discuss a plan for each stage of pregnancy with the woman, who could then record any preferences or choices for care on the Care Plan. A de-briefing session was planned during the last postnatal visit, when the woman and midwife could discuss the woman's care. During this visit, the woman would be encouraged to record comments on the Talkback.

### **Justification of methodology**

Although women's opinions on being able to record information were gathered through the questionnaires, this did not elicit whether women actually documented anything on the Care Plan. Since this was an innovation for the women, it was unclear how they would react. In addition, various versions of client-held records have been written about in the past (Elbourne et al, 1987; Lovell et al, 1987; Fawdry, 1994). However, there have been no studies which describe a facility for women to record information. Therefore, it was important to identify whether women used the pages designated for them and what type of information they recorded.

### **Pilot study**

The Care Plans of 20 women who received midwife-managed care and were not included in the sample for this study were reviewed to identify what type of information could be collected. Several themes emerged, and a data collection form was designed and further piloted by the author (Appendix 4). Information was recorded on the following:

- How much was written on each page of the Care Plan
- The type of information women recorded (e.g.: preferences or comments on their care)
- The content of what women recorded (e.g.: continuity of care or pain relief in labour).

### **5.3 DATA ANALYSIS**

All data were entered onto computer using the software package Dbase IV (Boreland International Inc., 1988) and analyses were conducted using the statistical package SPSSPC (SPSS Inc., 1990). Data were analysed using simple frequency distributions, with crosstabulations carried out for some variables where appropriate. Where comparisons were drawn, categorical data were analysed using the  $X^2$  test, including a linear trend for ordered variables, and a 95% confidence interval (CI) was applied to means or proportions.

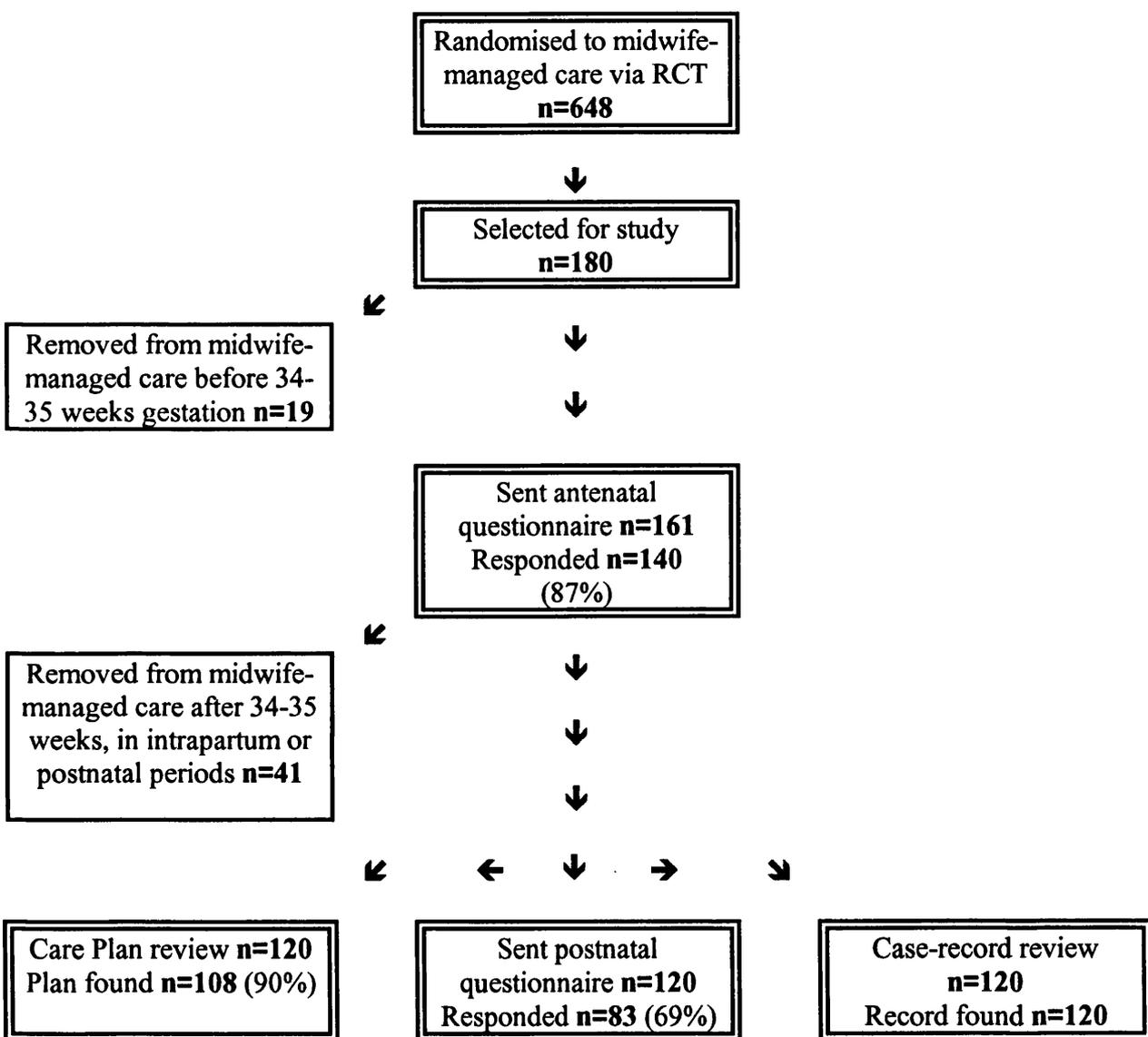
# Chapter 6: Results

Results are reported according to the service specifications, and are based on findings from the questionnaires and review of the case-records and Care Plan. Differences in totals throughout are due to missing data. Discrepancies of 0.1 in Tables 2, 3 and 4 are attributed to the confidence in interval analysis package (Gardner, Winter & Gardner, 1989).

## 6.1 SAMPLE AND RESPONSE RATES

Nineteen women were removed from midwife-managed care prior to sending the antenatal questionnaire at 34-35 weeks gestation. One hundred and sixty one women were sent the questionnaire, which obtained a response rate of 87 percent. A further 41 women were removed from the midwife-managed care programme after 34-35 weeks gestation in the antenatal period, or during the intrapartum or postnatal periods. Therefore, the sample size for the postnatal questionnaire and review of the case-records and Care Plan was 120 women. A response rate of 69 percent was obtained for the postnatal questionnaire. All case-records were found and reviewed, as well as 90 percent of the Care Plans. A summary of the sample is shown in Figure 2.

**Figure 2: Sample**



Of the women who were permanently removed from care, the most common reasons were caesarean section (accounting for 20 percent of removals) and medical conditions (accounting for 17 percent of removals). Other clinical reasons for removal are shown in Table 1. A number of women were also removed from care for non-clinical reasons.

**Table 1: Reasons for removal from midwife-managed care**

<b>Reason for removal from care</b>	<b>Number of women</b>	<b>(%)</b>
<i><b>Clinical reasons:</b></i>		
Caesarean section	12	(20)
Medical condition	10	(17)
Malpresentation	6	(10)
Intrauterine growth retardation	4	(7)
Antepartum haemorrhage	3	(5)
Pregnancy induced hypertension	3	(5)
Preterm labour	3	(5)
Baby loss	3	(5)
Postpartum haemorrhage	2	(3)
Twin pregnancy	2	(3)
Spontaneous rupture of membranes	1	(2)
<i><b>Non-clinical reasons:</b></i>		
Removed by general practitioner	3	(5)
Lost contact/received no care/dissatisfied with care	8	(13)
<b>Total</b>	<b>60</b>	<b>(100)</b>

A number of socio-demographic characteristics were examined to identify whether there were any differences between respondents and non-respondents to the questionnaires. These included age, parity, marital status, smoking status, and neighbourhood type (Carstairs 1991). There were no statistically significant differences found between the two groups in any of the characteristics (Tables 2 and 3). Although the confidence intervals are wide due to the sample size, the differences in proportions or means were small between the two groups.

**Table 2: Socio-demographic characteristics of respondents and non-respondents to the antenatal questionnaire<sup>1</sup>**

Characteristic	Respondents n=140 (%)	Non respondents n=21 (%)	Diff (respondents- non respondents)	95% CI for diff
Primigravid	74 (52.9)	10 (47.6)	5.2	-17.7 to 28.1
Married	80 (57.1)	13 (65.0)	-7.9	-30.3 to 14.6
Current smoker	45 (40.2)	5 (45.5)	-5.2	-36.1 to 25.5
Age at booking in years mean (SD)	25.9 (5.0)	27.3 (7.1)	-1.4	-4.8 to 1.9
Neighbourhood type: <sup>2</sup>				
1,2 (most affluent)	25 (18.0)	4 (19.0)	X <sup>2</sup> trend=0.01, df=1, p=0.9	
3,4,5	39 (28.1)	5 (23.8)		
6,7 (least affluent)	75 (54.0)	12 (57.1)		

1. Denominator excludes missing data

2. Carstairs & Morris, 1991

**Table 3: Socio-demographic characteristics of respondents and non-respondents to the postnatal questionnaire<sup>1</sup>**

Characteristic	Respondents n=83 (%)	Non respondents n=38 (%)	Diff (respondents- non respondents)	95% CI for diff
Primigravid	43 (51.8)	21 (55.3)	-3.4	-22.6 to 15.7
Married	51 (61.4)	21 (55.3)	6.2	-12.8 to 25.1
Current smoker	27 (39.7)	10 (34.5)	5.2	-15.6 to 26.1
Age at booking in years mean (SD)	26.2 (4.8)	25.1 (5.1)	1.1	-0.8 to 3.0
Neighbourhood type: <sup>2</sup>				
1,2 (most affluent)	15 (18.3)	6 (15.8)	X <sup>2</sup> trend=0.5, df=1, p=0.5	
3,4,5	24 (29.3)	9 (23.7)		
6,7 (least affluent)	43 (52.4)	23 (60.5)		

1. Denominator excludes missing data

2. Carstairs & Morris, 1991

The socio-demographic characteristics of the women selected for the study (n=180) were compared to those of women allocated to receive midwife-managed care overall during the randomised controlled trial (n=648). No statistically significant differences were found between the two groups in any of these characteristics (Table 4).

