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**PRE-CONCEPTION CARE: CURRENT PRACTICE AND  
METHODS OF PROVISION**

**Vol 1**

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**Doctor of Philosophy**

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THE UNIVERSITY OF ASTON IN BIRMINGHAM

**PRE-CONCEPTION CARE: CURRENT PRACTICE AND  
METHODS OF PROVISION**

A thesis submitted in 1988 for the Degree of Doctor of Philosophy

by Maureen Anne Lyons

This thesis examines the present provisions for pre-conception care and the views of the providers of services. Pre-conception care is seen by some clinicians and health educators as a means of making any necessary changes in life style, corrections to imbalances in the nutritional status of the prospective mother (and father) and the assessment of any medical problems thus maximizing the likelihood of the normal development of the baby. Pre-conception care may be described as a service to bridge the gap between the family planning clinic and the first ante-natal booking appointment.

There were three separate foci for the empirical research - the Foresight organisation (a charity which has pioneered pre-conception care in Britain); the pre-conception care clinic at the West London Hospital, Hammersmith; and the West Midlands Regional Health Authority.

The six main sources of data were: twenty five clinicians operating Foresight pre-conception clinics, couples attending pre-conception clinics, committee members of the Foresight organisation, staff of the West London Hospital pre-conception clinic, Hammersmith, District Health Education Officers working in the West Midlands Regional Health Authority and the members of the Ante-Natal Care Action Group, a sub-group of the Regional Health Advisory Group on Health Promotion and Preventive Medicine.

A range of research methods were adopted. These were as follows: questionnaires and report forms used in co-operation with the Foresight clinicians, interviews, participant observation, discussions and informal meetings and, finally, literature and official documentation.

The research findings illustrated that pre-conception care services provided at the predominantly private Foresight clinics were of a rather 'ad hoc' nature. The type of provision varied considerably and clearly reflected the views held by its providers. The protocol which had been developed to assist in the standardization of results was not followed by the clinicians. The pre-conception service provided at the West London Hospital shared some similarities in its approach with the Foresight provision; a major difference was that it did not advocate the use of routine hair trace metal analysis.

Interviews with District Health Education Officers and with members of the Ante Natal Care Action Group revealed a tentative and cautious approach to pre-conception care generally and to the Foresight approach in particular. The thesis concludes with a consideration of the future of pre-conception care and the prospects for the establishment of a comprehensive pre-conception care service.

Key words:

Pre-conception Care, Foresight Organisation, Health promotion

**This thesis is dedicated to my  
parents and family**

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## INTRODUCTION

This thesis examines the current provisions for pre-conception care and the views of some of those presently involved with these provisions. The origins of the research are as follows: the Foresight charity, established in 1978 to promote the concept of pre-conception care, made an approach to the Interdisciplinary Higher Degrees Scheme at Aston University in 1983 with a request for a postgraduate student to evaluate the efficacy of their private pre-conception care clinics. It became clear quite early in the research that Foresight was not the only provider of pre-conception care in Britain and so the scope of the study was enlarged to include data on non-Foresight provision, an aspect not originally envisaged by the Foresight organisation. This included an investigation of the views of the Foresight clinicians who were working primarily within the private sector and the views of clinic staff who were working within the National Health Service.

The research involved the use of five methods of data collection. These were: questionnaires and report forms, interviews, participant observation, informal discussion with health professionals and finally, literature and official documentation. Participants in the research were members of the Foresight Organisation, the Foresight clinicians, the West London Hospital clinic staff, District Health Education Officers and the members of the West Midlands Regional Health Authority Ante-Natal Care Action Group.

The orientation taken in this study has been one of "action research". According to Hult and Lennung (1980), this involves the following approach:

- (1) aims at action and research
- (2) provides a learning situation for the actors
- (3) is performed collaboratively
- (4) is undertaken within the problem situation
- (5) involves a cyclical flow of data
- (6) studies the problem as a whole

- (7) is used to implement change
- (8) falls within an acceptable ethical framework.

The study was thus an interactive one, involving a cycle of problem definition, data feedback and implementation of change, or rather recommendations for change! The account of the work undertaken is presented in nine chapters. Chapter One examines the relevant literature and discusses some of the central issues which are directly relevant to the thesis. Chapter Two presents a discussion of the implications of collaborative action research and provides details of the data collection methods adopted. Chapter Three describes the history and philosophy of the Foresight organisation and Chapter Four presents the data from the interviews with the Foresight clinicians indicating their approaches to pre-conception care. Chapter Five contains a detailed case study of the West London Hospital pre-conception care clinic. In Chapter Six the scope of the study is widened to review the development of the National Health Service and its influence upon the provision of existing and possible future pre-conception care services. Chapter Seven reports the views of health professionals - District Health Education Officers - on the subject of pre-conception care. Chapter Eight presents observations based on the authors membership of the West Midlands Regional Health Authority Ante-Natal Care Group. Chapter Nine summarises the study and its implications for future pre-conception care practice. In addition it presents a comparison of the West London Hospital and the Foresight pre-conception care provisions.

One of the principal objectives of the sponsoring organisation, the Foresight charity, was the creation of a data base derived from information on patients attending Foresight clinics undergoing pre-conception care screening tests. A computerized data base was set up, which can be added to by later researchers. A preliminary analysis of such information as was available at the time of writing is provided in Appendix Four. Appendices One, Two and Three provide the interview schedules and other documents used in the data collection process, whilst Appendix Five presents a published paper which the writer co-authored early in the research.

## **CHAPTER ONE**

### **THE BACKGROUND TO PRE-CONCEPTION CARE**

This chapter serves as a general introduction to the thesis by considering various definitions of the concept of pre-conception care and traces the development of the concept through a review of the work of a number of writers and researchers. It also reviews the most important of the wide range of pre- and peri-conceptual factors which have been identified as having important effects on the course and outcome of pregnancy, with special reference made to diet, nutrition and smoking. This chapter thus provides the backcloth against which the study was conducted.



The concept of pre-conception care has, over recent years, received increasing interest from both health professionals and from lay persons. As one writer has stated:

"Widespread comment on pre-conception care has already been generated in the scientific and popular press, despite the fact that this subject is itself still in the early stages of development". (Pickard, 1984, p 34)

Much of the literature on the subject of pre-conception care points to a "gap" in health care provision between Family Planning concerns and the ante-natal services. This missing service was highlighted in a British Medical Journal editorial in 1981, where it was argued that more information concerning early foetal development was necessary and the importance of pre-conception care was highlighted:

"If obstetric care is to reduce further the foetal wastage and the incidence of mal-formation, a better understanding of the first trimester of pregnancy is vital. Only by encouraging women to attend pre-conception clinics and thereby early pregnancy clinics can we hope to improve our knowledge of, and clinical management of this vital, and as yet largely ignored, period of human development". (British Medical Journal, 1981).

One of the major arguments for pre-conception care has been that conventional ante-natal care services miss some or even all of the first trimester of pregnancy. This is the period when embryonic organogenesis is taking place and when major malformations may already be established (Witchalls, 1981; Pickard, 1984). It would seem that it is at this time that the rapidly dividing cells are at their most vulnerable and may be affected by such factors as inadequate supplies of essential nutrients or the presence of toxic substances. It is suggested that, usually, by the time a woman visits her doctor for confirmation of her pregnancy she will have missed one or two of her periods, thus the single fertilised ovum will have multiplied and differentiated to become a complex human of more than one million cells:

"If one assumes that the weight of a human ovum and penetrated sperm is 0.005 mg and the foetal weight at 12 weeks is about 13g the foetal mass has increased by over 2.5 million times ... By comparison the further increase in foetal mass from 13g to about 3.0 kg at term is a mere 230 fold increase". (Witchalls, 1983 p7).

The maximum increase in cell number and in cell differentiation during the early months of pregnancy also include the period of organogenesis. The developing embryo is influenced by the environment of the uterus and in particular the content of the amniotic fluid. All the nutrients present in amniotic fluid must have first been present in the mother's blood. The blood content is a reflection of the mother's diet in that all the substances present must have been recently absorbed from the mother's gut or been derived from body stores in the mother. Pre-conception care is therefore seen by some clinicians and health educators as a means of making any necessary corrections of any imbalances in the nutritional status of the prospective mother (and possibly the father) thus maximizing the likelihood of the normal development of the baby.

Congenital birth defects and possible reasons for their cause are, of course, the subject of a vast literature, (Wynn and Wynn, 1981). Most of the defects that occur are seen as the result of abnormal genetic expression (Barlow, 1983). Gene expression is influenced not only by the presence of teratogenic substances such as cadmium and lead but Erway et al (1970) suggest that gene expression is also influenced by the lack of essential minerals such as manganese. There is an extensive literature derived from animal studies concerning the teratogenic effects of low levels of essential elements (Shaw, 1980; Hurley, 1981). Zinc, copper and manganese have been identified as very important elements for normal foetal development. Oberleas and Caldwell (1981) suggest that for many of the metal elements which are considered essential for health, no specific body storage sites have been identified. They maintain that magnesium, manganese and zinc seem to be dispersed throughout the body and thus, it is suggested to be important that an adequate supply of these minerals is available during the whole

gestation period.

Notwithstanding the above, a debate exists as to whether pre-conception care should be provided and, if it should, the form which such care should take. For example, should pre-conception care be provided at specialized clinics offering screening test facilities such as those offered at Foresight clinics, or should it be in the form of advice and part of "good health education" within the community? This debate is returned to later in the discussion.

The nature of pre-conception care and what it entails differs depending upon the perspectives of the different providers. Debate also exists concerning basic terminology. The Foresight organisation, which was established in 1978 to promote the concept and practice of pre-conception care (see Chapter Three) uses the term "pre-conceptual care". This term has been criticised on the grounds that "pre-conceptual" relates to an idea or something which is conceived mentally. The term "pre-conception care", however, relates specifically to reproduction and is therefore probably technically correct. This thesis uses the terminology "pre-conception care" and refers to "pre-conceptual care" only when discussing the Foresight organisation. A number of formal definitions of the concept of pre-conception care have been proposed. The author's view is that Haddad's definition provides the most useful summary of the concept.

"Pre-conception care may be visualised as a bridge between the contraceptive clinic and the first ante-natal booking appointment. It is a time when women want to do something constructive towards preparing for a major life event, when bad habits such as smoking and drinking can be changed and when personal fears and anxieties can be faced". (Haddad, 1985, p 60)

Others have defined the concept as follows:

"Pre-conception care is a time when medical problems should be evaluated and advice given. Broadly speaking it is seen as a time of preparation, when the partners can make a positive contribution to affect their chances of producing a healthy baby". (Pickard, 1984).

"By submitting themselves to a sort of pre-conceptual MOT test, couples could dramatically alter their own personal risk scale in favour of having the perfect healthy baby they want". (Hilton, 1982).

"Pre-conception care is an attempt to reduce, and if possible, to eliminate the known potentially harmful influences that can compromise the quality of a baby during its earliest days of life". (Witchalls, 1983, p 1).

The Foresight Organisation's definition is:

"... to take steps to secure optimal health and nutritional status in both parents prior to the conception of the baby". (Foresight, 1983).

Foresight is a most active and increasingly well-known (Braidwood, 1987) organisation calling for the introduction and provision of a national service of pre-conception care. Much of the literature which the organisation promotes identifies the positive contribution which couples can make in preparation for their pregnancy in reducing or eliminating possible problems of, for example, inadequate nutrition, exposure to environmental toxins and allergic responses. An important theme which is pervasive throughout the literature concerns the idea that a poor obstetric history does not occur by chance, but that it occurs as a result of specific causative factors. If action is taken prior to conception these factors may be altered to allow an improved pregnancy outcome. The literature therefore emphasises the ability of the prospective parents to make either positive or negative contributions to the pregnancy. Prospective parents are advised that if the recommendations of the Foresight Organisation are followed and the prospective parents adhere to the Foresight philosophy, the chances are greatly improved that labour will be easy and the baby perfect.

This view of prevention adopts the medical model of health that places emphasis upon the individual and, as such, does not threaten the existing ideology of health and illness (see Chapter Six). The overriding environmental factors and infra-structure which serve to constrain individual's abilities to alter behaviour or to affect their situations are ignored totally in this model of health. These issues are pertinent to the debate on pre-conception care and will be discussed in more detail later in this study.

## 1 The Development of Pre-conception Care

In tracing the historical development of the concept of pre-conception care it is helpful to begin with the work of Price (1945) and Pottenger (1946) which was reviewed by Witchalls (1981) in his discussion of the existence and progression of degenerative diseases among children and other segments of the population. Witchalls concluded that in Westernised societies many diseases of childhood appear to have a common aetiology and may be considered as degenerative. The writers whose work Witchalls reviewed, had made observations amongst widely different ethnic groups all over the world including New Zealand Maoris, North American Indians, Eskimos, Polynesians, and of isolated European communities in the Hebrides and a remote Swiss valley. Witchalls identified a pattern of degeneration which appeared the same wherever native diets were to a greater or lesser extent replaced by the Westernised societies diets rich in refined carbohydrate. Similar findings on the physical aspects of degeneration were provided by Burkitt and Trowell (1975), who consider the effects of the consumption of foods high in refined carbohydrates. They argue that these foods give rise to abdominal pain with increased constipation and appendicitis among populations consuming such diets. The work of Price (1945) attempts to provide evidence of concurrent mental and moral degeneration of populations in addition to their physical degeneration. In the Journal of the American Dental Association, Price in reference to the degenerative changes, writes:

"The forces that cause these changes are now demonstrated to be related to defects in the carriers of life of one or both parents, due to deficient nutrition prior to fertilisation and, in some phases, to faulty diet of the mother during the formative period of the child. While deformities of the body including the face and dental arches have formerly been assigned to heredity through the mixing of racial blood and to faulty habits in the early growth period, new data clearly relates much of this type of injury to defective germ cells". (Price, 1945).

The early antecedents of pre-conception care can be identified in the work of McCarrison (1936) and Williamson and Pearse (1938). Witchalls reports:

"Williamson and Pearse ... were aware of the importance of pre-conception overhauls in their quest, to study health". (1981, p 22).

Writing in The Listener (6 November, 1941) on "Educating a Healthy Nation" Pearse wrote:

"Health is a positive growing thing which has to be cultivated while the organism is in its youth. The human organism is the family. Its youth lies in courtship and marriage and that is where you must begin your cultivation of health".

Similarly Witchalls comments:

"A healthy plant derives from a healthy seed grown in a healthy soil; these doctors attempted first to remove the impediments of disease and disorder by reviewing the condition of member families at periodic physical overhauls". (Witchalls, 1981, p 22).

The essence of this approach is that the results of "periodic physical overhauls" should be discussed by doctors with families and the opportunity presented for anything that was not "right" to be corrected. An attempt should be made to remedy any nutritional deficiencies, especially in prospective parents. As a result:

"Bespoke" babies born to such parents and many others born within the Centre (Pioneer Health Centre, Peckham) membership had a quality widely recognised to be "different". (Pearse, 1941)

In addition to this work, an extensive array of literature based on animal studies also exists which suggests the importance of pre-conception care. This literature attempts to demonstrate that congenital defects can be reproduced in animals by the manipulation of their diet (Caldwell et al, 1970; Underwood, 1977). A typical procedure is for various single nutrients to be excluded from the animals feed, (see for example, the work of Hurley, 1968; Oberleas et al, 1972 and Caldwell, 1973).

This work can be identified as a basis upon which much of the subsequent development of the concept of pre-conception care has been based. The work of Pfeiffer and Barnes (1981), which discusses the role of zinc, manganese, chromium and various vitamin deficiencies in birth defects, draws heavily upon the literature on dietary manipulation in animal studies (eg. Apgar, 1973; Rickard, 1975) and on other work on the known vitamins, essential fatty acids and many of the trace minerals (eg. Hurley et al, 1961a; Bell et al, 1975). Successful reproduction in animals whose energy and protein requirements have been well met is reported to be dependent upon adequate vitamin and mineral status. Severe deficiencies of vitamins (Jennings, 1970) or of minerals (Underwood, 1977) may result in foetal malformation, growth retardation or death. These studies focus on male as well as female animals. Adequate nutrition is important for the male for successful reproduction, not only for the development of the testes, but also for their normal function (Leathem, 1975; Komatsu et al, 1982).

An example of this approach was a study of the effect of pre-conceptional vitamin deficiency in animals undertaken by Watteville et al, (1954), where it was found that the omission of any one of the vitamins A, B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub> or pantothenic acid from the diet of experimental rats for varying periods ranging from 35 to 13 days before mating, resulted in infertility or markedly decreased fertility. If the vitamin deficient diet was continued in those animals which did manage to conceive, fetal abnormalities and malformations frequently occurred, birth weight was lowered and mortality increased. These effects were not specific to any given vitamin but were reported to be dependent upon the duration of vitamin depletion.

Pre-conception care and counselling has developed slowly in Britain. Until recently, there have been few centres in this country where patients could attend for detailed pre-conception counselling. Haddad (1985) reports that one of the first pre-conception clinics was established in Edinburgh in 1976, to help insulin-dependent diabetics. Such patients are reported to be more likely to have babies with congenital

abnormalities than the normal population. In 1978, Chamberlain established a pre-conception clinic at Queen Charlotte's Hospital, London. This clinic has been mainly concerned with the medical and obstetric problems related to pregnancy. (Chamberlain et al, 1978).

More recently, the need for an assessment of lifestyle as well as for the treatment of specific problems related to pregnancy has been suggested. Since 1978 the Foresight organisation has helped to set up forty clinics (these are not part of the National Health Service). In addition, one clinic has recently been established as a pilot programme within the National Health Service at the West London Hospital, Hammersmith. These provisions will be discussed in detail later in this thesis.