**Table 4: Socio-demographic characteristics of women selected for the study compared with women allocated to midwife-managed care in the RCT<sup>1</sup>**

Characteristic	Midwife-managed care n=648 (%)	Study sample n=180 (%)	Diff (midwife care-sample)	95% CI for diff
Primigravid	352 (54.7)	94 (52.2)	2.4	-5.8 to 10.7
Married	338 (53.6)	102 (57.1)	-3.4	-11.6 to 4.8
Current smoker	220 (37.9)	55 (33.5)	4.3	-3.9 to 12.6
Age at booking in years mean (SD)	25.8 (5.0)	26.1 (5.3)	-0.3	-1.1 to 0.5
Neighbourhood type <sup>2</sup> :				
1,2 (most affluent)	85 (13.3)	21 (17.5)	X <sup>2</sup> trend=1.07, df=1, p=0.3	
3,4,5	185 (29.0)	33 (27.5)		
6,7 (least affluent)	368 (57.7)	66 (55.0)		

1. Denominator excludes missing data

2. Carstairs & Morris, 1991

## 6.2 CONTINUITY OF CARER

The first service specification related to continuity of carer and stated:

*Healthy women being cared for by the MDU midwives can expect to be cared for by a named midwife and three associate midwives from booking through to transfer to the health visitor postnatally.*

The number of care providers was measured through retrospective review of the records using a signature count. Care was attributed where there was evidence of physical care given or that care was discussed with women. Women's satisfaction with the relationships that developed between them and the midwives, and their perceptions of continuity of carer were examined through the self-report questionnaires.

Fifty-four percent of women were cared for by one named midwife and three associate midwives from booking until transfer to the health visitor in the postnatal period (95% CI: 44% to 63%) (Table 5).

**Table 5: The number of midwives involved in care from booking until discharge to the health visitor postnatally**

Number of different midwives involved in care	Number of women	(%)
Up to 4	63	(54) <sup>1</sup>
5	30	(25)
6	14	(12)
7-10	11	(9)
Total	118	(100)

1. 95% CI: 44% to 63%

Although the service specification was achieved for just over half the women, the mean number of midwives involved in care was five, and the mean number of total care providers including all professional groups was seven (Table 6).

**Table 6: The number of different care providers from booking until discharge to the health visitor postnatally including all professional groups**

<b>Professional group</b>	<b>Number of different care providers n=118 Mean (Median)</b>
MDU midwives	4.6 (4)
GRMH midwives	0.9 (0)
Obstetric team	1.2 (1)
General practitioners	0.2 (0)
Unknown	0.1 (0)
All care givers	7.1 (6)

The proportion of antenatal care given by the named midwife was 90 percent. Twenty-five percent of postnatal care in hospital, and 33 percent of postnatal care in the community was carried out by the named midwife. In line with these findings, 99 percent of women reported that the main person who cared for them during the antenatal period was their named midwife. When asked if this was the same person who mainly cared for them in the postnatal period, 49 percent of women reported this was the case "all" or "most of the time", 29 percent reported "sometimes", and 22 percent reported "rarely" or "not at all". Ninety-eight percent of women reported that they knew who would visit them at home each day for community postnatal care "all" or "most of the time".

There was a strong degree of identification with both the midwife-managed care programme and the named midwife. Ninety-eight percent of women responded that they were being cared for by the Midwifery Development Unit and 91 percent correctly reported their midwife's name (Table 7).

**Table 7: Identification with the Midwifery Development Unit**

<b>Degree of identification with the unit</b>	<b>Number of women</b>	<b>(%)</b>
Unsure if being cared for by the MDU	2	(2)
Did not know named midwife by name or by sight	7	(5)
Knew named midwife by sight	3	(2)
Correctly named midwife <sup>1</sup>	128	(91)
<b>Total</b>	<b>140</b>	<b>(100)</b>

1. Christian and surname given n=109 (78%), Christian name only given n=19 (13%)

Women were asked who they had expected to care for them during labour, since the care programme did not guarantee the named midwife would be available for delivery. Seventy-five percent of women thought their named midwife would have cared for them in labour if she was on duty and available, while 21 percent thought their named midwife would have cared for them during labour regardless. When asked how important it was they already knew the person who cared for them in labour, 57 percent of women responded that it was "extremely important" or "very important". Twelve percent reported it was "important", and 31 percent responded "only moderately" or "not at all important".

Of the women who considered it important to know the person who cared for them in labour, reasons given for their views included: *"it is better to have a midwife who has been there throughout your pregnancy, instead of someone you haven't met before"*, *"you get to know and trust your midwife"* and *"it is what you have worked towards together"*. Of the women who felt it was not as important, comments included: *"it is unrealistic to expect your own midwife to be on duty when you are in labour"*, *"as long as you are given the care you want, it doesn't matter who gives you the care"* and *"any midwife would have been fine"*.

When this issue was investigated taking into account who had actually delivered the woman, a significant linear relationship was found between the two ( $X^2$  trend=18.1, df=1, p=0.00002). Women delivered by their named midwife were significantly more likely to report it was extremely important they knew the person who cared for them in labour, while women delivered by another person were more likely to respond it was only moderately or not at all important (Table 8).

**Table 8: The relationship between who delivered the woman and how important it was she already knew the person who cared for her in labour**

Delivered by	Number of women n=82 (%)		
	Extremely important	Very important /important	Only moderately/ not at all important
Named midwife	12 (80)	3 (20)	0 (0)
Other <sup>1</sup>	14 (21)	28 (42)	25 (37)

$X^2$  Trend: 18.1, df=1, p=0.00002

1. Includes: other Midwifery Development Unit midwife, Glasgow Royal Maternity midwife, member of the obstetric team, and student midwife or medical student

In response to one of the open-ended questions in the antenatal questionnaire which read "Please describe what Midwifery Development Unit care means to you", 27 percent of the comments from women were related to continuity of carer. Women made comments such as: *"don't meet a lot of different people"*, *"seeing the same midwife"* and *"care by a small number of staff"*. Related to continuity of carer women also described familiarity and the interpersonal relationships that developed between themselves and the midwives (accounting for a further 25% of comments). Some of the comments made by women included: *"you get to know each other"*, *"you get to trust the person"* and *"your midwife becomes a friend"*.

A similar question in the postnatal questionnaire asked "What did you like most about being cared for by the Midwifery Development Unit?". As before, a proportion of comments from women described continuity of carer (39% of comments) and interpersonal relationships (30% of comments). Aspects of care women liked best included: *"seeing the same midwife"*, *"getting to know the person who was looking after me"* and *"knowing who you would see at each clinic visit"*. One woman commented: *"I felt very special because I was treated so well"*. Several women responded that they *"were made to feel comfortable"* or *"at ease"*, and many commented on the friendly, relaxed environment. Similarly, women described the midwives as *"friendly"*, *"approachable"*, *"nice"*, or *"reassuring"*.

Continuity of carer was also measured using the following six statements arranged on the Likert scale which examined the relationships that developed between the women and midwives:

*"It is easy to discuss things with my MDU midwives"*

*"I find it hard to talk to my MDU midwives"*

*"My MDU midwives are sensitive to my feelings"*

*"My MDU midwives give me little time to ask questions"*

*"My MDU midwives answer my questions in a way I can understand"*

*"My MDU midwives treat me like an individual".*

A mean attitude score was obtained for this issue by adding the responses to these statements and dividing by the number of statements answered. This produced a score ranging from -2 representing negative attitudes to 2 representing positive attitudes. In general women were highly satisfied with the relationships that developed between themselves and the midwives, with a mean score of 1.5 obtained from the Likert scale which represented very positive attitudes to this issue.

### **6.2.1 Summary**

The service specification was achieved for 54 percent of women. The majority of antenatal care was provided by the named midwife (90%) and women appeared to strongly identify with her. Sixty-nine percent of women said it was important they knew the person who cared for them in labour (although this was a complex issue) and 98 percent knew who would visit them at home each day for postnatal care. Women described continuity of care as a feature of midwife-managed care and one of the aspects they liked best about the programme. In addition, they were highly satisfied with the relationships that developed between themselves and the midwives.

### **6.3 INDIVIDUAL INFORMED CARE PLANNING**

The second service specification stated:

*The MDU will facilitate individual, informed care planning. Each woman will hold her own midwifery Care Plan which will contain clinical progress notes as well as her personal choices antenatally, postnatally and her Birthplan. During the final episode of care the midwife will evaluate the care plan with the woman prior to it being returned to the case-record.*

The number of women who were given a Care Plan and women's satisfaction with the Plan and care planning were measured through the self-report questionnaires. Whether women recorded information on the Care Plan was examined through a retrospective review of these Plans.