It is important to consider the reasons why pre-conception care has gained increased attention in recent years. Pre-conception care, it may be argued, is nothing new and has been conducted in a less formal way for centuries. Information has passed from women to women, mother to daughter and may even have existed in the "old wives tales" concerning factors conducive to good health. With rapid social change (especially in the family with the trend from a large extended family to a small nuclear family), the arrangements which facilitated this communication have to some extent disintegrated. Increased mobility and separation has largely eroded this informal advice and care. These changes have not had as a profound effect upon specific groups, for example Asian communities where these links are still strong with a greater emphasis on kinship ties and the extended family. Increasingly, however advice on pregnancy, childbirth and child care has been disseminated by health professionals rather than mothers, aunts and friends. The professionalization and medicalization of health, especially since the setting up of the National Health Service, has taken health care to a considerable extent out of the hands of people themselves. Obstetrics is a comparatively recent branch of medicine, starting in the seventeenth century and progressing most rapidly in the second half of the eighteenth century. By the nineteenth century, a group of women calling themselves



'midwives' looked after the poor during childbirth. Chamberlain (1984) has reported that the society of Apothecaries in 1845, were the first to examine medical students in midwifery while in 1872 the London Obstetrical Society (the forerunner of the Royal Society of Medicine) granted the first proficiency certificates to midwives. The Midwives Act was passed in 1902 and the Central Midwives Training Body followed. Prior to this, virtually all deliveries occurred at home. It is suggested that with the increasing erosion of power of the role of the midwives brought about by the increased medicalization of childbirth, pre-conception care provides a means of reasserting their status and contribution to advising on matters relating to childbirth.

In order to comprehend the background to pre-conception care it is useful to discuss in detail the main factors which affect the outcome of a pregnancy and to consider some of the problems and ways these may be identified and overcome. Factors to be considered include (i) age, birth interval and previous pregnancy experience, (ii) methods of contraception, (iii) nutrition, including vitamin and mineral status, (iv) medical conditions, (v) drug and smoking habit, (vi) alcohol use, (vii) occupational hazards and environmental hazards. The range and complexity of factors is thus considerable, but a comprehensive pre-conception care service must pay attention to all of these.

## 2 Factors Affecting Pregnancy

### (i) Age, Birth Interval and Previous Pregnancy Experience

Parental age and the interval between births are well-known to be significant factors affecting a pregnancy outcome. The lowest perinatal mortality rate is found amongst women aged between 20-29, with higher rates in the age group under 20 and over 40 (World Health Organization, 1978). A recent French study suggested that fecundity may begin to decrease slightly after the age of 30 and markedly after 35, (Federn et al, 1982). It is similarly suggested by Guttmacher (1956) that an older

woman may take longer to conceive than a younger woman.

A birth interval of less than 18 months is associated with an increased perinatal mortality rate and incidence of low birth weight (World Health Organisation, 1978). Pregnancy spacing and birth interval are reported by Chamberlain (1978) to be important in order to give adequate time for the body to recover general health. Birth intervals of 18 months and less have been linked with an increased risk of infant mortality (Spiers and Wang, 1976). Nuttall and Nuttall (1979) have reported a relationship of short birth intervals with lower measures of intelligence in babies. The optimal birth interval may be from 18 months to three years. (World Health Organisation, 1978). Cartwright (1976) found that at least 50% of the group of mothers in her study reported a preference for an interval of between 18 months to two years, whilst Pickard (1984) suggests that the recommendation to mothers to wait at least nine months after the birth of one baby before trying to conceive again, may be acceptable to most women even if medically rather short.

Zimmer (1979) suggested that women who have suffered some form of loss, for example a miscarriage or a stillbirth, are more likely to space their pregnancies closely and to have a subsequent loss at their next pregnancy. David and Smith (1980) reported that following one spontaneous abortion the risk of subsequent abortions increases and Kossman and Bard (1982) found that smaller than average babies may be born to women who have previously lost an early pre-term infant of less than 1000g. These findings perhaps suggest a definite need for a period of pre-conception care following any problem with a previous pregnancy.

(ii) Contraception

Concern has been expressed in the literature about the possibility of delayed fertility, poor pregnancy outcome and disturbed vitamin and mineral status for the woman who has used oral contraception. Complications have also been reported concerning the health risks of using intrauterine contraceptive devices. However, Siddle (1984) has suggested that whilst any report of the complications of contraception receives extensive journalistic coverage, if the suggestion of "danger" is later shown to be totally untrue this correction rarely receives prominence. Progestasert (a copper intrauterine device) was reported by Snowden (1977) to be associated with a high rate of ectopic pregnancy, but Newton and Szontagh (1979) later questioned this association. Less serious problems are reported to include pain at the time of insertion, expulsion, menorrhagia, and if the method fails, the possibility of spontaneous abortion with or without infection.

Literature specifically relating to pre-conception care tends to concentrate on the discussion of oral contraceptive methods. It is commonly recommended (Guillebaud, 1983) that women planning a pregnancy who have been using oral contraceptives should experience at least one natural menstruation and, ideally, that there should be three months using alternative forms of contraception before conception. Much conflicting literature exists concerning the possible negative side effects on subsequent fertility of oral contraceptive usage. For example, Vessey et al (1979) indicated that the return of fertility may be delayed after oral contraceptive use but that any impairment was negligible after 30 months in parous women and 42 months in nulligravid women. Vessey et al (1979) reported the results of 5,700 pregnancies among women using different types of contraception and found "a surprisingly low incidence" of congenital abnormalities among live infants born to women having their first baby who had never been oral contraceptive users (0.9% compared with 4.3% among users), but there was no difference among women who had previously had a child. Pickard (1984) reports

that there are changes in the levels of vitamins and minerals in the blood associated with the use of oral contraceptives. Examples include decreases in thiamin, riboflavin, pyridoxine, folic acid, vitamin C and zinc, and increases in iron, copper and vitamins A and B. However it is suggested by Pickard that:

"The significance of such findings is still poorly understood because the question whether oral contraceptives alter the actual requirements for vitamins and minerals is by no means fully answered". (1984, p 38).

Roepke and Kirksey (1979) have indicated that long term oral contraceptive use may result in a lower than average vitamin B6 in cord serum at delivery. Grant (1967, 1968, 1974 and 1981) has provided literature reviews on the effects of oral contraceptives, largely concentrating on the negative effects. The research studies which she has conducted concern the relationships between hormone changes, and hormone balance, the effects of oral contraceptives on depressive mood changes, headaches and the development of endometrial arterioles.

The advice concerning contraceptive use given in the pre-conception situation tends to confine itself to advice on using alternative methods to oral contraceptives during the period of preparation for pregnancy.

(iii) Nutrition

Nutritional status has been discussed extensively in the literature. As Pickard has written:

"Of the many factors which may influence the course and outcome of pregnancy for the majority of women, nutritional status around the time of conception may be the most important". (Pickard, 1984, p 35)

Nutritional status is very complex and difficult to measure easily. Both qualitative and quantitative aspects will be considered briefly.

Looking first at quantitative aspects, Pickard has written:

"Weight is a rather crude index of nutritional status but is extremely important in relation to reproduction of both animals and humans". (Pickard, 1984, p 35).

Nutritional status is especially important at the time of conception. As Wynn and Wynn have written:

"Starvation both acute and chronic, may cause temporary infertility in women and have detrimental effects on the perinatal outcome of those who do manage to conceive". (1981)

Examination of the records of the Dutch 'Hunger Winter' of 1944-1945 showed that human reproduction is especially susceptible to defective diet during the weeks immediately before and after conception. There was a food shortage over a large part of Holland which began in October 1944 and continued until the summer of 1945. Nutritional status was at its lowest at the beginning of May 1945, immediately before the Allies restored food supplies. The perinatal mortality rate and the number of central nervous system malformations was greater among those women who conceived during the famine than among those already pregnant when the famine began. There were many more deaths and malformations among those babies conceived than among those born during the "Hungry Winter". Severe undernutrition around the time of conception and during the early part of pregnancy thus had a more damaging effect on outcome than starvation during the later stages of pregnancy (Stein et al, 1975; Wynn and Wynn, 1981). The periods of food shortage in Holland, and in Germany and Eastern Europe

following the two world wars, were reported by Wynn (1984) to be accompanied by epidemics of infertility. The birth rate in Holland had fallen by November 1945 to 40% of the level before the food shortage, seven months after the restoration of the food supplies.

Voluntary weight reduction is identified as a potential problem by Nillius (1978) who suggested that a low body weight or excessive slimming before conception increases the risk of infertility and of an unfavourable pregnancy outcome. Kaltreider and Schuyler (1980) reported that if a mothers pre-pregnant weight is low there is a higher incidence of the birth of a low birth weight baby. The pre-pregnant mother's weight has been identified as one of the factors influencing birth weight by a number of writers, including Peckham and Christianson (1971), Niswander and Jackson (1974) and Edwards et al (1979), so that:

"Women who are underweight before pregnancy may be increasing the risk of a low birth weight infant and of pre-term delivery".

Many women are at risk of undernutrition during early pregnancy. Diet is probably one of the most important mechanisms in transmitting the effect of low social status and women who are living in poverty are usually at risk. Streater (1979) suggested that pregnant women receiving supplementary benefit needed to spend between 65% and 100% of their supplementary benefits on food to have a diet equivalent to that recommended for hospital in-patients.

A recent study showed clearly the relationship between poverty and undernutrition. Doyle et al (1982) conducted a study of the food intakes amongst women from a low socio-economic group. The findings demonstrated that calorific intake of some mothers was well below the recommended daily allowances (RDA). It was felt important by the researchers to obtain similar information, adopting identical methods for mothers of a higher socio-economic status. Measurements were made of the food eaten

by 100 women during one week in each trimester of their pregnancies. 76 were recruited from within a relatively poor community and who attended the principal maternity hospital in Hackney (Salvation Army Mothers' Hospital) and 24 came from a "well-to-do community" attending the Royal Free Hospital in Hampstead. Mothers were recruited at their initial visit to the ante-natal clinic. Criteria for inclusion to the study included: not more than 13 weeks pregnant, primigravida or previously having had a small-for-date-baby, literate and between the ages of 17-29 years (this was to exclude other known contributory causes of low birth weight). Only non-smokers or those who smoked less than 10 cigarettes per day were included in the study.

All the mothers from the Royal Free Hospital (RFH) were from social classes I and II while 85% of the 76 mothers from Hackney were from the social group "manual skilled" or below and nearly half of these had partners who were unemployed. Almost half of Hackney mothers were single at the beginning of pregnancy compared to one of the 24 in the RFH group. The Hackney mothers were more ethnically mixed than those of the RFH: 53% of the Hackney group were of caucasian origin compared with 88% of the Hampstead group. The researchers reported that only a third of the Hackney mothers had a good standard of accommodation while 20% lived in poor housing, 18% were living in overcrowded conditions, 15% shared bathroom and toilet facilities. Seventy-five per cent of the RFH mothers owned their houses whereas over 97% of Hackney mothers either rented accommodation (council or private), lived with their parents, in hostels or were squatting.

The Hackney and Hampstead mothers' pre-gravid weight and height varied only slightly. A comparison of the dietary intakes showed significant differences in the intakes of energy, protein and fat as well as of several vitamins and minerals. Differences in the calorific intake and the maternal fatty acid intake were observed between the Hackney mothers and the Hampstead mothers. Iron was the only nutrient in which intakes were greater in the Hackney mothers, this was due to the iron/folate

preparations prescribed by the two hospitals.

Examination of the birthweights demonstrated a significant difference; the mean birthweight of Hackney infants was 3026g and the RFH infants 3313g. 11.8% of the Hackney live births were below 2500g and 50% were at or below 3000g. In contrast, none of the RFH infants were below 2500g and only 17% were below 3000g. The mean weight gains of the Hackney mothers between their initial hospital visit and final visit to the clinic was 10.5 kg compared to 12.3 kg gained by the RFH mothers, a difference of 1.8 kilos. This study clearly shows a relationship between socio-economic group, dietary intake and birth weight.

Davie et al (1972) suggests that in the human, birthweight is the most important indicator of both mortality and handicap. While 2500g is generally accepted as the demarcation point for low birth weight, Chamberlain et al (1975) suggests that 3000g might be a more realistic figure since perinatal mortality commences to rise from just below this figure. Doyle et al (1982) suggest that energy rather than protein is the primary determinant of foetal growth, as both groups of mothers in their study had protein intakes in excess of the recommended level (ie. 60g/day). In support of this view, high protein supplementation was shown to be ineffective in increasing birth weights in both Guatemala and New York, (Lechtig et al, 1975; Rush et al, 1980). McGowan (1974) has suggested that depletion of energy in the mother is also indicated by the lack of subcutaneous fat in most undernourished foetuses. Doyle reports:

"The aetiology of low birth weight is complex and involves many parameters. In practice, the precise influence of nutrition is impossible to assess because malnutrition rarely occurs in isolation from other factors ... Our study adds to the case that inadequate nutrition during pregnancy is related to low birth weight and that this may in turn be related to an increased risk of perinatal mortality, and a higher incidence of handicap and neonatal illness". (1983).

At the other extreme of body weight, excessive obesity has been associated with a greater likelihood of menstrual irregularities, inability to conceive and complications of



pregnancy, (Frisch, 1980; Garrow, 1981). The Quetelet index is reported by Garrow (1981) to be a good guide to desirable weight for health which takes into account not only weight but also height. Women "at risk" may include those with an index of over 30 and particularly those with an index of less than 20, especially if they are also restricting their calorie intake and experiencing menstrual problems. Most healthy individuals have an index in the range 20-25, and an index of 25-30 is described by Garrow (1981) as representing only a negligible long term health risk. As Pickard has written:

"The Quetelet index may be useful as a practical guide, not only for the diagnosis of obesity, but, perhaps more importantly, as a means of reassuring the many women whose  $W/H^2$  (where W is weight in kilograms and H is height in metres, both measures in indoor clothes without shoes) falls into the desirable range of between 20-25 that they are not overweight". (Pickard, 1983, p4).

Having examined some of the literature concerning the quantitative aspects of nutrition it is now intended to examine the literature on the qualitative aspects of diet. An adequate diet not only suffices to maintain a desirable weight for height, but it also supplies nutrients necessary for healthy growth and development.

The relationship between maternal body weight and fertility is thus well documented; however body weight is only part of the problem. There is a complicated relationship between the quality of nutrition and fertility:

"Human malnutrition is no longer synonymous with insufficient food resources; it is now also an unfortunate consequence of a lifestyle which relies heavily on highly refined foods". (Pickard, 1983, p 4 ).

The importance of vitamin and mineral intake has been highlighted by Jennings, who has written:

"In animals even marginal maternal vitamin deficiencies which are not obvious and can often be very difficult to detect, may have grave consequences for the foetus". (1970, pp 126).

Underwood (1977) has suggested that the same is true for many mineral and trace element deficiencies. The evidence that nutrient deficiencies may be damaging to the human foetus is largely circumstantial. Recent clinical trials have demonstrated the value of nutritional therapy, prior to and during early pregnancy, in preventing the recurrence of handicap. The study of Smithells and his colleagues (1981) indicated that a recurrence of neural tube defects (Spina Bifida) may be prevented by a vitamin/mineral supplement taken prior to conception and during the first eight weeks of pregnancy. Smithells et al (1983) continuing their work noted that vitamin and mineral supplements taken at least four weeks before conception and during the first eight weeks of pregnancy reduced the neural tube defect recurrence rate approximately seven fold. A similar study conducted by Lawrence et al (1980) demonstrated that, among a group of women who took a 'good' diet there were no recurrences of neural tube defects. This investigation of 174 women in Wales with a previous pregnancy complicated by a neural tube defect, indicated that the diets in the interpregnancy period of 24.7% of the women were 'poor', of 61.5% were 'fair' and of 13.8% were 'good'. All the recurrences of neural tube defects and nearly all the miscarriages occurred in those women who were on a 'poor' diet.

Folate, vitamin B6 and zinc are three nutrients which are discussed extensively in the literature. They are identified as essential for healthy reproduction but are commonly consumed in amounts below those recommended. Vitamin B6 deficiency may be attributed to physiological changes in pregnancy, increased foetal demand, contributory factors, such as the use of oral contraceptives prior to conception and low dietary intakes of vitamin B6, both before and during pregnancy (Pickard, 1982). Deficiency of zinc has been associated with low birth weight and congenital

abnormalities, Meadows et al (1981), Soltan and Jenkins (1982). Zinc intake in women of childbearing age may often be low (Barlow et al, 1985).

Throughout the literature it is maintained that vitamin and mineral status may be affected by many diverse factors but diet is suggested by Pickard (1984) as the most important factor. The vitamin and mineral content of the diet varies depending upon the range of foods chosen and the extent to which foods are refined and processed. Many writers have discussed the problems concerning consumption of a highly refined diet (Schroeder, 1973; West 1983). Many complex factors are involved, Barlow, discussing protein-calorie malnutrition has commented that:

"The provision of nutrients that provide calories, ie. fats, carbohydrates and proteins, do not themselves provide for good health. A healthy, well balanced diet must include vitamins, roughage and minerals along with the fats, carbohydrates and proteins". Barlow (1983).

Thus, in order to prevent malnutrition, all components of a healthy diet must be present and in the right proportions. Further, the actual form of a nutrient may effect the degree of absorption and utilisation of that compound. Interactive effects of nutrients need to be recognised, different nutrients can affect the absorption and intake of other nutrients. This factor introduces some of the problems related to the increased use of vitamin and mineral supplementation.

Much attention has been paid recently to the controversial question of vitamin and mineral supplementation before as well as during pregnancy. As Pickard has written:

"The dilemma over the pro's and cons of pre-conception supplementation does not rest with the medical profession alone since an enormous number of supplements are now available over the counter". (1984, p38).

The discussion on vitamin and mineral supplementation offers conflicting arguments and advice. Smithells work on neural tube defects (1981) involved the use of 'Megavit' - a

large vitamin supplement which reduced recurrence rates as mentioned above. However, some authors (Malone, 1975; Briggs, 1978) have warned of the dangers associated with mega supplementation doses or with long term overconsumption. For example 'Megadoses' of vitamin C have been linked with inhibition of conception or, if taken early in pregnancy, with spontaneous abortion (Briggs, 1978). Lind, (1983) has contributed to the literature which discusses the practice of routine iron supplementation in very early pregnancy. This has been condemned as it increases the risk of lowering the woman's zinc status due to the interaction between the minerals.

Self medication by means of supplements may well be problematic where individuals do not understand the interactions and antagonisms between minerals and they are unaware of how these minerals might affect body metabolism. Instead of supplementation, it is argued in the literature discussed above, the general quality of the dietary intake should be improved. More emphasis should be given to the methods of acquiring essential nutrients through diet. There is increasing awareness of the need for a balanced diet. Writers such as Doyle et al (1982), Pickard (1983) and Gillett (1984) discuss the importance of a balanced diet and they warn of the possible ill effects that high sugar consumption, additives and preservatives may have on health. The recent government reports from the National Advisory Committee for Nutrition Education (NACNE) and The Health Education Council's 'Food for Thought' Campaign (1984) have raised similar points. These contributions may be praised for their emphasis on the positive aspects of health education. This compares favourably with the plethora of literature which tends to be negative, warning individuals of their imbalanced diet and tending to adopt sensationalist methods.

Diagnostic techniques to determine an individual's trace element status have been increasingly adopted in recent years, including hair metal analysis:

"The rise in interest in trace metals before and during pregnancy may simply reflect our capacity to measure them more accurately". (Hyttén, 1985, p 873).

The question has arisen as to which are the most appropriate analytical techniques, sample preparation methods and the appropriate body tissue or fluid which will best reflect the total body status. As Barlow et al have stated:

"Not all the metal present in a tissue is metabolically active and determination of the gross composition may be misleading. Ideally at least two complementary tissues or fluids should be examined to fully confirm a metal excess or deficiency". (1985).

The technique of hair analysis has received some criticism (Barratt, 1985; Chamberlain and Lumley 1986) as well as support, (Foresight, 1981). The Foresight organisation view hair analysis as a valuable diagnostic tool which can then be followed by chelation therapy involving mineral and vitamin supplementation aiding the removal of toxic elements.

Although hair analysis may be an important diagnostic technique for assessing mineral status it is, according to one writer:

"Worthless for vitamins and a great deal more basic research is still necessary. The commercial exploitation of multielement chemical analyses of human hair is out of all proportion to the very limited and mainly tentative scientific justification for its use". (Hambridge, 1982, p44).

It is suggested that the actual level of metal found in the hair is related to the method of sample preparation and the analysis technique which has been used. Biochemical individuality is seen as an important concept requiring consideration in any study looking for small differences in body chemistry. Barron (1982) have suggested that in a population group of apparently 'normal' individuals who experience fifteen or twenty independent biochemical tests applied to them, more than half of the group would have at least one abnormal result. McCarty (1981) has made the point that owing to individual differences in absorption, tissue uptake and enzyme affinity, some individuals will require a larger intake of a particular nutrient than would be adequate for other individuals.

The literature identifies the problem as being the effects of individual variability, which makes difficult the use of fully controlled studies and the adoption of statistical significance tests. The hair analysis test has been criticised in the literature but it must be recognised that it is a valuable tool as long as its limitations are recognised. It is a useful screening test which is cheap and which is a non-invasive technique to help in the assessment of trace element status. It is important however, for the practitioner to develop skills in the interpretation of the results for the test to be valuable and for the subsequent supplementation advice to be appropriate.

Other factors affecting pregnancy are discussed in the literature; these include medical conditions, drugs, nicotine intake, alcohol, and occupational and environmental factors. These are now considered very briefly.

(iv) Medical Conditions

The medical condition of the mother is obviously vitally important as far as the health of the child is concerned. As Pickard has written:

"Pre-conception care needs to take account of those infectious diseases and other medical disorders which may affect fertility or the developing embryo. Maternal infections such as syphilis, rubella, cytomegalovirus, toxoplasmosis or herpes simplex may cause congenital abnormalities". (1984, p 38).

Kaltreider et al (1980) have indicated that low birth weight infants are associated with maternal disease such as nephritis, liver disease, placenta praevia and infection. According to Black (1981) many women of childbearing age are still unprotected against rubella. The screening for rubella is recognised as a valuable procedure in pre-conception care. In view of the high incidence and frequency of congenital abnormalities in infants born to insulin-dependent diabetics, special care is necessary for such patients, Steel (1982). Indeed as previously described the first pre-pregnancy clinic established in Edinburgh was a diabetic clinic. Perhaps work will also be conducted in

order to assess whether a woman is HIV anti-body positive, as a result of the current research conducted into the Acquired Immune Deficiency Syndrome?

A very considerable amount remains to be done to make women (and men) aware of the importance of a good general medical condition prior to pregnancy. As McCarlagh reports:

"Pre-conception care provides the opportunity for a general medical examination. Assessment includes general appearance (skin, hair, teeth), height and weight; urine analysis and investigation for urine infection. Blood analysis may include several investigations, but most significantly rubella immunity. Many women may still be unprotected. (1984, p 18).

(v) Drugs and Smoking

Fears about the teratogenic effects of many drugs have not always been well substantiated, (Beeley, 1981; Hawkins, 1983). Hawkins suggested that the incidence of drug-associated problems affecting birth outcome is largely unknown whilst Beeley (1981) reviewed evidence for adverse effects of drugs in the first trimester of pregnancy and concluded that few drugs were actually 'proved' teratogens (apart from thalidomide and cytotoxic drugs) though many others could be classified as 'probable' teratogens for example, phenytoin, 'possible' teratogens (barbiturates and oestrogens) and 'doubtful' teratogens (phenothiazines and diazepam). Beeley (1981) added the additional caution that no drug was known for certain to be safe in early pregnancy and that some women may be more susceptible to the harmful effects of drugs than others. The reason for this may be genetic or environmental factors. Nutritional status may also influence drug susceptibility as described by Wynn and Wynn (1981).

The pre-conception care literature recommends that women should avoid any prescribed drug during pregnancy, also they should avoid regular self medication with off the counter remedies such as aspirin or antacids. It is recognised that at times this advice could prove difficult to follow, especially since the woman concerned might not be aware that she is pregnant. In this connection Hays (1981) argues that:

"The onset of teratogenic susceptibility may occur before the next expected menses. Pre-conception counselling is the only solution to this problem", (1981).

In other words, a woman may be susceptible to nutritional influences before her next menstrual period. Hawkins (1983) suggests that individuals on long term drug therapy, such as those taking anticoagulants, anticonvulsants or psychotropic drugs, may be slightly more at risk of foetal abnormalities. A pre-conception review of such patients and their treatment offers great potential for offering advice and reassurances to patients as well as reducing some of the risks.

The harmful effects of smoking in pregnancy are not in dispute. As Grant has argued:

"The 1980 Report of the USA Surgeon General 'The Health Consequences of Smoking for Women' reviews 161 papers and leaves little room for doubt that smoking is a major cause of abnormal pregnancies and avoidable illness, handicap and deformity in children". (Grant, 1981: 57).

Other research includes that of Wynn and Wynn (1981), who found that smoking may reduce the fertility of women and Himmelberger et al (1978), reported on an increased risk of spontaneous abortion and congenital abnormality amongst women who smoked. Johnson and Dubin (1980) showed how smoking led to a reduced birth weight, whilst nicotine was reported by Crosby and Metcalf (1977) to decrease uterine blood flow and placental amino acid uptake. Roels et al (1978) identified increased cadmium levels in the placenta of women who smoked. Men who smoked heavily had reduced testosterone levels, according to Briggs work (1973). Hendry (1979) reported that males who were heavy smokers had reduced sperm counts and a higher frequency of morphologically abnormal sperms was reported by Evans et al (1981).

In the light of this evidence it is not surprising that the literature concerning pre-conception care provisions advises that men and women should stop smoking prior to and during pregnancy, or at least reduce their tobacco use considerably.



(vi) Alcohol

The current concern about the possible ill effects of drinking during pregnancy coincides with increased alcohol use and misuse by women.

Shaw, in a recent review wrote that:

"In Britain, women's drinking problems have undergone a more dramatic change, particularly in the 1970's. Indeed the drinks sales executive of International Publishing Corporation has concluded that, 'the growth among women drinkers is the most significant factor affecting the drink market as a whole'". (Shaw, 1980: 10).

Plant (1984) reports that there has been an increase in alcohol consumption by young females. Whilst a study of alcohol use amongst teenagers in Glasgow by Davies in 1972 concluded that only 15% of the 14 year old female respondents reported that they never drank alcohol, it is clear that many more young females who are at the beginning of their child bearing years are drinking alcohol.

Most of the evidence in the field of alcohol studies is retrospective. Some research is primarily impressionistic or relates to a narrow data base. Few studies have been conducted with large numbers of cases or have adopted more rigorous or standardized data collection procedures. Indeed much discussion on alcohol and pregnancy has relied upon clinician's impressions. This is not necessarily a bad thing as Plant has argued:

"Clinical impressions not only precede but often stimulate research. While such data is historically important, they are overwhelmingly impressionistic and lack the persuasiveness of research which measured maternal alcohol consumption and which also takes due account of other possible causes of birth damage. A simple association - drinking during pregnancy and adverse foetal outcome is not enough. Such a link, if evident may be attributable to a host of other factors such as social class, diet, other drug use, age and past obstetric history". (Plant, 1984).

The lack of clear evidence of the link between alcohol consumption and birth defects has not prevented the development of an extensive literature on the subject. The literature

dates back to Biblical and Ancient Greek times.

"In Carthage and Sparta the consumption of alcohol was forbidden by law to all male and female newly weds below the age of 30 in order that "defective children might not be conceived" (Haggard, 1942, p210).

Even earlier Plato was reported to have stated:

"Children shouldn't be made in bodies saturated with drunkenness" (reported in Burton, 1906, p26).

Whilst there is concern about the consumption of alcohol and its potentially damaging effect on the foetus, less is known concerning the amount of alcohol which is safe during pregnancy and in the pre-conception preparative period. The Royal College of Obstetricians and Gynaecologists Scientific Advisory and Pathology Committee declared in April 1983 that:

"There is insufficient evidence available to support the abolition of alcohol during pregnancy. Excessive drinking is related to adverse effects on fetal growth and development, but it is not known at what level drinking is said to be safe. Therefore, women should be aware of the possible detrimental effects of alcohol during pregnancy".

The government reports demonstrate the diffidence which exists concerning the present knowledge of the adverse effects of alcohol on pregnancy. In 1981 the Department of Health and Social Security publication "Drinking Sensibly" made the following declaration:

"There is evidence that excessive drinking during pregnancy can damage the unborn child but the extent of the drinking necessary to cause such damage is such that it would be advisable on health grounds to reduce the intake greatly irrespective of pregnancy" (1981a, p13).

Two years following this report the Department of Health and Social Security issued the following statement:

"There is no doubt that heavy drinking, whether regular or occasional, can harm the foetus and should be avoided during pregnancy or when pregnancy is contemplated". (Department of Health and Social Security).

Expert opinion is divided as to the precise extent to which higher alcohol intakes are harmful to the foetus and whether there is a threshold below which it is safe to drink, but there is no doubt that alcohol passes from the mother to the foetus. There does seem sense therefore in keeping alcohol consumption as low as possible during pregnancy or when pregnancy is contemplated.

The Health Education Council has suggested, in a report published in 1983, that 'binge' drinking should be avoided. It was stated that it would be wise to avoid consumption of alcohol completely during a pregnancy. The National Council for Women in the United Kingdom published the findings of their Working party on Alcohol Problems in 1980. In their conclusion and recommendations they stated that there should be more information available to women to ensure that they are aware of the possible risks which they might be incurring in drinking alcohol during pregnancy. The report also stated a need for women to be educated about the potential risk of alcohol before they are likely to conceive.

The advice from the Royal College of Physicians has changed in recent years as is clearly evident in these following statements issued in 1979 and 1983:

"There is no evidence that a mother who drinks moderate amounts of alcohol is going to do her baby any harm, but there is increasing evidence that a mother's heavy drinking can do damage to the foetus. What in this context is meant to be "moderate" as compared to heavy, is as ever, difficult to quantify precisely, but a local equivalent to say a couple of bottles of wine taken each day is getting into the danger area (1979, p83).

"The potential dangers of maternal drinking during pregnancy should be further emphasised. Even very moderate social drinking may be associated with decreased birth weight and an increased risk of spontaneous abortion. The precise level of alcohol intake which carries seriously enhanced risk of the child developing the foetal alcohol syndrome still remains rather uncertain ... In the light of this evidence the College would wish to recommend that women be well advised not to drink alcohol during pregnancy ... This advice supercedes the previous statement on drinking during pregnancy". (Royal College of Physicians, 1983b, p69).

This illustrates that even currently there exists uncertainty concerning the detrimental effects of alcohol during pregnancy. Pre-conception care advice tends to suggest that

alcohol consumption should be reduced during preparation for conception and pregnancy itself.

(vii) Occupation and Environmental Hazards

This is a huge and complex field, but some salient findings can be indicated. It is clear that environmental and occupational hazards during pregnancy and before conception pose a significant risk to certain groups of women and men. Women exposed to organic solvents, it has been reported by Barron (1982) suffer a high incidence of babies with congenital malformations. He reported also on the effects of industrial chemicals which include for the male, decreased libido and impotence (from vinyl chloride) and testicular damage or infertility (from chloroprene or organic lead); for the female, menstrual or other gynaecological disorders (due to polychlorinated biphenyls), abortions or infertility (from aniline or organic lead), decreased foetal growth, low birth weight, or poor survival (from toluene), teratogenic effects (from organic mercury) and maternal death related to pregnancy (from benzene).

Other work includes that of Bryce-Smith and Deshpande (1977) and Khera et al (1980) on the studies into the effects of environmental exposure to lead, whilst Wibberley and Khera (1977) demonstrated that women exposed to lead because of their occupation had a higher than average placental lead concentration and a high umbilical cord lead level. However, in that study it was not possible to state whether occupational lead exposure caused any of the stillbirths that were examined or whether the high lead levels were consequential to the foetal death.

The significance for pre-conception care is that mothers exposed to such risks may take special precautions only once the pregnancy is confirmed. It is also recognised, that difficulties arise when trying to separate work related effects from effects due to other factors such as diet, smoking and drinking habits.

### 3 Conclusion

This brief review of the factors which have been identified as affecting normal healthy reproduction provides evidence of the need for pre-conception care advice to be made available for some individuals who are at risk. It is recognised that considerable difficulties arise in the measurement of specific causal relationships. Further, there is a complex inter-relationship between factors such as diet, alcohol consumption and environment etc which have a combined effect. Above all there is the question of "structural factors", social class, and an individual's socio-economic status, (Klein, 1974; Stacey, 1977). These will greatly determine his/her health status and life chances. This well-known finding is supported by the literature concerning the poor uptake of ante-natal care services by women in social groups III, IV and V who are most "at risk". The Black Report on the inequalities in health (DHSS, 1980a) identified that the pattern of unequal use of ante-natal services was explained in terms of rational decisions made by individuals weighing the perceived costs of attendance against the benefits received (this issue is returned to in Chapter Nine). Pickard (1984) has suggested that the success of pre-conception care will depend not merely on the provision, but also on the uptake of these services and on the achievement of positive changes in health related behaviour by prospective parents. It is recognised however that "structural" factors be they social, environmental or economic, serve as constraints to individual behaviour. It is against the background of these considerations that this research should be considered.

Within the National Health Service, there have been few provisions for pre-conception care so far. It has been provided on a limited scale in the West London pre-conception clinic (discussed in Chapter Five). It was partly as a result of the current lack of facilities provided by the National Health Service, the Foresight Charity was established with the prime objectives of promoting the concept of pre-conception care and the establishment of clinic facilities. The remainder of this thesis looks critically at the emerging provision of pre-conception care both in the National Health Service and in

the private sector provided by the Foresight charity and compares and contrasts the approaches of these bodies.

**CHAPTER TWO**  
**THE RESEARCH PROGRAMME: SAMPLE DESIGN, DATA**  
**COLLECTION**  
**AND STATISTICAL METHODS**

This chapter describes the research methods employed in the thesis and is divided into five sections. The first considers some of the advantages and disadvantages of conducting collaborative research and the second contains a description of how the research was designed. The third section, discusses the methods by which the data was collected and the fourth describes how the data was recorded, classified and analysed. The final section contains concluding comments and a discussion of some of the problems which were encountered whilst conducting the research.

## 1 Doing Collaborative Research

The particular methodology chosen for a research project depends upon the hypotheses which are to be tested as well as the nature of the "population" being examined. In this study another factor which influenced the methodology chosen, was the special circumstances associated with conducting research with a collaborating organisation. It was the Foresight Charity which initially approached the Interdisciplinary Higher Degrees Scheme at Aston University with the research proposal and thus constitutes the collaborating organisation.

A number of advantages and disadvantages have been identified when conducting collaborative research. For example, one advantage of working with the Foresight organisation, was the provision of a "basis" from which to start the research project. A set of objectives (discussed in Chapter Three) was provided and the initial work comprised the development of a research design and methodology to reach these objectives. Thus, a "structured" start to the project was provided which was of considerable help during the early stages.