Ninety-eight percent of women reported being given a Care Plan at their first visit to the hospital. All women were satisfied with the way the midwives explained the Care Plan to them, and 92 percent thought it was easy to understand what was written in the Plan by the midwives.

The aims of the Care Plan were to help women:

- Talk about their pregnancy
- Discuss any preferences they had in relation to care
- Get information on how their pregnancy was progressing.

One question was asked in relation to each of these aims, and 87 percent of women reported the Care Plan useful for helping them talk about their pregnancy. Eighty-nine percent found it useful for discussing preferences, and 90 percent found the Care Plan useful for gaining information about their pregnancy. Overall, 90 percent of women found the Care Plan useful for at least two of the three items (Table 9).

**Table 9: How useful was the Care Plan?**

<b>Number of items Care Plan useful for</b>	<b>Number of women</b>	<b>(%)</b>
None	7	(5)
One	7	(5)
Two	10	(8)
Three	110	(82)
<b>Total</b>	<b>134</b>	<b>(100)</b>

Women were asked when they found the Care Plan of most use to them, and 45 percent reported that it was useful throughout all of their care (Table 10). When asked whether they would like a Care Plan in the future, 95 percent of women replied "yes definitely", or "yes probably".

**Table 10: When was the Care Plan most useful?**

<b>Period of care</b>	<b>Number of women</b>	<b>(%)</b>
Never	7	(9)
During pregnancy	11	(14)
During labour	10	(12)
Postnatally	16	(20)
Throughout all of care	36	(45)
<b>Total</b>	<b>80</b>	<b>(100)</b>

Eighty percent of women reported being encouraged to record any questions, preferences or choices in their Care Plan by the midwives "as much as they wanted". Twelve percent reported they did not want to write anything, seven percent were encouraged to record information less than they wanted, and one percent were encouraged more than they wanted. When asked what they thought about "being able to write things down", 81 percent of women replied it was "a good idea" (Table 11).

**Table 11: What did women think about being able to "write things down"?**

<b>Response scale</b>	<b>Number of women</b>	<b>(%)</b>
Didn't see the point in this	1	(1)
Wasn't bothered one way or another	12	(14)
Not sure	3	(4)
Thought it was a good idea	67	(81)
<b>Total</b>	<b>83</b>	<b>(100)</b>

Women were asked whether they actually recorded any preferences or choices in their Birthplan, and less than half reported that they did (42%). Thirty-three percent reported not recording anything, and 25 percent replied they had no particular preferences to record. Of those women who recorded preferences, 80 percent felt the midwives referred to their Birthplan "enough", three percent said they did not refer to it at all, and 17 percent responded "not sure" to the question.

The majority of women (88%) reported the midwives had discussed the care they received "as much as they wanted" prior to transfer to the health visitor. Ten percent replied their care was discussed "nearly as much as they wanted", and two percent said it was not discussed at all. Ninety-two percent of women reported being encouraged to record comments about their care on the Talkback page of the Care Plan "as much as they wanted". Two percent were encouraged less than they wanted, two percent were not encouraged at all, and four percent said they had nothing to write.

Examination of the content of the Care Plan identified that the majority of women completed the Talkback (96%). The other four pages which were designated for women to record preferences were used infrequently. Thirty-two percent of women completed the Birthplan (42% had reported using the Birthplan), 27 percent used the Pregnancy/Birthplan, 13 percent used the Postnatal plan, and 7 percent completed the Pregnancy plan. The actual amount of information recorded on each page varied (Table 12). On the Talkback, 66 percent of women completed more than half page, whereas on the other pages women usually completed less than half a page.

**Table 12: The amount of information recorded in the Care Plan by women**

Page in Care Plan	Number of Care Plans n=108 (%)			
	Nothing	Less than 1/2 page	1/2 to 1 page	More than 1 page
Pregnancy/Birthplan	78 (72)	22 (21)	8 (7)	0 (0)
Pregnancy plan	100 (93)	8 (7)	0 (0)	0 (0)
Birthplan	73 (68)	28 (26)	6 (5)	1 (1)
Postnatal plan	94 (87)	14 (13)	0 (0)	0 (0)
Talkback	4 (4)	33 (30)	54 (50)	17 (16)

When the designated pages of the Care Plan were used, 73 percent were completed by the woman herself, 23 percent were completed by the woman and the midwife, and four percent were completed by the midwife on the woman's behalf.

The content of what was written was also examined. In the Talkback, women mainly made positive comments about their care (accounting for 41% of comments). They also described events which occurred during their care (26%), detailed preferences for care (19%), and made negative comments about their care (13%).

Women made comments in the Talkback on a variety of subjects. Usually these were of a general nature such as "*would recommend the care to anyone*", "*staff had more time to see you*" or "*liked just seeing females*". Women also described the relationships that developed between themselves and the midwives using words like "*trust*" and "*friendship*", and talked about the support they received for example "*was not pressured to do anything*" and "*labour was easier due to support*".

Continuity of care was described in the Talkback as "*seeing the same person*" and "*seeing a small group of people*". Women talked about the accessibility of home visits and the environment in which they were cared for which was described as "*friendly*", "*non-threatening*" and "*homely*". Examples of negative comments included: "*care should have been more co-ordinated with the GP*", and "*other women* (i.e. those who were not receiving midwife-managed care) *thought the MDU got the best of everything*", or "*resented the MDU*".

Content of the Birthplan was slightly different. Women mainly recorded preferences for care (accounting for 74% of comments), although they also described events which occurred during care, or discussions that had taken place with the midwives (26%). Usually women's preferences were in relation to intrapartum care and about analgesia, mobilisation, and episiotomy, tears or suturing. Women also described preferences related to positions for delivery, involvement of students., and when to see or hold their baby.

All women recalled that their antenatal care had been planned to suit them "all" or "most of the time". Forty-two percent of women reported they had planned antenatally when to go home in the postnatal period. Of those, just over a third planned to go home two or three days after their baby's birth (Table 13).

**Table 13: When did women plan to go home in the postnatal period?**

Response to question	Number of women	(%)
6 hours after birth	3	(8)
24 hours after birth	7	(19)
2-3 days after birth	14	(38)
After 4 or more days	2	(5)
When felt fit and able	7	(19)
When knew baby was fine	4	(11)
Total	37	(100)

Of the women who planned when to go home, 68 percent reported going home as planned. Twenty-six percent changed their plan (because they changed their mind at the time or after discussion with the midwives), and six percent did not go home as planned and were not sure of the reason for this.

As previously mentioned, one question in the antenatal questionnaire read "Please describe what Midwifery Development Unit care means to you", and one question in the postnatal questionnaire asked "What did you like best about being cared for by the Midwifery Development Unit?". Thirteen-percent of the comments from women antenatally and 15 percent of the comments from women postnatally were in relation to individual care planning. Women described individualised care with comments such as: *"didn't feel like a number"*, *"was treated like an individual"* and *"the midwife was interested in my views about things"*. One women replied *"to a certain extent you are in control of your care"* and another reported *"other midwives seemed to know what care I needed"*.

### **6.3.1 Summary**

Ninety-eight percent of women received a Care Plan at their first visit to the hospital and all were satisfied with how the midwives explained it to them. The majority of women found the Care Plan useful for discussing their care and any preferences, and for obtaining information (82%). Forty-five percent felt it was useful throughout all of their care and 95 percent expressed a preference to carry a Care Plan in a future pregnancy. The majority of women liked the idea of recording information (81%), although they did not use all the pages available to them. All women felt their antenatal care had been planned to suit them "all" or "most" of the time and women described individualised care as a feature of midwife-managed care.

## **6.4 INFORMATION AND CHOICE**

The final service specification was related to information and choice and stated:

*Every woman being cared for in the MDU will receive a basic Information Pack. In addition, there will be an ongoing assessment of specific information requirements which will be tailored to the individual woman's circumstances. The midwife will allow time to discuss information and choice with each woman.*

The number of women who were given an Information Pack and women's satisfaction with tailored information and choices and decisions was measured through the self-report questionnaires.

Eighty-nine percent of women reported being given a basic Information Pack early on in their pregnancy. One percent were given it towards the middle or end of their pregnancy, seven percent said they were never given the pack, and three percent were not sure whether they had received it.

Women were asked whether they wanted particular information during their antenatal care. Thirty-one percent replied that they definitely or probably wanted specific information, and 69 percent reported they did not. Of those women who wanted particular information, most commonly they wanted information about labour and health and behaviour while pregnant (Table 14).

**Table 14: What did women want information on during their antenatal care?**

<b>Topic</b>	<b>Number of comments</b>	<b>(%)</b>
Labour	24	(37)
Health and behaviour during pregnancy	15	(23)
Baby care/postnatal care	10	(16)
Tests	7	(11)
Practical issues (e.g.: maternity benefits)	5	(8)
General information (e.g.: all information)	3	(5)
<b>Total</b>	<b>64</b>	<b>(100)</b>

Regarding their health and behaviour while pregnant, women wanted advice on diet, exercise and how to stop smoking. They wanted information about physiotherapy and parentcraft classes, and how to look after themselves generally during pregnancy.

In relation to labour, women were interested in knowing about labour in general as well as the actual birth including: alternative delivery positions, birthing pools, water birth and home birth. Women also wanted information on the methods of pain relief available, and procedures such as episiotomy and artificial rupture of the membranes.

Other information women wanted included advice on: feeding their baby and breast feeding in particular; where to buy equipment and what to do when they went into labour; tests such as *"the triple test for Down's syndrome"*; and whether their work placed them at risk (e.g. working in veterinary surgery or chemistry laboratory).

Of the women who wanted particular information (n=42), 76 percent reported being given "all" or "most" of the information by the midwives. Fourteen percent were given "some" of the information, and nine percent were given "little" or "none" of the information they wanted.

The degree of tailored information was also measured for all women (n=132) using the following five statements arranged on the Likert scale:

*"My MDU midwives spend time to find out what information I want"*

*"My MDU midwives give me information which applies to me"*

*"My MDU midwives give me information which is of little use to me"*

*"My MDU midwives give me information which I find hard to understand"*

*"My MDU midwives consider my home circumstances when giving me information".*

A mean attitude score was obtained for this issue by adding the responses to the statements and dividing by the number of statements answered. This produced a score ranging from -2 representing negative attitudes to 2 representing positive attitudes. Overall, women were highly satisfied with tailored information with a mean score of 1.3 obtained from the Likert scale which represented very positive attitudes to this issue.

Women were asked how important it was they "had a say" in what happened to them during their antenatal care, and 95 percent reported that it was at least important (Table 15).

**Table 15: How important was it women "had a say" in their antenatal care?**

<b>Response scale</b>	<b>Number of women</b>	<b>(%)</b>
Not at all important	2	(1)
Only moderately important	5	(4)
Important	35	(26)
Very important	45	(33)
Extremely important	50	(36)
<b>Total</b>	<b>137</b>	<b>(100)</b>

Of the women who considered it important to "have a say", the main areas which concerned them were labour and interventions (Table 16).

**Table 16: Areas where women wanted "a say" in relation to care**

<b>Area of care</b>	<b>Number of comments</b>	<b>(%)</b>
Labour	52	(41)
Interventions	25	(20)
Baby care/postnatal care	17	(13)
Care in general	14	(11)
Interpersonal aspects	10	(8)
Antenatal care	9	(7)
<b>Total</b>	<b>127</b>	<b>(100)</b>

In relation to labour, women commented it was important they "had a say" in planning the birth and how and when their baby was delivered. They also wanted to participate in deciding the method of pain relief used and "have a say" in any other choices available during the intrapartum period.

Regarding interventions, women wanted to be involved in deciding what tests were carried out (e.g. blood tests and ultrasound scans) and wanted to be informed of the reasons for such tests. A number of women wanted to "have a say" in the method of fetal heart rate monitoring used during labour.

Of the women who replied it was important that they "had a say" during their antenatal care, 88 percent had as much of "a say" as they wanted and 12 percent had less of "a say" than they wanted.

Women's satisfaction with choices and decisions was also measured using the following three statements arranged on the Likert scale:

*"My MDU midwives involve me in my care"*

*"My MDU midwives pay little attention to my wishes"*

*"My MDU midwives try to meet my requests".*

A mean attitude score was obtained for this issue in the same way as described for tailored information. In general, women were highly satisfied with choices and decisions with a mean score of 1.4 obtained from the Likert scale.

A final question asked what type of care women they would prefer in a future pregnancy and 96 percent chose the midwife-managed care option. Four percent of women replied that they would like another type of care or that they had no specific preference.

### **6.4.1 Summary**

The majority of women were given a basic Information Pack (89%) and women demonstrated positive attitudes in relation to tailored information with a mean score of 1.3 obtained from the Likert scale. Thirty-one percent of women wanted specific information during their antenatal care, and approximately three quarters of them were given that information (76%).

Ninety-five percent of women thought it was important they "had a say" in relation to their antenatal care, and most of these women had as much of "a say" as they wanted (88%). In general women were highly satisfied with choices and decisions for care with a mean score of 1.4 obtained from the Likert scale.

# Chapter 7: Discussion

## 7.1 BACKGROUND

The 1990's have seen a marked change in the maternity services with the trend for institutionalised and medicalised care shifting towards a service which is driven by the consumer. This change has been partly due to the current political climate but also as a result of a number of government reports. These reports concluded that maternity care provision should be driven by consumer needs as opposed to professional opinion (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993). The House of Commons Health Committee Report (1992) questioned the appropriateness of the predominant shared care model, where care is divided between midwives, obstetricians and general practitioners (Tucker et al, 1994). The evidence suggested both women and midwives were somewhat dissatisfied with this approach to care and highlighted the need for change (Reid & Garcia, 1989; Reid & Macmillan, 1992; Pearce, 1987; House of Commons Health Committee, 1992; Robinson, 1993). The subsequent policy documents "Changing Childbirth" and "Provision of Maternity Services in Scotland" (produced in 1993), recognised the need for change and outlined ways of implementing a system of maternity care which was responsive to the needs of women.

The evidence from women identified three common themes which described what they wanted from the maternity services. Continuity of care, choice in relation to care and place of delivery, and the right to control over their own bodies at all stages of pregnancy and birth (House of Commons Health Committee, 1992). In order to provide this, a more central role for midwives was recommended and the development of midwife-managed units was supported. While this meant recognition of the professional status of midwives and full utilisation of midwifery skills, it was important to ensure this was not detrimental to the safety of mother and child. Therefore the need for monitoring and evaluation during this period of change were considered of prime importance (House of Commons Health Committee, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993).

## **7.2 THE MIDWIFERY DEVELOPMENT UNIT**

Against this background, the United Kingdom's first Midwifery Development Unit was established at Glasgow Royal Maternity Hospital in 1992. The Unit was funded for a period of three years by The Scottish Office Home and Health Department and aimed to improve the quality of care provided to women during pregnancy and childbirth. The Unit's objectives were to: introduce a total midwifery care programme for healthy women; encourage participating midwives to utilise their skills to the full; monitor and evaluate the unit; and develop audit and educational tools for use by the profession and other health boards.

In line with the need to test innovative types of care, the funding from The Scottish Office was used primarily for the creation of a research team to monitor and evaluate the unit. The main research design was a randomised controlled trial which compared the clinical, psychosocial and economic outcomes of 648 women randomised to receive midwife-managed care with 651 allocated to shared care (Midwifery Development Unit, 1995a). The research hypothesis was that compared with shared care midwife-managed care would produce: a lower rate of intervention; similar (or more favourable) clinical outcomes; similar complication rates; enhanced satisfaction with care and carer; and improved continuity of care.

The results from the trial supported the research hypothesis. Compared with shared care midwife-managed care did result in similar or reduced intervention rates. Clinical outcomes and complication rates were similar for mother and baby. Satisfaction was significantly enhanced throughout antenatal, intrapartum and postnatal care, and continuity of care and carer was significantly improved. In addition, midwife-managed care was found to be cost-effective throughout the antenatal, intrapartum and postnatal periods. It was concluded that midwife-managed care which was integrated alongside existing services was safe and had added benefits for women.

Although the randomised controlled trial tested the efficacy of midwife-managed care, it did not determine whether the programme goals were achieved. The service specifications described a philosophy of care which revolved around continuity of care, individual informed care planning and information and choice. These represented a major change to the way care was delivered and it was important to monitor that change.

From a managerial perspective, it was necessary to identify whether the standards of care described were realistic and achievable. From the women's perspective, it was important to ascertain if care was delivered according to the agreed philosophy. This study was therefore conducted alongside the trial to measure how well the Midwifery Development Unit service specifications were achieved.

### **7.3 QAMID**

Although a number of team midwifery schemes and similar initiatives have been implemented throughout the United Kingdom in recent years, few have been subjected to any form of evaluation (Murphy-Black, 1992a; Wraight et al, 1993). Those which have undergone formal evaluation have usually been tested through large randomised controlled trials (Flint et al, 1989; MacVicar et al, 1993; Hundley et al, 1994). Although these trials have tested the efficacy of the initiatives, the quality of care provided has not been directly measured. As a result, there have been no comparison of outcomes against agreed standards of care (Flint et al, 1989; Heseltine, 1991; Keats, 1993; MacVicar et al, 1993; Hundley et al 1994). Also, although a randomised controlled trial may provide the best environment to test innovations, few units have either the resources or opportunity to conduct such an evaluation. In order to monitor changes in clinical practice as recommended, other methods of evaluation need to be considered (Department of Health, 1993; The Scottish Office Home and Health Department, 1993).

It is now recognised that there is a general need for audit and quality assurance in relation to the maternity services. Although there seems a degree of reluctance among midwives to undertake and write about audit, it is suggested as one way of ensuring a quality service and monitoring the effect of change (Hallums, 1990; Ross, 1991; Auld, 1992; Dawson, 1993; Downe, 1994). Audit has been defined as: *"the systematic, critical analysis of the quality of clinical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the client"* (University of Dundee, 1994). Where research aims to establish what is best practice, audit aims to compare actual performance against agreed standards of practice. As a result of this, audit is often associated with setting standards of care (Ross, 1991; Auld, 1992; Downe, 1994). A standard has been described as *"a professionally agreed level of performance appropriate to the population addressed, which is observable, achievable, measurable and desirable"* (University of Dundee, 1994). Where standards have been set, audit can measure: whether the standard is met; if it is not met, why not; and whether the standard requires amendment. The audit cycle therefore involves negotiating what level of quality is desired, recording what level of quality is actually offered, implementing possible changes then evaluating the changes by re-audit (University of Dundee, 1994).