A second advantage was the assistance provided by the collaborating body in gaining access to relevant persons and to information which otherwise might have been very difficult to obtain. For example, few problems were encountered, in obtaining permission from clinicians to interview them at their place of work. Becker (1970) has discussed the problems faced by researchers of "getting in", in particular the valuable time that is "lost" by having to discuss with those in authority the usefulness of the research and in confirming the motives and integrity of the researcher. There were few such problems in this research. Another advantage of conducting the research on a collaborative basis was the availability of funds provided by the collaborating body. The research was approved by the Human Science Ethical Committee of the University in January 1984, following the submission of a detailed report concerning the objectives of



the study and the details of clinical tests to be conducted. Thus, the study had been vetted by an influential University Committee, which probably increased the subsequent co-operation of clinicians and health professionals with the research.

As well as having a number of advantages, collaborative research has accompanying disadvantages. The IHD Scheme encourages students to conduct research in areas which bring in new disciplines from across the technology/social science divide and usually blends with the subjects studied at first degree level (Cochran, 1981). This undoubtedly enables a broader view to be taken of the subject under investigation; at the same time however, it often means that the student is researching in an area where he or she is something of a beginner. A considerable "learning process" is involved, to a much greater extent than is the case with an "orthodox" post-graduate research student. The student may well feel diffident in the early stages of the research, when faced with the established position and expertise of the collaborating organisation. In this study the researcher was, in effect, able to contribute only a limited amount to the design of the Foresight Doctors Research Package (see section 3 below) and had to rely on the advice of the collaborating organisation and its advisers in the development of the protocol and questionnaires.

Another disadvantage of conducting collaborative research is the problem that the researcher may not always be perceived by the respondents as objective, carrying out independent research and making independent conclusions on the findings. Instead, the researcher may be perceived (in the extreme case) as an employee of the collaborating organisation. In this research, since there seemed to be a degree of controversy between certain other groups in the pre-conception care field and the Foresight Organisation, it was felt to be wise to play down the direct "collaboration" link and to "stand back" as far as possible. Shipman (1972) has discussed the importance of the need to take a detached view of the field of study. He described this as one of the fundamental dilemmas of social

research. Whilst "involvement" is necessary for real understanding, it challenges the widely held opinion that science should be a "detached" activity. It was therefore considered necessary to stress time and again during the research the independence of the researcher. Although the parameters were already fixed the researcher's aim was to pursue her research with a minimum of negotiations or discussions with the collaborators in order to preserve this independence.

The advantages of additional funding and the easy access to subjects provided by the collaborating organisation were, in the researcher's experience counter-balanced by the pressure to give "value for money" to the collaborator. The problem was possibly highlighted by the fact that the collaborating body was a registered charity, with limited funds at its disposal and which wanted definitive results quickly. The collaborator expressed a keen interest in the "product" which their monies were buying - the researcher was given a list of 142 things which Foresight wanted to find out (see Appendix Three). To some extent perhaps the collaborator originally perceived the study in terms of providing confirmation that Foresight's beliefs and practices were sound, rather than a critical and more comprehensive assessment of the field of pre-conception care generally.

A further difficulty affecting collaborative research concerns the problem of being supplied with biased data by respondents. This problem exists in all research, of course, but is particularly evident in collaborative research where the researcher is often perceived as part of the collaborating organisation. In this situation respondents are especially susceptible to the temptation of providing those answers which they assume that the researcher desires. For example, couples attending for pre-conception care are assured that the clinicians are interested in advising them in accordance with their medical histories and test results and in no way attempt to "judge" them. There is however, a danger that couples will modify their answers to give a good account of themselves. The

means taken to minimise this potential source of error are discussed later.

A final difficulty of doing this type of collaborative work is the problem of resolving the tensions which may be created when conclusions are reached which are perceived as unfavourable to the collaborating organisation. As this study developed it became apparent that some of the findings were at odds with some of the basic assumptions of the Foresight organisation. Critical research is potentially problematic for the members of any collaborating organisation, however much it is suggested that constructive criticism is meant to strengthen rather than weaken the organisation concerned.

## 2 The Research Design

The original aim of the research, as agreed with the collaborating organisation at an early stage, was to assess the efficacy of the pre-conception clinics which were operated by the clinicians associated with the Foresight organisation. To achieve this objective, data was to be collected from Foresight clinicians (that is doctors who were already known to the organisation and participating in its pre-conception care schemes) who would provide details concerning the medical histories of the couples who were attending their clinics. Information would also be collected on subsequent pregnancies.

Initially, the number of clinics to be monitored was 56. The projected number of couples attending these clinics and to be included in the data base was estimated to be between 100 and 1000. At this early stage it was recognised that there could be no accurate assessment of the actual number of couples who would present. Following the distribution of the research package to clinicians in December 1984 (discussed below) it became evident that a number of doctors whom Foresight believed would co-operate were not, in fact, willing to be involved in the research. Thus the number of doctors providing a pre-conception care service who were willing to be involved in the study

was much smaller than was first anticipated and ultimately a total of only eight clinicians took part.

It became apparent in early 1985 that it was necessary to acquire more detailed information concerning the problems which had arisen in the data collection so as to establish a more useful data base. For example, few questionnaires or report forms had been completed and returned to the university. It was therefore considered important to make further investigations to identify the problems and if possible, resolve them. It was decided to add to the data by interviewing Foresight clinicians. The scope of the research was thus extended - originally it was envisaged that the study would involve only the collection of data on couples attending Foresight clinics. This was thought to provide sufficient information from which to establish a sound data base. However this proved not to be the case and it was decided to collect additional information from other sources. In consultation with the University supervisors, it was decided to broaden the approach of the research from one of looking solely at the Foresight pre-conception care provisions to assess other provisions in order to ensure a balanced and viable study. It was at this point that a difference of opinion with the collaborating organisation began to emerge. Not unnaturally, the Foresight Organisation was disappointed that the original research design could not be adhered to. However, as will become apparent, the number of couples in the data base provided by the Foresight clinicians was too small to lend to a viable study.

In order to broaden the scope of the research, information on pre-conception care was sought from two other sources. The first was a group of ten District Health Education Officers working within the West Midlands Regional Health Authority. The reasons for drawing upon this group of District Health Education Officers, was to gain information from those working in the field of health promotion and education on the subject of pre-conception care. Following the collection of information from the

'Foresight' clinicians it was felt that a comparison of their views with those of other health professionals would be of value. The researcher's membership of the Regional Health Authorities Ante-Natal Care Action Group provided an additional perspective on the views of health professionals.

The other source of data came from a pre-conception clinic provided within the National Health Service at the West London Hospital in Hammersmith. It was decided that interviews should be conducted with the staff of the West London clinic and with those responsible for its establishment. A comparison of this service with the Foresight clinics was felt to be consistent with the achievement of the collaborator's initial request for the research programme, to evaluate the Foresight pre-conception care clinics. It seemed relevant that, in order to widen the perspective on pre-conception care, services other than those connected with the collaborating organisation should be investigated. A participant observation study of the West London service was carried out and this is described in Chapter Five).

Following the early disappointments concerning the small number of Foresight doctors willing to be actively involved in the study, a number of other avenues had therefore to be explored. The emphasis of the research also changed from being primarily concerned with the collection of a large amount of quantitative data for statistical analysis and the medical evaluation of the efficacy of pre-conception care techniques, to include also the collection of qualitative data from the providers of pre-conception care services.

In summary, the later presented data was drawn from six sources, namely:

- 1 Foresight clinicians operating pre-conception clinics
- 2 couples attending pre-conception clinics
- 3 committee members of the Foresight organisation

4 staff providing a pre-conception clinic at the West London Hospital  
5 a group of District Health Education Officers in the West Midlands  
6 members of the Ante-Natal Care Action Group.

The latter three sources were not envisaged in the original research proposal.

The changes in the research design discussed above were the result of factors which were not foreseeable at the start of the research. As already stated, the number of clinicians willing to be actively involved in the contribution of data collection concerning their patients, was less than originally planned, but as Moser has written:

"The sample design is decided upon in the light of what is practically feasible, as well as what is theoretically possible". (1958)

It must be emphasised that none of the subject groups were randomly chosen. The couples attending the Foresight pre-conception clinics were usually charged a consultation fee by clinicians, therefore they were a pre-selected population who were able to pay and sufficiently motivated to attend for pre-conception care advice and were identified as being predominantly of a higher socio-economic status (this statement is confirmed by the data presented in Appendix 4). In addition, the clinicians providing the service were not randomly chosen either, as they had all experienced in the past varying degrees of contact with the Foresight organisation. The West London Hospital was chosen for observation because it was the first and only clinic at the time to provide pre-conception care within the National Health Service. The sample of DHEO's was also not randomly chosen - they were interviewed following self selection.

The group of Foresight clinicians were unevenly distributed throughout the UK with the majority being located in and around the Home Counties. The couples attending for pre-conception care were therefore mainly from this area. The DHEO's were drawn from the West Midlands Regional Health Authority and those who were interviewed

were evenly scattered throughout the region and balanced as regards working in predominantly rural or urban districts.

In the original plans for the research programme, it was decided that a control population would be necessary against which the presenting Foresight couples could be compared. The control to be used was to be the general population, as reflected in national statistics of pregnancy outcomes particularly the rates of perinatal and neonatal mortality and morbidity. The couples attending the clinics for pre-conception care who had previously experienced a poor birth outcome from a previous pregnancy, prior to receipt of pre-conception care would also act as controls, by a comparison of the actual birth with expected recurrence rates of certain conditions. The Foresight Organisation hoped that the babies born to couples following attendance at a pre-conception care clinic would be monitored by the Foresight clinicians until their first birthday. However, when it became evident that the number of couples was small, it was decided that controls would be achieved by matched sampling with couples in the general population considering such factors as age, race, smoking, parity and socio-economic status. However, problems arose here, particularly regarding an ethical dilemma - concern was expressed by Foresight that should a problem be identified with a couple who were not receiving pre-conception care advice, they must also be advised if it was felt that they were increasing the risks of any future pregnancy. The idea of matched controls was abandoned following these quite reasonable objections from the collaborating organisation, and from the clinicians themselves.

### 3 Methods of Data Collection

Oppenheim (1966: 69-78) has made a distinction between the "reliability" and "validity" of different research methods. He argues that a method can be described as "reliable" if it produces the same result each time it is used. On the other hand, a method

is "valid" if it actually measures what it is intended to measure. It is generally acknowledged that some methods are more reliable than valid, whilst others are more valid than reliable.

Questions of both "validity" and reliability reflected the consideration of the data collection methods adopted for this research. The data collected by the use of highly structured questionnaires was insufficient to answer the initial question, namely, how effective was pre-conception care for the reduction of birth defects? The decision to carry out semi-structured interviews with the Foresight clinicians made possible the collection of additional information which served to expand some of the data which was being gathered from the questionnaires and report forms (or, more correctly, were not being gathered). Becker (1970) has argued that research which employs a variety of methods of data collection is often more free of bias than that which relies upon just one method. This is because the data obtained by each method can be compared to see whether it has been influenced by the method used to collect it. In addition, data gathered by different methods is used to cross-check each other. This is a popular approach which has been employed in much sociological research (Bell and Newby, 1970).

For these reasons, it was vitally important to ensure the reliability of the questionnaire data collected on the couples receiving pre-conception care. The original protocol was developed in conjunction with two clinicians closely associated with Foresight. It was produced as a means of encouraging other clinicians to provide a standard pre-conception care service and (importantly) to standardize the information received. In addition, it was very necessary to assess the validity of the protocol - even if the original research design had been successful and a large amount of quantitative data had become available, some interviews with the clinicians would have been necessary. The decision to interview the clinicians was also taken to shed valuable light on the approach and attitude of the providers of the service. The pre-conception care



consultation is not merely a technical exercise of testing blood or hair, but is a very emotion arousing situation. The receipt of forms completed and returned by clinicians would give only a partial account of the situation which might usefully be supplemented by interviews with the clinicians.

It was felt that the study of pre-conception care required the adoption of qualitative research techniques in addition to the quantitative techniques originally planned. The methods used in the research are now outlined:

(i) The Foresight Doctors: "Research Package"

The collection of detailed information on the couples attending the Foresight clinics involved the development of a clinic protocol, patient questionnaire, report forms (R1-R5) and clinician's research notes. These documents are referred to in this thesis as the "research package", the first of which were distributed to the participating clinicians in December 1984. Each of the clinicians also received a letter asking for their co-operation in the research and instructions about completing the forms. Copies of these forms are shown in Appendix 1.1.

Clinic Protocol

The development of the clinic protocol was the first task to be completed. It was important to establish whether the clinicians offering a pre-conception care service were operating in broadly the same manner. It was crucially important to ensure standardisation in the quantitative data collected. A clinic protocol was developed, in conjunction with a number of existing Foresight clinicians, as a document to guide new clinicians who would be joining the research project in its later stages. The protocol was thus both a guide to follow and an echo of the philosophy of the Foresight organisation. (A copy of the protocol is shown in Appendix 1.2). It included advice to clinicians that they should cover a discussion of the patient's life styles, eating habits, contraceptive

uses and counselling on the dangers of smoking, alcohol and drug-taking. In addition a series of tests were indicated to be conducted by clinicians at the patients' first consultation. The tests specified were very extensive and as has been suggested, were included following discussions with the Foresight organisation and the supporting clinicians.

The tests and measurements which were recommended included blood pressure, rubella status, basal temperature (considered to be a good test to determine time of ovulation), urine analysis (used to determine sugar and protein), blood examination, (to be analysed for levels of zinc, copper and lead also as a test for B6 deficiency and sexually transmitted disease (if indicated by history)). Hair metal analysis was also recommended for the assessment of normal and abnormal concentrations of essential and toxic metals. Other tests recommended included a smear test, also semen samples were to be taken for the analysis of abnormal sperm, (in cases of chronic ill health, coeliac condition or alcoholism). Stool samples were advised to be taken for the determination of malabsorption and/or infestation where indicated by the history, or by poor mineral levels on the hair analysis. Finally drinking water samples from the couples home were recommended to be sampled, for the determination of lead, copper and flouride levels to see if the water contained levels in excess of the World Health Organization recommended limits. Copies of the protocol were distributed as part of the "research package" which each clinician joining the research received. The protocol thus envisaged a very extensive and by implication, expensive series of tests and lengthy pre-conception care interviews. This was probably a major reason why many clinicians did not follow the protocol.

### The Patient Questionnaire

The development of the patient questionnaire was essential to the compilation of the data base of couples attending Foresight pre-conception clinics. The questionnaire was developed over a period of six months from January to June 1984. However, minor changes were made to the questionnaire as late as September 1984, following discussion with the Foresight organisation. It was developed with the assistance of two Foresight clinicians. In addition, six other clinicians received a draft copy for comments. It was intended that the questionnaire would be used as the basis for the consultation interview. However, it transpired that many of the clinicians did not fully follow the protocol. They adopted their own methods of gathering medical histories and tended to distribute the medical questionnaires for their patients to complete in their own homes. This was largely as a result of the length (some 19 pages) and complexity of the document (See Appendix 1.3). The questionnaire was printed on 'NCR twin sets' which allowed a carbon copy of the questionnaire to be retained by the clinician who was asked to return the top copy to the University. The questionnaire was coded for later computer analysis (see Section 4, below).

From the outset it was recognised that there were a number of problems with this questionnaire. Much of the data collected required memory recall, on the part of the patients - for example, the questions concerning past conditions suffered and information concerning past injections received and any reactions which occurred. For the questions eliciting information on the couples' smoking and drinking habits it was recognised as a problem that respondents might well underestimate the amounts consumed. Conversely, with regard to the questions concerning dietary intake, couples might well be tempted to report what they felt to be "right" to eat, not what they actually consumed. These problems were recognised when the data was eventually analysed (see Appendix Four). Another difficulty was that, despite assurances of confidentiality, some couples withheld

their permission to become involved in the research project.

The greatest problem with the patient questionnaire was undoubtedly its length - over 400 questions. The Foresight organisation wished to collect a wide range of data rather than concentrate on a particular area such as the nutrition intake. It was decided that the data base should be fairly comprehensive in order to tackle the epidemiological nature of the research without focussing onto a particular issue.

A number of good points concerning the questionnaire have been identified. Many of the clinicians expressed their surprise at the willingness of most of their patients to readily complete the lengthy document. Possibly the 'Hawthorne Effect' (Roethlisberger and Dickson, 1959) was at work here. The couples were only too pleased to co-operate with the research because they felt, perhaps for the first time, that someone was taking an interest in their problem. This was evident on the examination of some of the replies to the final part of the questionnaire (see Appendix Four). Another positive aspect of the questionnaire was that as it was distributed to the couples by their clinician to be completed and brought back at their second consultation, there tended to be a very high rate of completion and return. (This advantage was lost when patients did not return to the clinician for a second consultation, a problem identified and discussed in Chapter Four).

Initially the research questionnaire was piloted and certain modifications were subsequently made (see Appendix 1.4).

#### Clinician's First Report (R1)

In addition to the patient questionnaire a number of other report forms were developed to assist in the data collection. The report forms were developed during the months of September and October 1984 in conjunction with the collaborating organisation and they were coded for computer analysis. The Clinicians First Report

(R1) (see Appendix 1.5.1) was intended to produce data on the clinician's assessment of the couple during their first consultation, without necessarily having had prior access to clinical screening test results. The First Report, contained sections concerning the nicotine, alcohol and dietary intake of the patients and the advice which was given by the clinician. Requests were also made for information concerning vitamin and mineral supplements. Medical problems were identified and whether any treatment was advised by the clinician was noted.