Although the importance of quality assurance and audit has been highlighted, there remains little information on the evaluation of such standards in relation to midwifery practice (Dawson, 1993; Downe, 1994). This is despite the fact that quality assurance is now seen as an integral part of health care (Department of Health, 1993; The Scottish Office Home and Health Department, 1993; University of Dundee, 1994).

In view of the current climate which favours a consumer driven service, the importance of involving women in quality assurance has also been stressed (Auld, 1992; Department of Health, 1993; The Scottish Office Home and Health Department, 1993). The new Quality Assurance Model for Midwifery - QAMID is one method through which standards of care, or service specifications can be set (World Health Organisation, 1991). Although QAMID follows the usual audit cycle, the model is unique in that it is driven by the consumer. Within the Midwifery Development Unit, three service specifications were generated through this model by a process of consumer and professional negotiation (McGinley et al, 1995; Midwifery Development Unit, 1995b). Since these represented a major change to the way in which care was delivered, it was important to measure whether the service specifications were achieved. In addition, this provided an opportunity to test the new quality assurance model in practice.

#### **7.4 SAMPLE**

A consecutive sample of women allocated to midwife-managed care through the randomised controlled trial were chosen for the study. In order to measure how well the service specifications were achieved, the sample was restricted to women who were still receiving midwife-managed care at the point of evaluation. Therefore, the antenatal sample included 161 women and the postnatal sample comprised 120 women. Since these were a relatively small proportion of the women randomised to receive midwife-managed care overall (648 women), it was important to discover how representative the sample was of those women.

In addition, although the response rates to the antenatal and postnatal questionnaires were high (87% and 69% respectively), it was also important to identify whether there were any differences between respondents and non-respondents to the questionnaires, as this may have introduced an element of bias.

Examination of the socio-demographic characteristics of respondents and non-respondents identified that the groups were comparable, and it was concluded that the questionnaire respondents were representative of the total sample. In addition, no significant differences in characteristics were found between women chosen for the study (n=180) and those of women allocated to midwife-managed care overall through the randomised controlled trial (n=648). The sample was therefore representative of women randomised to receive midwife-managed care.

## **7.5 METHODS**

The main method used for this study were self report questionnaires, and through these women demonstrated that they were highly satisfied with the way care was delivered in relation to the service specifications. However, it must be acknowledged that one of the problems associated with measuring satisfaction is the possibility of socially desirable answers being given (Lumley, 1985; Oppenheim, 1992). Previous work has shown that high levels of satisfaction are sometimes reported in relation to the maternity services and health care in general. However, doubt has been cast as to whether these are true levels of satisfaction (Fitzpatrick & Hopkins, 1983; Porter & MacIntyre, 1984; Lumley, 1985; Bennett, 1985; Bramadat & Driedger, 1993).

In addition, studies have demonstrated that women may be reluctant to answer negatively about their experiences because of loyalty to care providers (Lumley, 1985). In view of this, several strategies were used in an attempt to minimise response bias.

Throughout the questionnaires, response scales for closed questions were balanced so that a proportionate number of negative answers were possible for each question. In addition, the scales were reversed so that an equal number were included where the option of a negative response came first. Also, in the Likert scale, unfavourably as well as favourably worded statements were included. These strategies have been suggested as ways of reducing response bias, and since the results demonstrated varying proportions of women expressing dissatisfaction for a range of issues, there is evidence to suggest they may have been effective (Ware et al, 1983). For example, about a quarter of women reported not receiving the particular information they had wanted during their antenatal care, and just over 10 percent would have liked to participate more in decision making during this period.

One general criticism of questionnaires is that often poor response rates are obtained (Oppenheim, 1992). This can result in bias, as perhaps the more vocal or the more satisfied return questionnaires (Oppenheim, 1992). Several strategies were used to avoid this. As part of the information given to women about the randomised controlled trial, the importance of obtaining their views through the questionnaires was stressed (prior to allocation to the arms of the trial). In addition, follow-up letters and questionnaires were sent to non-respondents as this can increase response rates (Oppenheim, 1992).

These strategies appear to have worked as good response rates were obtained for both questionnaires (87% and 69%). Although less than those obtained by the "*Know your midwife*" scheme (85% to 99%), the response rates were similar to those obtained by MacVicar et al in 1993 (69% to 73%). Also, since no significant differences were found between the characteristics of respondents and non-respondents the possibility of bias was reduced.

Although the advantage of questionnaires is that they can be sent easily and cheaply to a large sample of women, the reliability of the information collected has been questioned (Cartwright et al, 1987; Martin, 1987; Oppenheim, 1992). However, previous studies have identified that reliable and valid information can be collected on a variety of pregnancy events through questionnaires (Cartwright et al, 1987; Martin, 1987). Nevertheless, it has been suggested that the depth and individuality of information can be lost and that the questionnaire may not always be understood by the recipients (Oppenheim, 1992).

Extensive piloting was conducted to avoid some of these pitfalls and open-ended questions were included in the questionnaires. Response scales and attitude scales were used for closed questions, as these have been shown to elicit more information (Ware et al, 1983). In addition, the scales were varied to reduce response bias, and to increase validity, multi-item scales were used and then collated to obtain mean attitude scores (Ware et al, 1983; Oppenheim, 1992). A Q Sort procedure was also successfully carried out to test the discriminant validity of the Likert scale (Anastasi, 1976).

The other method of data collection used was retrospective review of the case-records and Care Plan. Although the reliability of data collected from case-records has sometimes been questioned this helped to verify the information gathered through the questionnaires (Martin, 1987; Cartwright et al, 1987). For example, women reported that their named midwife was the main care provider in the antenatal period and the signature count confirmed this was the case. However, as it has been suggested case-records underestimate the frequency with which events and interventions occur, and this must be acknowledged when interpreting the results (Cartwright et al, 1987).

Coder bias may also be present when extracting information from records, therefore a random five percent sample of records were checked by the author for the level of inter-rater reliability. Although the level of agreement was relatively high (75%), this must also be taken into account. The information recorded by women in the Care Plan was collected retrospectively and could also be affected by coder bias. However, the data collection form was piloted by the author and then the coders, and ongoing training sessions were held on extraction of information from the Care Plans (by the author).

Although the above strategies were used to increase the validity of the methods used, it must be acknowledged that there was no control group, which limits the generalisability of the results. However, it should be reiterated that the study was complementary to the randomised controlled trial and provided the midwifery team with valuable information on the standard of care within the new midwife-managed programme. The study allowed ongoing evaluation and feedback to care providers.

Results were presented as they arose to the group who developed the service specifications and to the midwives who were providing care. This was particularly beneficial in updating the consumers, midwifery managers and midwives on the progress of the new care programme at an early stage. In addition, while the randomised controlled trial measured the level of satisfaction with midwife-managed care compared with shared care, this study included questions only relevant to women receiving the midwife-managed care programme which could not be addressed in the trial.

The following three service specifications were evaluated:

**Continuity of carer:** *Healthy women being cared for by the MDU midwives can expect to be cared for by a named midwife and three associate midwives from booking through to transfer to the health visitor postnatally.*

**Individual informed care planning:** *The MDU will facilitate individual informed Care Planning. Each woman will hold her own Midwifery Care Plan which will contain clinical progress notes as well as her personal choices for care antenatally, postnatally as well as her Birthplan. During the final episode of care the midwife will evaluate the Care Plan with the woman prior to it being returned to the case-record.*

**Information and choice:** *Every woman being care for in the MDU will receive a Basic Information Pack. In addition, there will be an ongoing assessment of specific information requirements which will be tailored to the individual woman's circumstances. The midwife will allow time to discuss information and choice with each woman.*

## 7.6 CONTINUITY OF CARER

One of the main outcomes from the study was the finding in relation to continuity of carer, with the service specification achieved for just over half the women (54%). In the antenatal period, most women were cared for by their named midwife demonstrating that continuity of carer could be attained during planned episodes of care. However, further investigation revealed that the service specification was more difficult to maintain during the intrapartum and postnatal periods which were largely unplanned episodes of care.

Although only 54 percent of women were cared for by up to four midwives, the results demonstrated that almost 80 percent were cared for by up to five midwives and 90 percent were cared for by up to six. Therefore a service specification which included one named midwife and either four or five associate midwives (rather than three) may be more realistic. These figures would certainly seem reasonable given that other team midwifery schemes can include an average of 11 to 13 midwives per team (Wraight et al, 1993). Also, although in some schemes care is provided by approximately four midwives these would appear to be atypical (Flint, 1988; Frohlich, 1989).

However, this finding illustrates the difficulty associated with defining an achievable service specification in the absence of research about what is a realistic standard for continuity of carer. Although there have been many descriptions of similar schemes established with the aim of improving continuity of carer, evaluation has generally elicited whether continuity was improved rather than defined a realistic, achievable standard (Murphy-Black 1992a, Wraight et al 1993).

The "*Know your midwife*" scheme which has formed the basis for many subsequent initiatives aimed to provide care by four midwives (Flint, 1988). However results from the randomised controlled trial only identified the number of women who saw fewer than eight care providers during pregnancy. There was no information on the number of women who had in fact received care from four midwives (Flint et al, 1989). Such schemes involved midwives going "on call" to be available for women in labour (Flint, 1988; Keats, 1993; Nightingale, 1994). However, within the Midwifery Development Unit this was not the case, as the midwife on duty in labour ward provided care for any women (in the midwife-managed care programme) admitted in labour. Since this may have introduced a new care provider, perhaps if the midwives did use an "on call" system the number of carers could be reduced. However, at the outset the midwives did not want the onerous commitment associated with being "on call" and their satisfaction must also be considered.

Overall, given that the service specification was written on the basis of what the midwives and consumers thought *could* be achieved rather than on previous evidence of what was possible, perhaps the specification was not too far amiss. In addition, results from this study must be taken in context of the wider evidence available from the randomised controlled trial. Results from the trial identified that continuity of carer was significantly enhanced with midwife-managed care when compared to shared care. Also, women in the midwife-managed group were significantly more satisfied with the number of care providers they saw compared with women in the shared care group (Midwifery Development Unit, 1995a).

As previously mentioned, the midwife-managed care programme did not guarantee that the woman's named midwife would be available for her labour and delivery. However, the recent Changing Childbirth Report has set a target of 75 percent of women being delivered by someone they know by 1997 (Department of Health, 1993). Therefore, the importance to women of "knowing" the person who cared for them in labour was examined. The directive from the Department of Health has led to a verbal debate amongst care providers as to the meaning of "know". Since recent government reports have not suggested a definition, it is unclear how often a woman needs to meet someone in order that for her to "know" that person. In view of this ambiguity, for this study the definition of "know" was left to the woman.

The majority of women reported that it was important they already knew the person who cared for them in labour (69%). However, this proved to be a complex issue with a significant linear relationship found between how important the issue was to the woman and what her experience had been. Women who were delivered by their named midwife were significantly more likely to report that it was extremely important they already knew the person who cared for them in labour. In contrast, women who had been delivered by someone else, were more likely to reply that it was only moderately or not at all important that they already knew the person. This finding would support the theory of "what is, must be best" described by Porter and MacIntyre in 1984. They found that women tended to justify the care they had received, considering that it must have been the best of the available options. In addition, Porter and MacIntyre (1984) identified that when asked for their preferences in relation to care, women tended to opt for what they had already experienced.

Considering the larger picture, findings from the randomised controlled trial illustrated that women in the midwife-managed group consistently demonstrated higher levels of satisfaction, even at seven months after birth, when compared with the shared care group (Midwifery Development Unit, 1995a). With these results achieved despite the fact that the midwife-managed programme did not guarantee a known person at delivery, this further complicates the issue. In light of these findings, a more detailed investigation would be required to reliably measure the importance to women of knowing the person at delivery .

## **7.7 INDIVIDUAL INFORMED CARE PLANNING**

The second service specification was facilitated by a client-held Care Plan. Although previous studies have examined the success of client-held case-records, a Care Plan with pages designated for women to use has not been described (Lovell et al, 1986; Elbourne et al, 1987).

Within the service specification every woman in the midwife-managed care programme was to receive her own Care Plan and 98 percent of women reported that this occurred. The results demonstrated that women found the Care Plan useful for gaining information, and discussing their pregnancy and any preferences they had in relation to care. Since the aim of the Care Plan was to facilitate communication between the woman and her care providers, it would appear to have fulfilled its purpose in this respect. This was consistent with findings from other studies where women carried their own case-records and found this improved communication significantly (Lovell et al, 1986; Elbourne et al, 1987).

A de-briefing session was described in the service specification, during which women could record their experiences in the Care Plan. It was also intended that women would record their preferences and personal choices for care in the Care Plan. However, the findings appeared contradictory in relation to this. Although the majority of women (81%) reported thinking that being able to record information was a "good idea", they did not actually write on all the pages available to them.

Women used the "Talkback" most often (comments written in 96% of Care Plans), which would suggest they valued the de-briefing session at the end of their care and enjoyed writing comments about their care overall. The only other page used with any frequency was the "Birthplan", although this was used by less than a third of women (32%). This would support other findings from the study which suggested that care during labour is extremely important to women. For example, when women were asked what information they had wanted or what aspects of care they wished to participate in, labour and delivery were the most commonly mentioned areas. Also, Birthplans have been used in the past as a way of achieving individualised care for women (Murphy-Black, 1992b).

Overall, the results from this study would suggest that offering women four pages for documenting preferences is too much. Since there are no similar studies in this area, it is difficult to know whether this was due to the client group sampled or whether it would be common to women in general. For this client group, one page for de-briefing and one page where they could record what was important to them would appear to be sufficient. However with time, perhaps women would become more accustomed to recording information in this way and make more use of the pages available to them.

To summarise, women were asked whether they would like a Care Plan in a future pregnancy and the majority responded that they would (95%). However, since it has already been demonstrated that women will opt for what they have experienced before when asked for their preferences, the limitations of this finding must be acknowledged (Porter & MacIntyre, 1984). Nevertheless, women responded positively to the Care Plan overall, and it appeared to help them participate in their care. This would support the findings of other studies in relation to client-held records, where women were more likely to have felt in control of their care and to be aware of the progress of their pregnancy (Lovell et al, 1986; Elbourne et al, 1987; West, 1994).

Although a survey of systems of maternity care carried out in Scotland in 1992 identified that 88 percent of units were using care plans, there remains little information on the success of these plans (Murphy-Black, 1992b). It is therefore difficult to compare results from this study with others. However, it seems clear that client-held records are popular with women and it is evident that women want to be active partners in their care (Lovell et al, 1986; Elbourne et al, 1987; House of Commons Health Committee, 1992; West 1994). Indeed, the recent Changing Childbirth Report has included a directive that within five years all women should carry their own case-records, if that is what they want (Department of Health, 1993). In view of this, and since there is no evidence to suggest having ownership of records is detrimental to women, perhaps the Care Plan should be taken a step further at Glasgow Royal Maternity Hospital and not restricted to women receiving midwife-managed care (Gilhooly & McGhee, 1991).

In addition, the CRAG/SCOTMEG Working Group on Maternity Services (1995) has recently produced a best practice model of antenatal care which includes a client-held case-record. Within this record is a care plan which was developed as a result of findings from this study.

## **7.8 INFORMATION AND CHOICE**

The third service specification revolved around information and choice. As part of this all women allocated to the midwife-managed care programme were to be given a basic Information Pack. As almost 90 percent of women reported receiving the Pack, this part of the specification was achieved for the majority of women.

Women were also to be given tailored information throughout the remainder of their care, however the results in relation to this were rather surprising. When asked whether they had wanted specific information during their antenatal care, only 31 percent of women replied that they had. This would seem a small proportion and might be attributed to several factors. Within the midwife-managed care programme, women received parenthood education on an individual basis. Therefore, information may have been tailored in a way that meant women's questions had been answered during the course of their care. Also, with the question asked at 34-35 weeks gestation, women may have perceived it as meaning did they want particular information at that time, rather than at any time during pregnancy.

Otherwise it may mean that the majority of women surveyed simply did not want specific information. Indeed, considering the socio-demographic characteristics of the women, perhaps this was a relatively high proportion of less vocal women demonstrating that they have specific information requirements.

When these women were asked whether they had been given the information they wanted, 24 percent reported only receiving "some", "little" or "none" of that information. This was consistent with findings from other studies, where women reported wanting more information than they had been given (Reid & Garcia, 1989). In addition, the proportion of women who were dissatisfied with the amount of information they were given is similar to that found previously. Studies by Jacoby (1988) and Flessig (1993) identified that around a fifth of women wanted more information on some aspect of their care throughout pregnancy or childbirth. Therefore, it appeared that for some women the service specification in relation to tailored information could have been improved. However, as in other studies, the women surveyed here were generally satisfied in relation to information giving with a highly positive attitude score obtained from the Likert scale (Jacoby, 1988; Flessig 1993).

In relation to choice, the majority of women reported that it was important they "had a say" during their antenatal care (95%). During piloting of the questionnaires, it became evident that "having a say" was how women termed "participating in their care", in that they were given choices and were able to contribute to decision making. This confirmed that local women expressed the same needs for choice in relation to care as women nationally (House of Commons Health Committee, 1992).

The areas in which women wanted "a say" were mainly in relation to labour (41%) and interventions (20%). Similarly, when women wanted specific information it was often related to labour (37%) and tests (11%). Both these findings suggest that events during the intrapartum period and interventions in general are important to women, which has been found previously (Reid & Garcia, 1989). When asked how much they had been able to participate during their antenatal care, the majority of women reported "as much as they wanted", with 12 percent reporting less than they wanted. Since over 10 percent of women were dissatisfied with the amount of participation, this supports previous findings that although care providers claim to provide choice, the way in which it is offered could be improved (Reid & Garcia, 1989; House of Commons Health Committee, 1992). However, overall women demonstrated positive attitudes in relation to choices and decisions for care with high scores obtained from the Likert Scale, supporting the finding that women had been able to participate in their care.

## Chapter 8: Conclusion

Overall, the results from the study demonstrated that the service specifications set for individual informed care planning and information and choice were achieved for the majority of women. However, the specification set for continuity of carer proved more difficult to maintain and required review. In general, women were highly satisfied with the way care was delivered in relation to the service specifications, and had a strong degree of identification with their named midwife.

QAMID proved a good model to employ when developing, implementing and evaluating the new programme of care. The model follows the normal quality assurance cycle, with the unique feature being that it is driven by users of the service. Perhaps due to this, care needs to be taken to ensure realistic and achievable service specifications are generated, particularly in areas where women's expectations may be high.