It was intended that the Clinicians First Report should be returned accompanied by laboratory test results and the completed patient questionnaire. The collaborating organisation had been heavily involved in the design of the report form. One criticism of the report is the duplication in the data collected, eg. the patient questionnaire had already collected data concerning the alcohol, nicotine and dietary intake in addition to details on the patients' medical condition. However, completion of the First Report at least resulted in confirmation of these factors! The First Report also showed the heavy bias towards 'clinical ecology'. Pages three and four of the report in particular outlined methods which only a doctor active in this field would be likely to use. The questions were, therefore, too specialised to have general application. Only a small number of these forms (74) were in fact completed probably because of their unsuitable nature.

#### Six Month Progress Report (R2)

This Report (see Appendix 1.5.2), was primarily designed by the collaborating organisation, and was intended to produce data on the progress of the preparation for pregnancy by patients/couples attending for pre-conception care. The clinician was requested to complete the form following the consultation six months after the initial meeting with the couple. Information was sought on any changes in the nicotine, alcohol and dietary intake. The Report was also intended to produce data on the results

of any treatments which clinicians had suggested for patients suffering from a diagnosed medical condition. The problems referred to for the First Report above were also found with this Report and there was a low completion rate (only one clinician in fact returned completed six month progress reports).

#### Seven Months Pregnancy Report (R3)

This report (see Appendix 1.5.3), once more largely designed by the collaborating organisation, was intended to produce data on the progress of the pregnancy of a patient who had received pre-conception care from her clinician. It contained questions on the clinician's assessment of the mothers general health, with the usual questions concerning nicotine, alcohol and dietary assessment of the patient. It further elicited information on the supplementation progress of the patient, collected data on problems presenting in the first seven months of pregnancy and data on dietary control advice for diagnosed specific conditions. Some of the questions in the report were found to be rather confusing to respondents and perhaps having little obvious relevance. The clinician would have perhaps gained more useful information by consulting the patient's ante-natal care clinic. Although it was useful to attempt to gather information on the progress of the pregnancy, the report form was rather cumbersome. Again, only a small number of those forms were completed, perhaps reflecting their unsuitable nature.

#### Birth Report (Baby) (R4)

This report (see Appendix 1.5.4) form was developed following discussions with Foresight and was distributed to the Foresight clinicians. The form was again coded for later computer analysis. The report was developed in order to gather information on the birth details and conditions of a "Foresight" baby. The report was

intended to elicit data on the date of birth, sex, weight at birth, weight at seven days, head and chest circumference and apgar score. The clinicians completing this form would have been able to access this information from the hospital concerned. In addition, the report sought information on the state of awareness of the baby, for example whether the babies sucking reflex was good, poor or abnormal. In addition, data on the medical condition of the baby was to be provided. Finally the report contained a list, taken from the DHSS Form SD56, of possible congenital malformations. It was intended that data collected would be directly comparable with national statistics. Only ten completed birth reports were returned to the University between January 1985 and February 1987.

#### Birth Report (Mother) (R5)

This final report (see Appendix 1.5.5) was intended by the Foresight organisation as a means of collecting data on the health of the mother following the birth of her baby. The report form elicited data on the mother's general health and information was requested concerning the mothers experience of the birth and a description of the labour. It is difficult to determine how the data once collected, might be interpreted and the value of the results are therefore questionable. In addition, completion of Report 5 would involve the clinicians in accessing information from the hospital or from their patient's own General Practitioner and midwife.

Thus the report forms were all largely designed by Foresight and unfortunately were characterized by poor response rates.

(ii) Interviews

Interviews were carried out with a number of individuals and groups: the Foresight clinicians; staff at the West London Pre-conception Clinic; District Health Education Officers and the founder of the Foresight Organisation. Each of these is now discussed separately.

The Foresight Clinicians

The original aim of the research had been to evaluate the effectiveness of pre-conception care provided by Foresight clinicians. The questionnaire and the report forms, previously described, had been developed to collect information on patients attending the clinics in order to establish a data base for computer analysis. The initial objective of the research was to establish the data base for future continued study. However, it was discovered that the clinicians were not completing the necessary forms and many were idiosyncratic in their approach. It was considered necessary to carry out interviews with the clinicians to obtain qualitative information of their approach to the question of pre-conception care. It was at this point that the collaborating organisation expressed considerable reservations about the direction the research was taking. Foresight felt that a diversion from the main activity of building up a data base for quantitative analysis was not justified. It became a classic "two way stretch" situation, with the Foresight organisation's requirements becoming increasingly at odds with what the researcher (and her University supervisors) felt could be achieved.

A further reason for interviewing clinicians was to evaluate the way in which they were applying the protocol. In addition, it was hoped to identify some of the problems which had led to the low number of returns of questionnaires and report forms used for the establishment of the data base. Twenty-five of the clinicians were interviewed. The interviews took place between March and July 1985. The interviews



were semi-structured; the aim was to allow the clinicians to express freely their opinions of pre-conception care, the Foresight organisation and the current research programme. The interviews were conducted over approximately 30 to 90 minutes. It was hoped that, if a rapport was established, clinicians would subsequently be more inclined to assist in the establishment of a data base concerning their patients.

It was made clear to the clinicians that the aim of the study was to analyse the effectiveness of pre-conception care and not solely to promote the aims of the Foresight organisation. Access to clinicians was gained following assurance that data would be treated with confidence. The majority of the respondents were interviewed in person, but four of the 25 interviews were conducted by telephone.

A structured questionnaire was not used since it was intended to respond to clinicians' replies with supplementary questions in order to probe the reasons for their initial response. However, questions were phrased in an identical manner, so that conditions were standardised as far as possible. A semi-structured interview schedule was used and this is shown in Appendix 1.6. The information gathered during the interview consisted of factual background information on the clinician, for example, the number of years they had been practicing medicine, the type of practice and the work in which they specialised. Clinicians were also questioned about their interest in pre-conception care and their relationship with, and attitudes to the role of the Foresight organisation. In addition, clinicians were asked to comment on the research, the various report forms, the questionnaire and in particular the clinic protocol. Information was collected concerning their views on the concept of pre-conception care, the screening tests and their use of vitamin and mineral supplementation. Additional information was obtained concerning the clinicians' views on the services of pre-conception care and the possible future development of the service. The interviews were tape-recorded and later transcribed, the details of which are given in Chapter Four.

### The West London Pre-Conception Service

The West London clinic is described in more detail in Chapter Five. This service was the first to be established within the National Health Service. It was decided that it would be useful to compare this public service with that provided by Foresight clinicians working mainly within the private sector. Interviews were conducted with the four members of staff namely two midwifery sisters, a nursing tutor and the consultant in charge of the clinic. The interviews varied in length from 30 minutes to two and a half hours. Two of the interviews were conducted in person, one at the clinic and one at the home of the respondent. However, due to difficulties in obtaining a face to face interview, two of the interviews were conducted by telephone. The interviews were tape-recorded for later analysis. Since the main point of the interviews was to compare provisions with the Foresight clinics a similar semi-structured interview schedule to that used with the Foresight clinicians was employed. Respondents were reminded that the researcher was independent of the Foresight organisation and as such, was attempting an independent and objective assessment and evaluation. In addition a participant observation study was carried out at the clinic. (A copy of the semi-structured interview schedule used is given in Appendix 1.7).

### District Health Education Officers

These interviews were conducted with ten West Midlands District Health Education Officers during the months of August to November 1985. The purpose of the research was to ascertain the views and attitudes of individuals working within health promotion to the concept of pre-conception care. In addition, it was hoped to gain access to information on local initiatives and local provisions which the District Health Education Officers might have been willing to share. Agreement from the respondents to

be interviewed was obtained following a formal introduction made at a District Health Education Officers general meeting in June 1985. Each interview was preceded by an explanation of the objectives of the study. Assurance was given that the information received would be treated with confidence with the anonymity of the respondents being preserved. A semi-structured interview schedule was used and this is given in Appendix 1.8.

The information obtained during the interview consisted of specific background information on the Officer's District and Officers were asked to discuss their role and their work mentioning the priorities which had been identified within their district. In addition, officers were asked to give their opinions on pre-conception care generally and on the role of the Foresight organisation in particular. It was observed that all were familiar with the organisation. Information was requested on their knowledge of local services of pre-conception care which had been established. The interviews were tape recorded and are described fully in Chapter Seven.

#### The Foresight Organisation Founder

It was decided to conduct an interview with the founder of the Foresight organisation. The purpose of the research had been to evaluate the Foresight pre-conception care services to establish a data base and to test specific hypotheses regarding health, diet and subsequent pregnancies and births. As has been shown the focus changed as the study developed and it became more an assessment of pre-conception care generally. Nevertheless it was vital to examine more closely the history and philosophy of this pioneering organisation and to collect information on its objectives. The interview took place in January 1986 at the headquarters of the organisation. The use of a semi-structured interview schedule was helpful in focussing the data to be collected and useful to keep the discussion relevant. The information

gathered during the interview consisted of background information concerning the establishment of the organisation and its philosophy, as well as details of the internal organisation, (eg. the role of the branch secretaries was clarified). The interview proved to be most useful and lasted for approximately one hour. The transcript was later analysed to supplement the information already gathered following a literature review.

(iii) Participant Observation

In addition to the data gathered in formal interviews and informal discussions, both participant and non-participant observation also proved to be a fruitful source of information concerning the functioning of the West London Pre-conception Clinic and the activities of the West Midlands Regional Health Authority Ante-Natal Care Action Group. The observation of the West London service was arranged in advance and permission was obtained to "sit in" on a clinic session for a period of five hours. The observation was of a 'normal pre-conception session'. Notes and observations were written up after each consultation had finished, in an attempt to reduce the effects of the presence of the researcher on the consultation and its participants. The West London clinic sessions are described fully in Chapter Five.

As a result of contacts made during the research, the author was invited to become a member of the West Midlands Regional Health Authority Ante-Natal Care Action Group. This was one of the eight advisory groups to the Regional Advisory Group on Health Promotion (RAG). As a consequence it was possible to observe the group dynamics and the process of decision making. In addition, information was obtained concerning "key personalities" within the West Midlands Regional Health Authority (WMRHA). Membership of the group also allowed access to information from a variety of other sources. Thus, many avenues were opened which would otherwise have remained closed. These participant observation sessions proved



extremely valuable. As Bailey has pointed out (1982):

" ... all things being equal, observation of an occurrence has greater face validity than a secondhand account gathered either through interviewing or document study, as evidenced by the old adage, 'Don't believe anything you hear and only half of what you see'".

Finally, it must be noted that another important source of data was the informal discussions which the researcher had with a wide variety of people. Discussions with midwives, health visitors, nurses, doctors and members of organisations such as the researchers of the National Epidemiology Perinatal Unit, Oxford, were held throughout the period of the research. The information which was obtained from these discussions was frequently of direct relevance to the research study and that which was not directly relevant was useful as background data. For example, conversations held with midwives attending a pre-conception care conference gave some insight into actual conditions in some ante-natal clinics. The knowledge gained proved invaluable for the later formal interviews where it was important for the researcher to demonstrate to the interviewee an awareness of the central issues.

#### 4 Recording, Classification and Analysis of the Questionnaire Data

The data received on the couples attending the Foresight pre-conception clinics was computer coded and was thus available for computer analysis, adopting the Statistical Package for Social Scientists (SPSS) (Norusis, 1979). The data files set up included the qualitative information collected by the patient questionnaires, that collected by the clinicians First Reports and, the data collected on the hair analyses. Each patient was assigned a unique code. An example of the classification and coding of the variables used in the patient questionnaire is given in Appendix 1.9.1. The classification of the qualitative data required the noting down of all the responses supplied by respondents to the various questions which were not pre-coded. Following

examination, a code was assigned and this was also entered into the computer for later analysis.

The coding of the qualitative data obviously proved more difficult than the classification of the pre-coded information. Many writers have commented on the difficulties of giving order to large quantities of qualitative data, for example, Cass et al (1978) and Turner (1983). The interview question headings were used as a method to store all the information from respondents which enabled the qualitative data to be recorded systematically.

The starting point for the analysis of the quantitative data was to decide which were the key variables to be selected for computer analysis using the SPSS programme. The key variables selected resulted from the need to compare the Foresight patients with those attending the West London pre-conception clinic. Foresight were interested mainly in a quantitative medical evaluation of pre-conception care, whilst the researcher was concerned more with the general provision for pre-conception care and with the analysis of the qualitative attitudes of the providers of the service.

A "whole count" of the data contained in each of the three data files was conducted. The results obtained are presented in Appendix Four. Analysis of the qualitative data was considered to be very important due to the limitations of the data base. It was decided that it would be a fruitless exercise to conduct tests of significance bearing in mind the small amount of data available. Although all the data available up until January 1987 was fed into the computer only some of the variables received detailed analysis. As already indicated it is envisaged that, as more data becomes available from clinicians, it will be added to the data base.

The data collected from the interviews conducted with the different groups of respondents, referred to above, was also analysed. Transcripts of the interviews were read and re-read and categorised into subject headings. When the research was being

written up the qualitative data was enriched by the quantitative data (limited as it was). Both types of data were complemented by participant observation.

## 5 Conclusion - Some Problems of Collaborative Research

Bell and Newby (1977) have argued that methodological descriptions rarely give a complete account of how a research project is actually carried out. They state that the process of writing a methodology chapter has, to some extent, the effect of "tidying up" the methodology because of the need to write the Chapter in a systematic form. This tends to give the impression that the research was undertaken in a more coherent and orderly way than was actually the case. Many authors, including Atkinson (1977) and Wiseman (1978) have shown that the research is not always conducted in this manner! It is common for different stages of the research process to occur simultaneously. Different methods of data collection are used at the same time and various methodologies are tried until the most appropriate ones are found. This describes well the development of methods used in this study!

It is useful to consider again some of the problems which arose and to consider the probable effects upon the data collected. This research was located within Aston's Interdisciplinary Higher Degrees Scheme and involved collaboration with the Foresight organisation and was thus constrained. The research design and the approach used to collect data needed to be fitted into the philosophy and needs of the collaborating organisation and was determined not by the considerations of the actual research question, but by the researcher's responsibilities to the collaborating organisation. The consideration of alternative methodologies and investigations were taken in the light of what was feasible and what opportunities existed to enable suitable data to be collected.

The study was broadened when it became clear that the Foresight approach was only part of the pre-conception care "story". Additional methods were introduced therefore such as the interviews conducted with District Health Education Officers in an attempt to answer some of the questions identified during the development of the study.

A number of problems arose concerning the establishment of the data base. The initial list of Foresight clinicians provided by the Foresight organisation was extremely 'optimistic'. Following the information gathered from the initial telephone follow-up and later by the six month follow-up it was evident that the number of Foresight clinicians willing to co-operate with the acquisition of a data base was much smaller than originally expected.

The development of the 'research tools' for the collection of data proved a lengthy process. Valuable time was spent developing the patient questionnaire and the clinic protocol. In addition, activities to co-ordinate the research study, with clinicians being contacted, forms being developed and printed, the design being approved by the collaborating organisation and clinicians had entailed devoting considerable time in the initial stages to the setting up of the research programme. However, when it became evident that the data base was going to be small, additional time then had to be allocated to re-think the research objectives to enable the obtaining of information which would contribute to, if not meet all of the collaborators original objectives. The supplementary methods of data collection chosen were thus constrained by available time since the "change of direction" in the study occurred in the summer of 1985.

The interviews conducted with Foresight clinicians proved especially challenging. The respondents were quite difficult to interview because, due to the nature of their work, they were used to conducting the interviews and asking consultation questions, a problem identified by other researchers such as Smigel (1958). The use of



a semi-structured schedule proved valuable to ensure that the areas of interest were covered during the interviews, especially as it was discovered that some of the respondents had very strong opinions on many of the questions asked. There was a tendency for the clinicians to discuss at great length certain of the issues raised. It was quite difficult to try to "control" the interview, allowing the respondent to discuss certain subjects of interest at length but also keeping the discussion to the topics that the researcher wished to cover.

It emerged during the interviews with Foresight clinicians that many had been providing a pre-conception service for only a short time. Accordingly, the questions seeking information on the clinicians opinion of pre-conception care, their opinions of screening tests and their standard clinic protocol could not be answered. Sometimes, the clinicians were "forced" into giving an answer to a complex question without having previously thought about it. Much of the data collected from the clinicians who were interviewed was therefore data of a retrospective nature and as such, its reliability and validity is questionable as is always the case with such data.

Originally the idea was that the interviews would not be discussed with the collaborating organisation, however, this matter was later re-negotiated. The reasons for, and the extent of the clinicians' departures from the full Foresight protocol were of intense interest to the organisation, which had assumed that clinicians would follow the protocol. The summary results were discussed with the Foresight Executive Committee who made clear to the researcher the importance of knowing precisely which clinicians were following the full protocol, especially the hair analysis routines and which were not. A letter was therefore drafted jointly by the researcher and the Executive Committee to the clinicians and it was decided to send also the draft transcripts asking them to confirm the accuracy of the transcripts as a record of the interview, and to seek a

modification of the researcher's undertaking of confidentiality in order to share the information with the Foresight Committee in confidence (see in Appendix 1.10).

Twenty-three transcripts were sent to clinicians and 13 were returned with minor or no corrections; ten clinicians were willing to have copies sent to Foresight in confidence. Three of the clinicians who had replied, declined to allow Foresight to receive a copy of their interview. The value of the evidence of the transcripts was enhanced by the interviewees confirmation of accuracy of the transcript, but the added pressure presented by the active needs of the collaborating organisation is demonstrated.

Though there were fewer problems with the interviews conducted with the District Health Education Officers, some initial hostility to the research was apparent. This seemed to be related to the fact that the study was supported by the Foresight organisation which was considered to have rather fixed views. Although it was stressed that it was an independent investigation, it was felt that this was never truly believed.