While the limitations of this study must be realised, it provided the midwifery team with valuable information on the care being delivered within the new midwife-managed programme. In addition, the study illustrated areas where the programme could be improved, and identified where an unrealistic standard of care had been set.

On completion of the project the following two recommendations were made and have subsequently been acted upon by the midwifery team:

1. The service specification set for continuity of carer should be reviewed, perhaps to include five or six midwives. Also, it should be re-audited about six to nine months after implementation, and then as an ongoing process.

2. The Care Plan should be updated in line with findings from the study. The number of pages designated for women to use should be reduced, and prompts should be included to encourage women to record information. Women's views on the Care Plan should be re-examined following implementation of the change.

The study also identified that more detailed research was required in relation to the issue of a known person at delivery. This is particularly important given the directive by the Changing Childbirth Report that 75 percent of women should know the person who delivers them by 1997 (Department of Health, 1993).

Although the absence of a control group limits the generalisability of the results, this study has provided a good measure of women's reactions to the innovative service offered within the Midwifery Development Unit at Glasgow Royal Maternity Hospital.

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# Appendix 1

## Antenatal questionnaire

**SOME WOMEN IN GLASGOW ROYAL MATERNITY HOSPITAL ARE CURRENTLY BEING CARED FOR BY THE MIDWIFERY DEVELOPMENT UNIT (SOMETIMES CALLED THE MDU OR THE MIDWIFE UNIT).**

82. Are you being cared for by this Unit?

- Yes
- No
- Not sure

**Circle one number only**

- 1\_\_ Go to Question 85
- 2\_\_ Go to Question 83
- 3\_\_ Go to Question 83

**You may have received a Care Plan. This is a booklet with pink and white pages and a white plastic cover. You bring this to your visits and your midwife writes on it.**

83 Have you ever been given a Care Plan to take home with you?

- Yes, at my first visit to the hospital
- Yes, soon after my first visit to the hospital
- Yes, towards the middle of my pregnancy
- Yes, towards the end of my pregnancy
- No, never
- Not sure

**Circle one number only**

- 1
- 2
- 3
- 4
- 5
- 6

**You may have received an MDU information pack. This is a brown folder containing leaflets about pregnancy.**

84. Have you ever been given an MDU information pack?

- Yes, at my first visit to the hospital
- Yes, soon after my first visit to the hospital
- Yes, towards the middle of pregnancy
- Yes, towards the end of my pregnancy
- No, never
- Not sure

**Circle one number only**

- 1
- 2
- 3
- 4
- 5
- 6

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE  
PLEASE RETURN IT IN THE PREPAID ENVELOPE PROVIDED**

**WE ARE PARTICULARLY INTERESTED IN YOUR EXPERIENCES IN THE MIDWIFERY DEVELOPMENT UNIT. THE NEXT SERIES OF QUESTIONS ARE SPECIFICALLY RELATED TO THIS.**

85. Please describe what MDU care means to you.

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**You may have received a Care Plan. This is a booklet with pink and white pages and a white plastic cover. You bring this to your visits and your midwife writes on it.**

86. Have you ever been given a Care Plan to take home with you?

- |  | <b><u>Circle one number only</u></b> |
|--|--------------------------------------|
| Yes, at my first visit to the hospital         | 1__ Go to Question 87                |
| Yes, soon after my first visit to the hospital | 2__ Go to Question 87                |
| Yes, towards the middle of my pregnancy        | 3__ Go to Question 87                |
| Yes, towards the end of my pregnancy           | 4__ Go to Question 87                |
| No, never                                      | 5__ Go to Question 94                |
| Not sure                                       | 6__ Go to Question 94                |

87. Can you write the name of your midwife without having to look in your Care Plan?

- |                        | <b><u>Circle one number only</u></b> |
|------------------------|--------------------------------------|
| Yes, her name is ..... | 1__ Go to Question 89                |
| No, I don't remember   | 2__ Go to Question 88                |

88. Although you may not remember her name, would you know her by sight?

- |                 | <b><u>Circle one number only</u></b> |
|-----------------|--------------------------------------|
| No, Not at all  | 1                                    |
| No, not really  | 2                                    |
| Yes, probably   | 3                                    |
| Yes, definitely | 4                                    |

**Please turn over the page now**

89. How satisfied are you with the way the MDU midwives explained your Careplan?

	<u>Circle one number only</u>
Not at all satisfied	1
Only moderately satisfied	2
Satisfied	3
Very satisfied	4
Extremely satisfied	5

90. How easy is it to understand what the MDU midwives write in your Careplan?

	<u>Circle one number only</u>
Not at all easy	1
Only moderately easy	2
Easy	3
Very easy	4
Extremely easy	5

91. How useful is the Care Plan in helping you to talk about your pregnancy with the MDU midwives?

	<u>Circle one number only</u>
Extremely useful	1
Very useful	2
Useful	3
Only moderately useful	4
Not at all useful	5

92. How useful is the Care Plan in helping you to discuss anything you may want during your care?

	<u>Circle one number only</u>
Not at all useful	1
Only moderately useful	2
Useful	3
Very useful	4
Extremely useful	5

93. How useful is the Care Plan in helping you to get information about how your pregnancy is progressing?

	<u>Circle one number only</u>
Extremely useful	1
Very useful	2
Useful	3
Only moderately useful	4
Not at all useful	5

**Please go to the next page now**

**You may have received an MDU information pack. This is a brown folder containing leaflets about pregnancy.**

94. Have you ever been given an MDU information pack?

**Circle one number only**

- |  |   |
|--|---|
| Yes, at my first visit to the hospital         | 1 |
| Yes, soon after my first visit to the hospital | 2 |
| Yes, towards the middle of my pregnancy        | 3 |
| Yes, towards the end of my pregnancy           | 4 |
| No, never                                      | 5 |
| Not sure                                       | 6 |

95. Is there anything in particular you wanted information on during your antenatal care?

**Circle one number only**

- |                 |                       |
|-----------------|-----------------------|
| Definitely not  | 1__ Go to Question 98 |
| No, not really  | 2__ Go to Question 98 |
| Yes, probably   | 3__ Go to Question 96 |
| Yes, definitely | 4__ Go to Question 96 |

96. Can you tell me what this was?

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97. Have your MDU midwives given you any of this information?

**Circle one number only**

- |                                       |   |
|---------------------------------------|---|
| Yes, all of the information I wanted  | 1 |
| Yes, most of the information I wanted | 2 |
| Some of the information I wanted      | 3 |
| Little of the information I wanted    | 4 |
| None of the information I wanted      | 5 |
| Not sure                              | 6 |

98. How important is it that you have a say in what happens to you during your antenatal care?

**Circle one number only**

- |                           |                        |
|---------------------------|------------------------|
| Not at all important      | 1__ Go to Question 101 |
| Only moderately important | 2__ Go to Question 101 |
| Important                 | 3__ Go to Question 99  |
| Very important            | 4__ Go to Question 99  |
| Extremely important       | 5__ Go to Question 99  |

**Please turn over the page now**

99. With MDU antenatal care, how much of a say do you have in what happens to you?

**Circle one number only**

- |                              |   |
|------------------------------|---|
| I don't really want a say    | 1 |
| As much as I want            | 2 |
| Nearly as much as I want     | 3 |
| Not nearly as much as I want | 4 |
| None at all                  | 5 |

100. What things are important for you to have a say in?

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If nothing in particular, please tick box

**The following questions are specifically about your MDU midwife or midwives**

<b>Example</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Not Sure</b>	<b>Dis-Agree</b>	<b>Strongly Disagree</b>
My MDU midwives are friendly.	1	2	3	4	5
A circle around 3 shows this woman is not sure if her MDU midwives are friendly.					

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Not Sure</b>	<b>Dis-Agree</b>	<b>Strongly Disagree</b>
101. My MDU midwives spend time to find out what information I want.	1	2	3	4	5
102. It is easy to discuss things with my MDU midwives	1	2	3	4	5
103. My MDU midwives consider my home circumstances when giving me information.	1	2	3	4	5
104. I find it hard to talk to my MDU midwives.	1	2	3	4	5

**Please go to the next page now**

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Not Sure</b>	<b>Dis-Agree</b>	<b>Strongly Disagree</b>
105. My MDU midwives give me information which applies to me.	1	2	3	4	5
106. My MDU midwives are sensitive to my feelings.	1	2	3	4	5
107. My MDU midwives pay little attention to my wishes.	1	2	3	4	5
108. My MDU midwives give me little time to ask questions.	1	2	3	4	5
109. My MDU midwives answer my questions in a way that I can understand.	1	2	3	4	5
110. My MDU midwives give me information which is of little use to me.	1	2	3	4	5
111. My MDU midwives treat me like an individual.	1	2	3	4	5
112. My MDU midwives try to meet my requests.	1	2	3	4	5
113. My MDU midwives give me information which I find hard to understand.	1	2	3	4	5
114. My MDU midwives involve me in my care.	1	2	3	4	5

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE  
PLEASE RETURN IT IN THE PREPAID ENVELOPE PROVIDED**

## Appendix 2

### Postnatal questionnaire

**SOME WOMEN IN GLASGOW ROYAL MATERNITY HOSPITAL WERE CARED FOR BY THE MIDWIFERY DEVELOPMENT UNIT(SOMETIMES CALLED THE MDU OR MIDWIFE UNIT) DURING THEIR PREGNANCY AND AFTER THE BIRTH OF THEIR BABY.**

138. Were you cared for by this unit? **Circle one number only**  
Yes **1** Go to Question 148  
No **2** Go to Question 162
139. Who was the MAIN person who looked after you during your antenatal care before you had your baby? **Circle one number only**  
My MDU midwife 1  
Another MDU midwife 2  
Midwife at GP's surgery 3  
GP 4  
Hospital midwife 5  
Hospital doctor 6
140. Was this the same person who MAINLY looked after you postnatally after your baby was born? **Circle one number only**  
Not at all **1** Go to Question 141  
Rarely **2** Go to Question 141  
Sometimes **3** Go to Question 141  
Most of the time **4** Go to Question 142  
All of the time **5** Go to Question 142
141. Who was the MAIN person who looked after you during your postnatal care? **Circle one number only**  
My MDU midwife 1  
Another MDU midwife 2  
Hospital midwife 3  
GP 4  
Hospital doctor 5  
Not sure 6

**Please turn over the page now**

**Think back to your antenatal care before you had your baby**

142. Overall how often do you feel your antenatal care was planned

to suit you ?