The interviews (and participant observation) conducted at the West London Pre-conception Service were relatively trouble free. However, it was a very busy clinic and this meant that it was not always possible to obtain the respondents full attention. A major difficulty underlying the research at the clinic concerned the fact that at the time of the interviews the future of the clinic was under question. Moreover the respondents were not in a position to discuss the successes or otherwise of the venture as it had not been fully evaluated officially.

The participant observation of the Ante-Natal Care Action Group provided valuable information on the operation of one of the advisory groups for the Regional Advisory Groups on Health Promotion (RAG). One problem which was identified was the not unusual one of observing and remaining objective whilst actively participating in the tasks of the group. However, the original objective of observation of the process of decision making proved an impossible task due to the situation where many decisions

were taken outside the "boundaries" of the group and as such, the processes were unobservable. Participation in the group however fostered valuable contacts and acceptance elsewhere.

Having described and critically examined the methods of data collection in this chapter, Chapter Three examines in detail the history, philosophy and practice of Foresight, the collaborating organisation.

**CHAPTER THREE**  
**PIONEERING PRE-CONCEPTION CARE: THE FORESIGHT**  
**ORGANISATION**

This chapter examines the Foresight organisation and its pioneering work in pre-conception care. It is divided into three sections. The first examines the historical development of the organisation and is based on information drawn from an interview conducted with the founder of Foresight, Mrs Belinda Barnes and one of the committee members. The second section examines the philosophy of Foresight, looking in particular, at the views which it presents in its published literature. The final section discusses the work which has been conducted by Foresight and considers, also, at its internal organisation and the relationship between the Foresight organisation and the Foresight clinicians.

## 1 The Development of Foresight

An interview was conducted in December 1985 with Mrs Barnes and a member of the committee of the Foresight organisation. The aim of the interview was to identify how Foresight had been established and to examine the circumstances under which it had developed. The interview which was tape recorded was carried out at the Foresight headquarters and lasted for approximately one hour. During this time, valuable information was collected concerning the motivating factors behind the development of the organisation and, in particular, the interests of the founder, Mrs Belinda Barnes.

The factors identified to have influenced the establishment of Foresight, included to a large extent the personal life experiences of the foundress. Mrs Barnes had a brother who died in infancy and also she has had three children of her own, one of whom suffered from dyslexia in addition to being coeliac. Another child suffered from various allergies, including osteomyelitis. As a practising nursery nurse from the age of seventeen and, later, as a school matron, Mrs Barnes became aware of the existence of problems such as allergies and hyperactivity in children for a number of years before her work with Foresight actually began. Mrs Barnes adopted a gluten free diet for her own child and this was applied to a number of multiple sclerosis patients at a Cheshire Home near to her home. This work had received the support from a Dr Hunter, a neurologist working in Guildford. However, due to a number of objections from some of the doctors this work was stopped. Mrs Barnes was criticised for advocating a regime which had not been scientifically proven. She commented:

"This is where I learned that the people who block most of the new knowledge, saying "its not proven and therefore we can't do it", even if its only the giving of nutrients by the doctors".

It was stated that the development of the Foresight organisation did not occur suddenly, but came to be set up as the result of a number of incidents and, in particular, was largely due to the enthusiasm and personal research interests of Mrs Barnes. As regards this Mrs

Barnes stated:

"It sort of just came to a head, it didn't suddenly just burst like a daffodil".

"We thought that we ought to get to parents before they get pregnant".

The founder of Foresight, had an active involvement already, in many health care related associations. Her comments were:

"At the time I was on the Committee of "Action Against Allergy", I was on the Committee of Sanity. I was communicating a lot with the Schizophrenia Association of Great Britain, I was in touch with the Hyperactive Society. I belonged to the Coeliac Society, I also belonged to the Dyslexia Association and I was receiving their newsletter".

She had also been in close communication with a doctor in the United States, Humphrey Ormond, who was working with alcoholics. Mrs Barnes had spent eight years reading and studying the medical literature on alcohol, and was helping with the work at the Westminster Advisory Clinic on alcoholism.

Following a number of discussions with interested individuals and friends, it was decided that an association should be formed to promote pre-conception care. Approximately eight medical advisors discussed the objectives of the organisation and an inaugural meeting was held in London in 1978. The meeting was chaired by Professor Dickerson the professor of Human Nutrition at Surrey University. Following this meeting, a proposal to establish the charity was drafted and this was then sent to the Charity Commission for their consideration. The legal formalities took nine months but, in 1980, Foresight became a registered charity. Foresight's first endeavour involved publication of a number of booklets and leaflets to publicise its work. A committee was established consisting of seven members, including two nutritionists and a midwife, the others being lay members. Foresight also received assistance from six medical advisors all of whom subsequently provided a pre-conception care provision.

Foresight committee meetings are held three times a year. Membership is open to individuals and a membership fee is charged. It was felt that this contribution would support various research projects. Foresight grew quickly and by 1985, there were 3,500 members and the purchase of a computer was being considered to ease the administrative burden. A newsletter was developed to keep the membership abreast of the work which Foresight was conducting and is sent out three times per year. In order to encourage members of Foresight to meet and discuss pre-conception care, local branches were set up. Also, the role of Branch Secretaries was developed. Newsletters were used also, to help in the recruitment of branch secretaries who, it was hoped, would help with local fund raising etc.

"We thought we would divide Foresight into branches and have branch secretaries ... they all do different things ... some of them are very good at one thing some are very good at another".

What were the problems faced by Foresight in its early days? A major difficulty lay in the recruitment of doctors interested in pre-conception care. It was not easy to persuade the medical profession of the need for pre-conception care. The great stumbling block was the problem of obtaining proof of the value of pre-conception care and the Foresight organisation found considerable complacency when they approached doctors:

"A lot of them (doctors) are resting on their laurels because we've cured polio, we've cured smallpox ... that's all gone on and that's fine, that's all old hat ... The diseases are environmentally caused ... the environment doesn't stand still and doesn't wait for double blind trials".

The very term "pre-conceptual" was problematic. In the early days of Foresight, it was found that many doctors would not recognise this terminology (a problem which still exists).

"If any of the doctors had said at the beginning we don't like pre-conceptual we want to say pre-conception care. I wouldn't have minded. It was only after I had had 30,000 things printed, ie. the Guidelines for Future Parents and letter headings etc that anyone objected, by which time it was all too late!!"

The major part played by Mrs Barnes in getting Foresight established was recognised by the Committee member who said.

"To go back to the origins of Foresight the fact remains that Mrs Barnes and she alone had the vision of this whole thing. That it was necessary to go back before pregnancy so that people were fit to produce healthy babies".

"When I worked at the Community Health Council, the word did not exist and when I left ten years later it did".

"It was Mrs Barnes who has put the word in the British language".

Having explored briefly the development of Foresight, the interview then went on to discuss the future objectives and developments planned for the organisation. It was hoped to continue to support the research study at Aston University and Mrs Barnes looked forward to the day when, its pioneering work done, Foresight would eventually disband:

"Oh, absolutely in due course it will, (disband) well I hope so before I'm too old. What I hope is that I could hand over my ideas to the National Health Service with them doing them properly, that's the thing, not by saying to Mrs X, I should cut down on drinking if I were you without saying how much".

The Foresight committee member felt that, ideally, pre-conception care should be provided within the National Health Service.

"Within the Health Service, within every health district, there are family planning clinics. They do not do family planning ... what they do is contraception. What I would like to see, is that they would be planning the family because they get people on contraception and they get people who are getting pregnant and they are the people who ought to be doing this work".

The founder made the following remark:



"I would rather the midwives were doing it (pre-conceptual care). They are more warm hearted and if one got people like Jane Gillett (from the London Clinic) and had pre-conceptual care and ante-natal care with the same people right through they could start off right at the beginning for their pre-conceptual care, go to the same midwife for their ante-natal care and birth and the same midwife take them through breastfeeding. I think they could really love that woman like they used to in the old days".

Clearly the Foresight organisation developed primarily due to the enthusiasm of one particular individual, Mrs Belinda Barnes. However, the support received from a considerable number of medical and lay advisers made an important contribution to its establishment and later development. The philosophy and objectives of the organisation are now considered in more detail.

## 2 The Philosophy and Objectives of Foresight

The objectives of Foresight are summarised in its publication "Guidelines for Future Parents".

"Foresight" believes in looking to the future. Care for both parents before conception means that the problems of birth defects and child ill-health are tackled before they start". (1980b)

The organisation's formal aims have been stated as follows:

"The association 'Foresight' has been formed to see that all possible steps are taken to ensure that every baby enters the world free from congenital deformity and mental damage and in perfect health". (Foresight, 1980a).

This publication goes on to explain that the concept of 'pre-conceptual' care embraces two plans of action. The first is "to secure optimal health and nutritional status in both prospective parents, prior to the conception of the baby". The second is "to instigate research aimed at the identification and removal of potential health hazards to foetal development, in the external environment in which the mother will carry the child". (Foresight, 1980a).

At the heart of the Foresight philosophy is the belief that the numbers of perinatal deaths and congenital birth abnormalities suffered, could be drastically reduced if improvements were made to the health education and nutrition of both prospective parents prior to conception. Foresight has identified a large number of nutrition studies to show problem areas and to suggest methods whereby these could be tackled. For example, in their discussion of the reasons why the improvement of an individuals' nutritional intake should be made, the work of Price (1945) has been described. This work is presented as an example of "the disastrous consequences to foetal integrity of the increasingly refined and valueless diet of modern man". Price found in his anthropological studies of the life-styles of Eskimos and African tribesmen that, where people were living on natural, whole, unprocessed foods, their children were "born without disadvantages". He hypothesises that with the "advance of civilization" with, for example, the introduction of highly refined and processed foods, the first generations produced after the change of diet were prone to dental decay, narrowing of the jaw and dental arch and allergic syndromes. Later births were reported to be prone to cranial distortion, other skeletal abnormalities, and brain and central nervous system damage.

The work of Price (1945) and Pottenger (1946) who were reported to have conducted a number of experiments with laboratory animals and domestic live stock, were described by Foresight, to have "proved conclusively that many disorders, formerly thought to be genetic, could be reproduced or eliminated at will, by dietary manipulation". Other work which Foresight has highlighted in their literature on the implications of the nutrition intake of individuals has included the work of Jennings, (1970) who reviewed work on vitamins in pre-natal life, in her book Vitamins in Endocrine Metabolism. This book reviews work (mostly on animals) investigating the effects of deficiencies of vitamins A, B Complex, C, D and E and the essential fatty acids on perinatal deaths and congenital damage.

The Foresight organisation literature, thus draws on work conducted on experimental animals involving the manipulations of their diet. Another aspect of the organisation's literature looks at research conducted at various American institutions, including work carried out at Wayne State University, University of California, Harvard Medical School, the Dartmouth Medical School, and The Brain Bio Centre in New Jersey. These institutions have all examined the role of essential trace elements prior to birth, endeavouring to show the effects of dietary excesses or dietary deficiencies on the foetus. The Bio Brain Centre for example, has according to Foresight produced research "showing how the modern diet is lacking in trace minerals and how modern man may be failing to metabolise certain minerals due to pollution, vitamin and essential fatty acid deficiencies and other factors".

Other work which Foresight has publicised includes that of Williams (1971a) and Schroeder (1973). The Foresight organisation shares the views of these scientists and endorses their work, which states that, for the period of pregnancy, nutrition must be of a particularly high quality, above that which sustains normal adult life. The present situation for most pregnant women is seen to be problematic. The nature of the modern diet, with large amounts of refined and commercial foods is seen as depleting the body of essential vitamins and trace minerals, placing the foetus at risk. The Foresight organisation also discusses the effects of compounding problems affecting the nutritional status of individuals. For example, the effects of oral contraceptives, alcohol consumption, smoking and the intake of pesticides and herbicides are all seen as having a combined effect which may be detrimental to the developing foetus.

Foresight seeks to counter these problems through a programme of education and publicity:

"Foresight" believes the dangers (of inadequate nutrition) can be minimised by education in nutrition and the possible use of a supplementation programme". (Foresight, 1980a, p4)

Foresight stresses the importance of protection from pollution and draws on medical research to demonstrate the adverse effects of certain metals. Research discussed includes that of Wibberley and Khera (1977), Bryce-Smith and Deshpande (1977); Needleman and Gunnoe (1979); and Bryce-Smith (1980). A key aspect of the Foresight philosophy is summarised as follows:

"Foresight believes the detection and subsequent cleansing from the system of toxic metal levels (lead, mercury, cadmium and aluminium) prior to conception, is vital to foetal safety". (Foresight, 1980a, p6)

As well as stressing the importance of nutrition and protection from heavy metal pollution, Foresight also emphasises the importance of combating allergy, again drawing on the work of Price (1945) and Pottenger (1946) and from the Price Pottenger Nutrition Foundation. Their research is said to have demonstrated that allergic syndromes of the upper respiratory tract, and of the skin, could be produced at least in experimental animals, by the feeding of some cooked and processed foods; and eliminated in succeeding generations by the use of foods said to contain the full complement of vitamins and minerals found in their 'natural' diet. The work of Walker (1956), the former President of the British Association of Allergists is also presented to support Foresight claims. This research involved a pilot study involving 93 pregnancies where it was found that desensitisation in the early stages of pregnancy reduced the number of allergic children born by four fifths. Foresight's position may be summarised as follows:

"Foresight" believes it will be worth funding further work to study the avoidance of allergy". (Foresight, 1980b)

Thus, Foresight states that it feels that the problem of perinatal or neonatal

mortality and morbidity could be solved by tackling these three major problems, ie. by improving nutrition with health education and nutritional supplements, by protection from pollution using the detection and cleansing from the system of toxic heavy metals and by combating allergy by supporting further research to study the avoidance of allergy.

The issues presented above, are discussed throughout the literature which Foresight produces. For example the booklet Guidelines for Future Parents with a forward by Professor J Dickerson of Surrey University, states the following:

"The objective of the parents booklet is to set out in simple terms, steps that the average prospective parent can take to ensure, as far as possible, a happy, healthy start to their child's life". (Foresight, 1980b)

The booklet goes on to state:

"The Foresight Association believes that most of the problems can be avoided with sufficient care, and with preparation of both parents prior to conception ... it believes the risks to foetal development come from three main causes (a) parental infection prior to pregnancy, (b) unsuspected malnutrition due to nutritional deficiencies of modern processed foods, or impaired absorption, (c) personal and/or environmental pollution". (1980b)

It is Foresight's stated belief that if it can help both parents, prior to conception, to be free from infection or allergic illness, to be eating a well balanced diet or supplementing their diet to provide the baby with all the nutrients, vitamins and essential trace minerals it needs, and to be free from toxic substances which will poison the baby, (such as steroids, nicotine, alcohol, drugs and toxic metals such as lead, aluminium etc). Foresight argues that the number of stillbirths, congenital anomalies and perinatal deaths could then be reduced. In addition, Foresight claim that the number of children subsequently suffering from hyperactivity, learning difficulties, allergic syndromes such as eczema, asthma, hay fever and headaches could also be reduced.

A very important aspect of the Foresight approach is to stress the role in preparation for conception by the male as well as the female. They state:

"In human reproduction, the father's role in the promotion of foetal integrity has long been over-looked, although of course, the importance is well-recognised in farming and stock breeding and in the breeding of pets". (Foresight, 1980b)

The Foresight literature sets out a 'plan of action' to help both parents to ensure that they are free from infection, that they have a satisfactory diet without nutritional deficiencies, that they are not suffering a mild malabsorption syndrome or allergic illness that may be disrupting their metabolism and causing them sub-optimal health. Finally, Foresight states that a plan of action would help both parents to ensure that they were free from heavy metal toxicities or from trace mineral deficiencies.

"At a family level, now that so many people can only afford one or two children, it is even more tragic if either or both of them should have some form of handicap which a certain amount of foresight could have forestalled".

"Britain's unborn generations depend on us all to see that life in the womb is safe for them. We must not fail them". (Foresight, 1983)

Foresight maintains that on a national level without action, the growing burden of mentally ill and physically handicapped may:

"Eventually become too great, both in human terms, and financially, for the fit population to support and carry ... Eventually, the unemployed could out number the employed. The employed tax-payer would be supporting a vast burden of outgoings in nurseries for the hyperactive youngster, the hospitalization of the deformed, remedial classes, long term care for the mentally handicapped, custody and probation for the young delinquent (many young criminals are subtly mentally handicapped) and the ever-rising cost of the NHS".

"Foresight believe that pre-conceptual care can be the first step in turning back the tide. Adequate nutrition, coupled with minimal polluting factors should mean conception with a strong ovum and a healthy germ cell. A healthy intrauterine environment with all needs well supplied and all poisons kept at bay, followed by an easy drug-free birth and demand feeding with adequate lactation, slow gentle weaning on to a well-balanced whole food diet, should mean an exceptionally bright, healthy and happy next generation". (Foresight, 1980b)

Concluding:

"... We believe, in fact, that it will be possible to raise a generation of children virtually free from the disadvantages of malformation, allergic illness and compromised mental development".

The Foresight organisation thus presents a review of some of the pertinent literature on the effect of the environment on foetal and infant growth and an argument which maintains that the developing foetus requires protection from a danger of nutrient deficiency by the provision of those levels of nutrients which are, at present, thought to be required for normal foetal development. It maintains that foetal and infant exposure to drugs (including oral contraceptives, alcohol, smoking and heavy metals have a detrimental effect on birth outcomes) and also states its belief that there exists evidence for familiar tendencies in the development of allergic conditions to attempt to prevent these in prospective parents. Finally, Foresight states that evidence exists, (at present only small for human subjects), that the father should also be encouraged to receive detailed medical examinations and encouraged to actively prepare for pregnancy as well as the mother.