**Circle one number only**

Not at all

1\_\_ Go to Question 143

Rarely

2\_\_ Go to Question 143

Sometimes

3\_\_ Go to Question 143

Most of the time

4\_\_ Go to Question 144

All of the time

5\_\_ Go to Question 144

143. Can you tell us about this ?

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144. How much did the MDU midwives encourage you to write any questions, preferences or choices in your Careplan ?

**Circle one number only**

I didn't want to write anything

1

Not at all

2

Not as much as I wanted

3

As much as I wanted

4

More than I wanted

5

145. What do you think about being able to write things down ?

**Circle one number only**

I think this is a good idea

1

I'm not bothered one way or another

2

I don't really see the point in this

3

Not sure

4

146 Before you had your baby, who did you expect would care for you during labour ?

**Circle one number only**

One of the hospital midwives in the labour ward

1

I thought my MDU midwife would care for me in labour

2

I thought a hospital doctor would care for me during labour

3

MY MDU midwife if she was on duty and available,

otherwise another MDU midwife

4

I wasn't sure who would care for me during labour

5

**Please go to the next page now**

**Think about your labour and the birth of your baby.**

147. Looking back on all of your MDU care now , how important is it that you already know the person who cares for you during labour ?

**Circle one number only**

- |                           |   |
|---------------------------|---|
| Extremely important       | 1 |
| Very important            | 2 |
| Important                 | 3 |
| Only moderately important | 4 |
| Not at all important      | 5 |

148. Can you tell us about your opinion on this ?

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149. Did you write any preferences or choices for labour in your Birthplan ?

**Circle one number only**

- |                          |                        |
|--------------------------|------------------------|
| I didn't really have any | 1__ Go to Question 151 |
| No                       | 2__ Go to Question 151 |
| Yes                      | 3__ Go to Question 150 |

150. How much did the MDU midwives refer to your Birthplan during labour ?

**Circle one number only**

- |                   |   |
|-------------------|---|
| Enough            | 1 |
| Not nearly enough | 2 |
| Not at all        | 3 |
| Not sure          | 4 |

**Think about your postnatal care after you had your baby**

151. During your antenatal care, had you planned when to go home after your baby was born ?

**Circle one number only**

- |     |                        |
|-----|------------------------|
| Yes | 1__ Go to Question 152 |
| No  | 2__ Go to Question 153 |

152. When did you plan to go home ?

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**Please turn over the page now**

153. After your baby was born, did you go home as you had planned ?
- |  | <u>Circle one number only</u> |
|--|-------------------------------|
| Yes  | 1                             |
| No, I didn't want to at the time                                 | 2                             |
| No, after discussing it with the MDU midwives<br>my plan changed | 3                             |
| No, but I'm not sure why   | 4                             |

154. When you were at home, how often did you know which MDU midwife would be visiting you next ?
- |                  | <u>Circle one number only</u> |
|------------------|-------------------------------|
| Not at all       | 1                             |
| Rarely           | 2                             |
| Sometimes        | 3                             |
| Most of the time | 4                             |
| All of the time  | 5                             |

**Think back to your last visit with the midwife before you saw the health visitor.**

155. During this visit, how much did the midwife discuss your pregnancy and the care you received ?
- |                                    | <u>Circle one number only</u> |
|------------------------------------|-------------------------------|
| I didn't really want to discuss it | 1                             |
| Not at all                         | 2                             |
| Not nearly as much as I wanted     | 3                             |
| Nearly as much as I wanted         | 4                             |
| As much as I wanted                | 5                             |

156. During this visit, were you encouraged to write down any comments you had about MDU care in your Careplan ?
- |                                 | <u>Circle one number only</u> |
|---------------------------------|-------------------------------|
| Yes, as much as I wanted        | 1                             |
| Nearly as much as I wanted      | 2                             |
| Not nearly as much as I wanted  | 3                             |
| No not at all                   | 4                             |
| I didn't have anything to write | 5                             |

157. Looking back now, when do you feel your Careplan was of most use to you ?
- |                                | <u>Circle one number only</u> |
|--------------------------------|-------------------------------|
| I didn't find it useful at all | 1                             |
| During my pregnancy            | 2                             |
| During my labour               | 3                             |
| After I had the baby           | 4                             |
| It was useful all the time     | 5                             |

**Please go to the next page now**

158. Would you like a Care Plan if you had another baby ?

**Circle one number only**

- |                 |   |
|-----------------|---|
| No, not at all  | 1 |
| No, not really  | 2 |
| Yes probably    | 3 |
| Yes, definitely | 4 |

159. What did you like most about being cared for by the Midwifery Development Unit ?

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160. What did you like least about being cared for by the Midwifery Development Unit?

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161. If you had another baby, what type of care would you prefer ?

**Circle one number only**

- |   |   |
|---|---|
| Care shared between hospital doctor, GP and midwife | 1 |
| MDU midwife only care                               | 2 |
| Another type of care                                | 3 |
| I don't really mind                                 | 4 |

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE  
PLEASE RETURN IT IN THE PREPAID ENVELOPE PROVIDED**

## Appendix 3

### Data collection form - continuity of carer

<b>MDU NUMBER</b>				
<b>ARM NUMBER</b>	1. MDU			
	2. Non-MDU			

	<u>YES</u>	<u>NO</u>
IN ANN'S SAMPLE	1	0

TOTAL NUMBER OF ANTENATAL VISITS BY MDU MIDWIVES  
(EXCLUDING ADMISSIONS AND DAYCARE ATTENDANCE'S) □ □

OF THESE, TOTAL NUMBER GIVEN BY NAMED MIDWIFE □ □

	Number of different:				
	MDU Midwives seen	GRMII Midwives seen	GRMII Doctors seen	GP'S seen	Unknown
ANTE	□ □	□ □	□ □	□ □	□ □
INTRA	□ □	□ □	□ □	□ □	□ □
POST	□ □	□ □	□ □	□ □	□ □

	Number of different:				
	MDU Midwives seen	GRMII Midwives seen	GRMII Doctors seen	GP'S seen	Unknown
OVERALL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

TOTAL NUMBER OF HOSPITAL POSTNATAL CHECKS  
SIGNED BY MDU MIDWIVES

OF THESE, TOTAL NUMBER SIGNED BY NAMED MIDWIFE

TOTAL NUMBER OF COMMUNITY VISITS SIGNED BY MDU  
MIDWIVES (EXCLUDING MISSED VISITS)

OF THESE, TOTAL NUMBER SIGNED BY NAMED MIDWIFE

# Appendix 4

## Data collection form - Care Plan

<b>MDU NUMBER</b>				
<b>MIDWIFE</b>				

### PREGNANCY AND BIRTHPLAN

<b>QUANTITY WRITTEN</b>	Nothing	0																					
	Less than 1/2 page	1																					
	1/2 - 1 page	2																					
	More than 1 page	3																					
<b>CONTENT</b>		<u>Yes</u>	<u>No</u>																				
	Preferences	1	0																				
	+ve comments	1	0																				
	-ve comments	1	0																				
	Record of discussion/events	1	0																				
	Other	1	0																				
<b>SUBJECTS</b>	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																						



**BIRTHPLAN CONT'D**

<b>CONTENT</b>	<u><b>Yes</b></u>	<u><b>No</b></u>
Preferences	1	0
+ve comments	1	0
-ve comments	1	0
Record of discussion/events	1	0
Other	1	0

**SUBJECTS**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**POSTNATAL PLAN**

<b>QUANTITY WRITTEN</b>	Nothing	0
	Less than 1/2 page	1
	1/2 - 1 page	2
	More than 1 page	3

<b>CONTENT</b>	<u><b>Yes</b></u>	<u><b>No</b></u>
Preferences	1	0
+ve comments	1	0
-ve comments	1	0
Record of discussion/events	1	0
Other	1	0

**SUBJECTS**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**TALKBACK**

<b>QUANTITY WRITTEN</b>	Nothing	0																					
	Less than 1/2 page	1																					
	1/2 - 1 page	2																					
	More than 1 page	3																					
<b>CONTENT</b>		<u>Yes</u>	<u>No</u>																				
	Preferences	1	0																				
	+ve comments	1	0																				
	-ve comments	1	0																				
	Record of discussion/events	1	0																				
	Other	1	0																				
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<b>CAREPLAN COMPLETED BY</b>	Woman	1
	Midwife	2
	Both	3