Whilst recognising the amount of strict proof to support their approach is limited (some of the evidence presented is anecdotal or based on animal experiments), the Foresight organisation argues that this is not wholly necessary in the field of preventive medicine, quoting a Department of Health and Social Security circular, "incomplete knowledge may be adequate for the purpose of preventive action" (1976d).

### 3 The Developing Work of Foresight

It is useful to examine in some detail the activities of the Foresight organisation and the internal organisation of the group. As indicated above, Foresight has produced a number of booklets in which is summarised the medical and scientific research which, it is argued, provides adequate proof that pre-conception care is urgently necessary. Some of the literature, is specifically targetted to offer practical advice, for example, the booklet Guidelines for Future Parents (1980b). This was designed to give practical

advice to couples. Other literature such as Environmental Factors and Foetal Health - The Case for Pre-Conceptual Care Dickerson et al (1981) is aimed at a medical and scientific audience and contains a review of relevant literature which concerned itself with the effect of nutrition, drugs, social poisons, environmental pollutants and allergic syndromes on the health of the foetus. Such literature was targetted to the 'professional reader' and it deals in greater detail with the results of medical research. Foresight's other literature is largely based upon their transcripts from their 1980, 81 and 82 Symposia, 'Environmental Hazard and Pre-Conceptual Care' (1981) 'Running a Foresight Clinic' (1982) and 'The Next Generation' (1983). The developing nature of the work of Foresight can be seen from the emphases of their symposia. The first conveyed the need for pre-conception care, focussing on issues such as smoking, alcohol, and mineral metabolism. The second symposium of April 1981, dealt with the practicalities of trying to set up a pre-conception service. Information was disseminated on the practical aspects of how the knowledge and care of pre-conception use could be provided to the general public.

The Foresight organisation has been highly successful in developing local branches with the appointment of branch secretaries. The aim of the development of local branches is that they will meet, discuss and progress problems, introduce interested people, both professional and lay to one another and serve to pass on any local information which might be useful to Foresight to disseminate further if required.

A number of medical advisers have permitted their names to be associated with the organisation. This has served to increase the credibility and professionalism of Foresight as well as endorsing its philosophies of the group. The 'medical advisors' (as they are referred to within the literature), also give lectures on the subject of pre-conception care, including such aspects of Foresight work as the significance of hair analysis and allergy screening. Committee members and branch secretaries also occasionally give talks, on a more informal basis, to interested parties such as groups of



midwives or health visitors.

Foresight provides prospective parents with the name and address of a doctor (usually in private practice) who is geographically nearest to them and who runs a Foresight clinic in order that they may attend for a thorough examination some months before they intend to conceive. The Foresight organisation does not act solely as a "referral agency" however. Much advice is given directly by the committee members and especially by Mrs Barnes to individuals requesting specific information or advice. Specific advice is given on vitamin and mineral supplementation regimes, based on the results of hair mineral analysis. Finally, "teach-in's" are held every year by Foresight in different parts of the country. These are provided primarily for audiences of midwives and health visitors.

In concluding this chapter, it must be noted that the Foresight organisation has received much criticism of its views and methods because, it is argued, the scientific proof of what Foresight states is not generally accepted (see Lancet, 1985a, McPherson and Chalmers, 1985). One of the main objectives for this study as far as Foresight was concerned was without doubt the establishment of firm "proof" that the "Foresight approach" to pre-conception care is a valid one). It is argued by their critics that individuals approaching the organisation for advice, or the clinicians for treatment, have expectations which have been raised and which cannot be met due to the existing lack of knowledge concerning the value of pre-conception care programmes. These criticisms are dealt with more fully in Chapter Nine. However it is beyond doubt that the Foresight organisation has served a valuable purpose, not least, by bringing the subject of pre-conception care into the medical debate (Lancet, 1985b). The criticisms which have been levied against the Foresight organisation serve to demonstrate that much opposition does exist and the organisation still has much work to do if it is to achieve its aim referred to above by the Foresight Committee member, the provision of pre-conception care routinely within the National Health Service.

**CHAPTER FOUR**  
**THE FORESIGHT CLINICIANS**

This chapter consists of five sections. The first section sets out the reasons for conducting interviews with Foresight clinicians. The second section presents data on the main characteristics of these clinicians particularly as regards their work and practices. The third section considers the pre-conception services provided by the individual clinicians, it examines their attitudes concerning the provision of pre-conception care and presents information on the people who seek such advice. Section four contains a summary of the clinician's attitudes towards the Foresight Organisation, the problems of compliance with the research programme to establish a data base and their opinions on the possible future developments of pre-conception care services. Finally a number of conclusions resulting from the interviews are presented.

## 1 Background

The decision to interview Foresight clinicians was taken for a variety of reasons - to determine their attitudes to pre-conception care, towards the Foresight organisation and to the methods adopted for the research and it was considered important also, to establish a relationship with them as individuals in order to clarify any misunderstandings concerning the research. It was hoped that this would increase their co-operation with the research programme. It was also felt that it would be valuable to elicit information on the background of the clinicians, for example to see if they specialised in any medical field, or had research interests which oriented them towards pre-conception care.

As has been previously discussed, the clinician's names were made available through the Foresight organisation. It was considered necessary therefore, to clarify the relationship between the clinicians and the Foresight organisation. Also it was important to consider the views and practices of the clinicians concerning the Foresight organisation and to see how closely they conducted their work in line with the methods recommended by Foresight and to see how far the clinicians and the organisation shared similar philosophies concerning pre-conception care.

Access to the Foresight clinicians was sought, to provide back up information to support the quantitative data in the data base (the analysis of which is presented in Appendix Four). For example, information was requested on the type of patients attending. This was considered important because at the time the interviews were being conducted, only a very small number of questionnaires had been received to provide the data base. The interviews with the Foresight clinicians also made possible a comparison of their views and the service provided with those of the pre-conception care providers at the West London hospital (discussed in Chapter Five). This enabled a broad comparison to be drawn between pre-conception services within the private sector (most of the Foresight clinicians) with those provided within a National Health Service clinic.

## 2 The Clinicians Interviewed

A total of 25 Foresight clinicians were interviewed, 17 face to face and eight by telephone. The social class backgrounds of the clinicians were very similar, with most from middle class homes. The education of the group also, displayed many similarities for example, nine of the respondents stated that they had some experience of working abroad. A considerable proportion (20 of the 25) had studied a variety of alternative medical practices. Eight of the respondents were actively involved in other research in addition to the pre-conception care study. The clinicians were all active members of a number of professional associations. The length of time the respondents had been practicing medicine ranged from one year to 40. However, their pre-conception work was more recent, following contact with organisation.

The majority of the clinicians practices were located in southern England. Nine of the 25 clinicians were women, of whom six operated private general practice clinics, (seeing privately paying patients only). Of the remainder, one of those was a general practitioner providing pre-conception advice privately with funds going towards the practice running costs. Another worked on a part-time basis operating a private clinic and a family planning clinic and the other occasionally worked in her husbands general practice. Of the male clinicians interviewed, Table 4.1 shows that 14 of these were private practitioners although nine saw NHS patients. However, of the 25, only two stated that they did not charge a fee for pre-conception care work. Therefore, for 23 of the total of the 25 respondents, pre-conception care was provided privately with a fee charged to the patient. Charges ranged from £16 per hour to £60 per consultancy for both partners.

Table 4.1 - Clinicians Type of General Practice

	Males		Females
	N		N
Private	8	Private	6
General practice/NHS	8	General practice/ NHS	1
Other	-	Other	2
Total	16	Total	9

All of the male respondents provided a pre-conception service from their clinic practice. Interestingly, three of the nine female respondents provided pre-conception advice from their own homes and referred patients to a local hospital for the more complex clinical tests when required. One reason stated for this was wishing to remain at home to look after their children whilst continuing medical practice. All of the female clinicians who worked from their home were sole practitioners. Table 4.2 shows the size and number of partners in the practices. The range in the size of the respondents' practices was from eight sole practitioners, to one clinician in a seven partner practice. Table 4.3 shows the number of practices which clinicians ran. This information is useful to establish whether a relationship was identifiable between the size of practice and the variety of work which was carried out and the degree to which clinicians specialised in a particular area of work, ie. intra-specialisation within practices.

Table 4.2 - Number of Partners in Clinicians Practice

Number of partners	Males N	Females N
One	5	3
Two	4	4
Three	2	1
Four	3	-
Five	1	1
Seven	1	-
Total	16	9

Table 4.3: The Number of Clinicians Practices

	Males N	Females N
One	10	5
Two	4	3
Three	2	1
Total	16	9

Those working as sole practitioners, offered a broad range of services. Clinicians in the larger NHS practices also offered a broad range of work and tended not to use alternative medical techniques. One single-handed GP used alternative medicine and adopted applied kinesiology for his NHS patients as well as for the patients attending his private clinic but this was exceptional. Table 4.4 shows the different areas of work in which clinicians expressed particular expertise or interest (some indicated more than one specialism).

Table 4.4: Clinicians' Specialisms

	Male N	Female N
Allergy detection	9	3
Food intolerance	6	2
Holistic medicine	6	2
Family planning	1	3
Ante-natal care	-	2
Irritable bowel syndrome	2	1

It is interesting that in addition to the provision of a pre-conception care, 12 clinicians stated that they specialised in the detection and treatment of allergies. Eight respondents, were especially interested in the detection and treatment of food intolerances. A further eight respondents stated that they did not specialise but utilised holistic medicine. Table 4.5 shows the variety of methods used for the detection and treatment of patients' conditions by various practitioners.

Table 4.5: Clinical Practice - Methods

	Males N	Females N
Homeopathy	7	2
Acupuncture (electrical)	3	2
Applied Kinesiology	3	1
Holistic approach	5	2
Clinical ecology approach	9	4
Cyto-toxic testing	4	2
Sub-lingual drops	2	-
RAST	1	-
Hair analysis	13	6
Sweat test	3	2

Eight respondents adopted alternative medicine practices for the detection of conditions. They tended to use more than one method. It tended to be the respondents' original

interests in alternative medical practices, particularly their diet and nutrition interests, which made them aware of the Foresight organisation. The findings suggest a high level of interest in "alternative" medicine amongst Foresight clinicians.

### 3 The Clinicians' Comments on Pre-Conception Care

#### (i) First Involvement

This section presents data on the attitudes of Foresight clinicians to the concept of pre-conception care. It indicates this study's findings on the existing provisions of pre-conception care and it identifies the clinicians' practices and protocol. Also, the views of the clinicians on the screening tests, especially of hair analysis, are presented. The second part of the section discusses the main characteristics of those seeking pre-conception care from Foresight clinicians.

Respondents were first asked how they became involved in the provision of a pre-conception care service. For most the decision to provide pre-conception care was a result of a professional interest in nutrition and grew from this. Many respondents came to offer pre-conception advice as a direct result of their contact with the Foresight organisation and through their membership of the McCarrison Society. Some comments from respondents were as follows:

"I think it was gradual ... since about the four years that I've been doing food allergy work ... It was a logical step on from food allergy to nutrition and Foresight is one of the most local and active organisations in the area of nutrition".

Another commented:

"I think I became aware of Foresight, probably from the leaflet on Foresight which came along with something from the McCarrison Society,... although I didn't have any specific interest, I was generally interested ... I think it was probably through the McCarrison Society that I became aware of Foresight".

Other clinicians stated that they were influenced by reading work on the Dutch famine written by Wynn and Wynn, (1981). A respondent stated:



"I live in a rural area and I have been impressed with the way people look after their livestock, and they have been following patterns of behaviour, putting ewes into certain sort of food situations. People have been following along these lines with our livestock for 200 years, and so I thought, it should apply to human beings. Then there was this work by the Wynn's and so I thought yes, there must be something in it".

Most of the respondents became involved in the provision of pre-conception care through their contact with the Foresight organisation. Clinicians stated that they had "consciously" provided pre-conception care for one to five years however, for some, they claimed that advice on diet etc had always been an integral part of their practice.

One respondent commented:

"I was already advising (a good diet) and then I got involved with Foresight who gave more specific advice. So really, my experience with Foresight doesn't fit into a neat little package whereby I could say 'these are my Foresight people, and these are my other patients' and that I've got a standard Foresight approach, I haven't. It tends to be the case that I'll treat them like I would do anybody from the preventive as well as the treatment side".

Most respondents commented that they provided pre-conception care to a very small number of patients, subsequently, the percentage of their total practice time spent providing pre-conception care was minimal. One respondent commented:

"The problem from my point of view is just getting a patient to actually come for pre-conception care. You see, that's the problem ... Well I hope you'll have some success in doing what you're doing but I foresee all sorts of problems. From a practical point of view for me, it means that I've got to get a Foresight patient and they're so rare ... nobody has got the idea of pre-conception care. The idea of pre-conception advice, well it just hasn't caught on. In two years, I've only really had two patients who've stuck at it at all. That is, who have turned up more than once".

Another respondent stated:

"I don't see many couples throughout the year, who are asking specifically for pre-conceptual care. Well, I'm seeing about six couples a year, so really, that makes me a high-flyer!"

Two thirds of the respondents emphasised the problems of conducting a pre-conception care service in terms of the need to take a detailed medical history from

both partners and the need to run the practice on business lines. An underlying antagonism thus existed between the time needed to gather all the relevant information and the cost incurred by the clinicians in 'loss of earnings' from other fee paying patients. Only seven of the 25 respondents were actually seeing patients for pre-conception care on a regular basis. Instead, the respondents stated that they were giving advice on an informal basis and not necessarily running a clinic employing the full Foresight protocol. Some typical comments were as follows:

"I'm a person who really believes in it but hasn't really got down to setting up clinics, doing things in the sort of manner that may be I should be doing things".

"It's sort of advice really, to people in Family Planning Clinics. They know that I do this sort of thing, so they turn up or ask me and I give them advice, then tell them to send their hair off (for mineral analysis)".

"I'm only really peripherally involved - I suppose for quite a long time, for about four or five years. I mean, I've been getting the Foresight newsletter".

The data considered so far suggest some significant facts about the Foresight clinicians and help to explain why there was a disappointing return rate of questionnaires. The Foresight clinicians were highly individualistic and had a strong attachment to "alternative" medical practice and a commitment to the general principles of pre-conception care. However they saw a relatively small number of patients and tended to "give advice" rather than follow a standardized form of pre-conception care practice. Clinicians' views on the Foresight protocol are now considered.

(ii) The Clinicians' Protocol

Few clinicians stated that they followed a standard "Foresight" protocol for the pre-conception care patients. Instead, they relied on the information obtained from a detailed dietary and medical history taken from the patients. Some typical comments

were as follows:

"I don't have a routine. I would approach them as individual patients. Although, I suppose the exception to that would be if they come and they haven't got any health problems whatsoever".

"Well, you see, it depends so much on the individuals, on the histories. And the financial state of the patients ... but I would say, basically, for a private patient I would always do a mineral analysis. And then, depending on the history, I would do smears and vaginal examinations and on the private patient I would always do food allergy testing, and would have to sort out their food allergies before they get pregnant".

"I'm guided a lot by their history, taking a detailed health history, but if nothing much comes out of that then I would do a vitamin analysis, mineral analysis, a rubella titre, their haemoglobin and cervical smear, and iron".

The importance of taking a full dietary history from patients attending for pre-conception care was stressed by respondents. Dietary advice was given to all their patients which for many constituted fairly straightforward advice on the importance of eating fresh fruit and vegetables. Some typical comments were as follows:

"And I like to see myself as a General Practitioner using natural methods. I mean, I will approach things from a dietary point of view to start with. If it's obviously an allergic problem, I go to allergies. If someone's hyper-glycaemic, I just need to sort out their diet and in that way I wouldn't use homeopathy. I generally try to advise people on their first visit about their diet to see how far that can help them and I think that's the foundation of health. You have to get your diet worked out. I suppose it's a matter of eating more fresh fruit and vegetables rather than frozen or tinned.

One respondent running a family planning clinic stated:

"Family planning is not just contraception. I give them a lot of dietary advice. May be to work out their food allergies and say 'right, this is what you eat while you're pregnant' - that type of thing".

"If they've had no problems in the past, I just try and get them to eat a healthy diet, a mixed diet, lots of fresh, raw food, free from additives and sugar. If they've got what sounds like a problem with food allergy, it gets more complicated.

Respondents made it clear that they did not conduct all the tests advocated on the protocol developed for the research study. Instead they tended to give dietary advice based on information obtained from the patient's history rather than embarking on a series of tests. The clinicians indicated a number of reasons why advice given to pre-conception patients tended to be general, with clinical tests kept to a minimum. One comment made concerned the wish to keep patients' costs down.

"I don't do many tests. The only thing I really do is the mineral analysis of the hair. And then what I do is go into their own histories through life and then go on from there. I mean, if there's something suspicious and funny then I would, of course, send them to their GP with a letter saying they may be, eg. hyper or hypo-thyroid".

Some clinicians expressed the opinion that psychological preparation was just as important as physiological preparation for conception. Five respondents stated that it was important to offer sound practical advice of this nature. One private practitioner clinician stated:

"The task of medicine is surely to reflect people ... to give information that they need about themselves. More than anything else, I don't think people have any idea about what conceiving actually involves. Where does a baby come from? It doesn't come from minerals. There's a basic process of the beginnings of life, people seem to think is unconnected when having a baby. And yet to reflect on how a baby can grow; and what it is to actually be enabling another person to come into this world, that's an enormous step to take. It's a huge responsibility and I do feel that psychological preparation is often as important as anything else. I think everything comes from that in that way. That's why peoples' awareness of health will change, because peoples' awareness of themselves is changing and that's the aims of my clinic, I certainly sort people out physically as much as you can. I look at all the possible ways that physical illness can be prevented, but as well as that, not just in preparing people for good birth and a good pregnancy, but actually to understand what it is to conceive; that's very important I feel. It's the change in the whole couple's life".

All the clinicians had male as well as female patients attending for pre-conception care. However, most respondents stated that whilst seeing the male partners, they tended not to give them very specific advice but offered broad advice which they considered would be taken, rather than risking the alienation of the couple. This was an important finding,

because it demonstrates that although in theory pre-conception care encouraged the males to receive advice on preparation for conception, more or less equally with their partners, in reality men's attendance was seen by the Foresight clinicians as offering little more than 'moral support'. Interestingly, the female clinicians placed more importance on advising men about pre-conception care than did male clinicians.

"Yes, I've had a few coming with repeated miscarriages and as often it's the husband who's the problem. And one has to try and sort out the husband's food allergies and get him right. Because if you've got a husband with mal-absorption, then the sperms aren't getting nourished. Therefore, you've got to get him right before you'll ever get a baby".

"The man must be checked. And I always say it's 50-50. Look, I say to the woman, 'Look, your husband must be good for three months before conception, I don't care what he does once you've conceived".

Fifteen of the 25 doctors had mixed opinions concerning the protocol which had been developed as a guide and for the standardisation of pre-conception provisions. A number of criticisms were levied against the suggested protocol due to constraints which included the heavy workload of the clinicians, costs incurred by the patients with tests conducted on both partners and lack of scientific evidence available to demonstrate to their patients the value of the tests. Some comments were as follows:

"If we just go back to the protocol, it smacks of the doctor sitting down thinking up the ideal way of managing a stroke, of managing hyper-tension or of managing asthma. I mean, you can do this in a workshop situation and you can produce a beautiful document of what to do in any particular situation. And of course, that may bear little resemblance to what you actually do in the middle of a busy, functioning week. This protocol is the ideal, I suppose".

"Well, unfortunately, you know, we are predominantly working in general practice ... in a general situation, not as specialist counsellors for pre-conceptual care. You know, these things like, ... doing semen analysis, blood analysis for zinc, copper and lead. It's all quite hard to get teed-up at the local level. Now I mean, the hospital think you're mad if you ask for these to be done. So basically ... to try and maintain some sane relationship with the local hospital, GPs, don't go off and request tests which they see as unnecessary.

These comments clearly indicate a lack of agreement concerning the value of procedures advocated by Foresight even amongst the Foresight clinicians. It is not surprising that the return rate of completed questionnaires and report forms was so disappointing. The respondents expressed other concerns about the protocol. Six clinicians felt that they did not have enough background working knowledge to interpret the hair analysis charts. Eight respondents stated that they felt guilt at charging patients for pre-conception care. Other respondents were in a learning situation. They were quite frank about this seeing their knowledge and skills as being developed as they saw more patients and gradually gained clinical expertise in the field. Some typical comments were as follows:

"I know very little indeed, although I have learnt a little more since starting pre-conception care. I've got to grips with it and I've read a lot more because there's a lot more in print now than there was at the beginning."

"I think you do eventually build up a bit of clinical expertise, by seeing a lot of people and making various connections with deficiencies or excesses with certain conditions. You can look at them and think that belongs to such and such a thing".

Pre-conception care was developing via a "learning process" and was therefore a long way from the "formal" scheme proposed by Foresight.

Hair analysis is an important feature of the Foresight philosophy and it is useful to look more closely at clinicians' views on this procedure. One respondent commented on her poor working knowledge of the meaning of the hair charts and the significance of the results.

"And their hair analysis showed, I think in his case the cadmium and aluminium seemed to be somewhat raised but, as I say, I look on this more from a research point of view. I don't know the significance.

Another commented:

"We really don't know what we're doing. I don't know what I'm doing with it. By hopefully correcting the hair analysis, am I making the patient healthier, more liable to have a healthy child? I don't know".

These are interesting comments particularly when one considers how rare it is for clinicians to admit they "don't know".

Whilst it was recognised that some of the clinicians did express doubts concerning the hair analysis for trace metal status, it was generally felt to be a valuable test for the assessment of toxic metals levels. Eight of the respondents stressed the importance and necessity of using a variety of screening tests to include blood, sweat and hair to give a more valuable indication of the patients trace metal status. A comment made was as follows:

"I think the most accurate is to do all three. I don't think blood by itself tells you very much. Well we certainly know with calcium the blood level will be perfectly normal. Unless you're sort of in extreme situations, the body will just take calcium out of the bones and fling it into the blood, and I suspect that that probably happens with a lot of the other ones as well. The sweat gives a useful idea of what's going on in the tissues. None of them really tell you what's actually happening in the tissues completely, but if you take them all together I get the feeling that it's a fairly accurate picture".

Eighteen of the 25 respondents used vitamin and mineral supplementation for their patient. However, if patients were considered to be consuming a balanced diet, this was avoided.

The respondents who were unfamiliar with hair analysis techniques stated that they received advice from Foresight. Five clinicians frequently received advice in the interpretation of the hair analysis charts from the founder of the Foresight Charity. The clinicians were asked their views concerning hair analysis; the most frequently mentioned points made by clinicians was that the literature did not support the Foresight claims for hair analysis and that the costs were often prohibitive. One respondent stated:

"Put like this, I would be a lot more sympathetic or favourable in my attitude towards hair analysis if I saw it being written-up in a more favourable light in the medical press. At the moment it seems to be written-up in fairly obscure American journals".

Another clinician commented:

"The disadvantages of hair analysis are that I don't think it's a practical clinical tool. There may be a lot of correlations between actual blood levels and the level in the hair. They're not accurate and coherent enough for me to believe when I get a hair analysis back that this makes sense in terms of what the patient actually has going around in his blood stream and in the rest of his cells. A lot of laboratories were set up in America at a time when they really didn't have the technology to get results as accurate as they were claiming to do. Particularly for minerals that are in much lower concentrations like selenium and vanadium and so forth, and for a lot of laboratories this is still the case".

The expense incurred by patients was mentioned as problematic. A sole practitioner made the point vehemently:

"This patient had had a follow-up hair analysis and I asked Foresight what I should do about it and they reeled off the minerals that this patient of mine should have, and the proportions all separately, and it added up to an absolute fortune and I never saw that patient again".

Clearly, an important reason why the protocol was not carried out fully was due to the cost of the tests.

One respondent stated that when possible people attending for pre-conception care had routine tests conducted by a GP, eg. a vaginal smear. A problem which was however recognised was that the GP sometimes objected to the request for clinical tests.

Clinicians commenting on the problem of cost stated:

"We can't do all of the tests because a lot of the people who come to see us have scraped up their last pennies to come. I charge the Foresight people slightly less than I do any other patients, although they can take a lot more time and there are two of them".

Another clinician stated:

"I just choose the tests which I think are relevant. When I started, reading all the Foresight literature, I decided to do a basic run-down. Apart from history and examination on the woman, I carry out certain blood tests".

There was another area where the views and practices of the clinicians seemed to



be at variance with the recommendations of Foresight. The central tenet of the Foresight philosophy is "getting everything right" before conception. They recommend that at least three months should be taken to prepare for conception. However, clinicians held conflicting views on the length of time which they considered couples should spend in preparation for pregnancy. One clinician commented:

"My advice for men would be at least three months because that's how long it takes to make a whole new set of sperm. The longer the better, is what I've said to people. If they're not going to do it for three to four months, well then it's not really worth doing".

Other respondents stated that they considered six months to be an adequate time for which to prepare for pregnancy. However, a considerable number of respondents were of the opinion that there was no optimum time; it depended upon the individual's health status, social situation and individual requirements. A comment made by one clinician was as follows:

"Oh well, if it's a fit person, and there really aren't any problems and they've just come for advice, I just say three months because I really don't think they'd wait any longer. And I don't have any concrete evidence to tell them to wait longer. If I did it might be different".

Another problem which was highlighted by the clinicians was that often people did not want to spend the time preparing for conception. A typical comment was as follows:

"I think it would be nice to wait six months. But often, people say "I'm not waiting six months". You know, it's very difficult getting people to accept that. Usually they come to pre-conceptual care and say "I'd like to get pregnant next month". That's the usual kind of thing".

Patients attending the Foresight clinicians were usually in their mid-thirties. This was a possible reason for their reluctance to prepare for any length of time (see the discussion on this in Appendix Four).

(iii) Clinicians' Comments on their Patients

The Foresight clinicians were asked to describe the type of people who attended their pre-conception clinics. The majority of clinicians, 15 out of 25, reported that the social class backgrounds of those attending were very similar. Most come from middle class homes and were in professional occupations. The analysis of the data base in Appendix Four confirms this. None of the respondents mentioned that they had seen patients from ethnic minority groups.

The clinicians reported that there tended to be two distinct groups of patients attending for pre-conception care. One group comprised those who had suffered a previous birth problem. The second group was identified as people who had heard about Foresight and pre-conception care and wanted to attend just to prepare. This second group was often composed of middle class, career women, (and their partners) tending to be slightly older. One private clinician reported why his patients had come for pre-conception care.

"Some because they'd had a previous tragedy. Some because they just read about it and thought it seemed a good idea and it fits in with their ideas".

Some other reasons clinicians gave for their patients attending for pre-conception care were infertility, previous miscarriages and neonatal death.

Clinicians commenting on the typical life styles of those attending for pre-conception care advice and treatment stated that they were fairly active in looking after themselves and understood the importance of following a programme of exercise and consuming a healthy diet. Two thirds of respondents reported that their patients tended not to drink or smoke and were already consuming a good diet. A typical comment was as follows:

"I think often one's preaching to the converted, you know, they've already stopped their smoking and drinking and changed their method of contraception".

Eight Foresight clinicians commented on the positive attitudes of their patients who were very eager to accept their advice and co-operate with the screening tests which were advised to be conducted. These clinicians reported that their patients were eager to complete the patient questionnaires, etc. One respondent stated:

"I think if people are motivated to come for Foresight advice, then they're genuinely interested in giving their baby the best chance, and that's lovely; I think that's great. None of them are particularly fussed about filling in a lot of forms".

Another respondent commented on his patients willingness to change their diet when requested:

"Well, if their hair analysis comes back and they're low in this and that they're really quite keen to build themselves up".

Patients were not always referred from Foresight, some were the doctor's own patients.

"No, its just that they are already patients of mine, you know they may have been patients of mine for a couple of years. But they might say well, we're now thinking of having a baby. I might have already done a hair analysis and done a full work out on them, I can't then say, alright well we're going to put you through Foresight, we're going to have to do another hair analysis and do this and do that".

The clinicians commented that they mainly saw the females for pre-conception care, although the data collected for this study shows mainly couples attending.

One clinician reported at length about his problems of complying with the requirements of the research protocol. It is a useful illustration also, of the 'undercurrents' in the marital relationship which the clinicians have to be aware of.

"Well this is one of the things I find makes me feel uncomfortable about doing the Foresight work as it is at the moment. I'm seeing a man and a woman for an hour, whereas normally I see each person for three quarters of an hour, to make my full assessment of a person, and even then that's not enough. I'm forming part assessments. I think I get it probably right. I can usually sense, and it usually works out that one or the other is the dominant one. *It's usually the woman who really want to come along and get sorted out and hubby gets dragged along. He's for it, but he's not really that into it.* And very often, it's

the woman who's got problems. What is difficult is to sometimes work out what level those problems are on. Say she comes in, and she's got loads of allergies, funny hair analysis, odd nutrition or something like that. Fine, you can really get into that and sort it out but on the other hand, you can just look at what's going on between the husband and the wife and know that there are big problems, which he knows too. And that's where you've got to be experienced. And if you start involving that couple in loads and loads of tests, changes in diet and this and that, you're just going to make the problem ten times worse, because she's coming to you to try and relieve it! You see, ideally, what I would like to do is to see the husband for 45 minutes and the wife for 45 minutes separately".

Summarising the findings so far, it was clear that clinicians were not following a standard protocol for pre-conception care within their Foresight clinics. Seventeen of the respondents did not follow the protocol which had been developed specifically for the standardisation of their provisions for the research study! The pre-conception care services provided by the Foresight clinicians, were influenced by the knowledge base of the clinicians. The clinic protocols actually followed reflected their career backgrounds, research interests and the chosen medical alternative specialisms which they studied and practised. Clinicians who practiced cyto-toxic testing for the detection of food allergies, for example, stated that they used these techniques for their pre-conception patients also. Clinicians who incorporated test for allergies to various foods using behavioural kinesiology also used these techniques in pre-conception care. Some clinicians used a combination of complex homeopathy to combine herbal and homeopathic medicaments in order to remove toxins from the body of their patients attending for pre-conception care.

A variety of reasons were suggested in justification of the non-standardized procedures which respondents had adopted. The most common point made by the clinicians was the problem of costs incurred by the patients if all the tests in the standardized Foresight protocol were conducted. Clinicians felt that only the tests which were viewed as relevant and applicable to the patients' medical histories should be conducted. The costs of mineral supplementation were also recognised as potentially problematic. All of the respondents made the point that they always took a full medical

and dietary history from patients and it was against these details that further tests and investigations were conducted. Another comment frequently made was the fact that clinicians did not fully understand the relevance of some of the tests which were suggested on the clinic protocol. They thus expressed feelings of guilt for having to charge patients for tests which they considered were not fully evaluated.

#### 4 Clinicians' Comments on the Foresight Research Programme

This section contains further discussion of the clinicians' views concerning the research programme. The clinicians were asked to give their opinion of the questionnaire and the protocol, in addition, to identify some problems which they might have experienced. Also, this section contains the attitudes of clinicians on the Foresight organisation and its roles and function. Finally, an examination of the attitudes of the clinicians for the future developments of pre-conception care is presented.

##### (i) The Research

The respondents were asked to say what were the problems they had experienced with the collection of data for the research study. The two most frequently mentioned points as indicated above were the time taken and the costs involved. An underlying antagonism between co-operation with the study involving much form filling, and running a practice on business lines, was noted. Time was equated with either increased costs being incurred by the privately paying patients or loss of potential profits by the clinicians who would be spending a longer time in conducting consultations.

Clinicians commented that whilst they wanted to be involved in the research, a great deal of time was required. It was argued that this was difficult to be given and required much organisation. One respondent made the following statement:

"To do a research project you need the same amount of time again, with the patients, to complete the questionnaires and send things off. We're just not geared up to it. I mean you can see how busy I am. It's just purely a question of organisation, I haven't sat down and organised it so that I've got some way of reminding myself after such and such a visit I've got to fill a form in. And because I haven't done that, I haven't filled the form in, it's as simple as that".

Another clinician explained why he had not returned any questionnaires:

"To be honest I really haven't had the time to sit down and work it out, because really, I'm going to have to work out a plan of campaign to assess how much time is going to be involved from me in total".

Whilst however, the length of the patient questionnaire was a recognised problem some clinicians reported that they found it helpful and that their patients did not mind completing it. Some typical comments were as follows:

"The couples actually found it quite long, you have to be of average intelligence to see your way through it. I think generally they find it quite interesting to go through it, and quite beneficial".

Some clinicians commented that they already adopted their own questionnaires etc and thus were being required to duplicate their work in effect. A sole practitioner commented vehemently:

"My main problem is, I have already in my practice a set way of doing things, and I have my own questionnaire. They're filling up two questionnaires, unless I print a special one for myself for information which isn't on the Foresight one".

A major problem in the provision of pre-conception care was highlighted by many respondents. It was reported that often people attended for pre-conception care for nutrition advice and having received this at their first consultation they did not attend again for a 'follow-up'. Also, the clinicians tended not to "chase up" their patients and only a small amount of 'follow-up' data was received.

The small number of patients attending for pre-conception care was another fundamental problem. A typical comment was:

"I don't get very many requests for Foresight patients. I've dug out my Foresight cards and I've only had five couples within the last four years".

Clinicians identified the problem which existed concerning the lack of controls for the research programme. Some respondents commented also, on the problems of getting information which would be supported by the medical profession as scientific. A private practitioner stated:

"If you look into the whole field of research in natural medicine, you're facing the same old problems that a lot of people have faced, in that basically you're treating individuals not a diseased picture, so there is not standardisation. The idea of clinical trials that compare two groups with one difference, is not appropriate when you're dealing with people, because two groups never, ever just have one difference. They'll have multiple differences and your whole selection of the population and the whole selection of the sample from the population is going to be very distorted distribution, and it's going to be very hard to draw conclusions from it, and the conclusions which are drawn are going to be very easily shot down. I mean, if nothing more, we can learn about some of the difficulties that we face in doing a trial like this".

(ii) Clinicians Comments on Foresight

The open-ended interviews with the clinicians sometimes moved from a discussion of the pros and cons of the protocol to a discussion of the Foresight organisation and the Foresight "philosophy" itself. Though all the clinicians were associated to a greater or lesser extent with Foresight, the degree of commitment had been shown to vary. All of the respondents stated that they felt the Foresight organisation was a valuable contributor to the field of pre-conception care. However, some clinicians reported that they did not always agree totally with the philosophy of Foresight. These felt that more emphasis should be placed on Foresight's role of promoting pre-conception care and encouraging the general population to be aware of nutrition in pregnancy rather than pressing for detailed screening tests of target groups. These respondents thus envisaged a general educative role for Foresight, rather than the

very specific procedures which the organisation espoused. One clinician commented:

"I think it's a valuable organisation. I think it's got to be careful ... to be quite honest because if it's going to achieve what it wants to achieve, I think frankly we all want to achieve healthy babies and healthy mothers, it's either got to stick to its guns and be out on a limb pursuing its hair analysis sort of thing or, it's got to come within the mainstream of pre-conceptual thinking and act as a pressure group to publicise the effects of things like alcohol and so on. Well, they might argue somebody's got to be a pioneer in the field and if we just sort of ... follow rather than lead well then changes are going to take much longer to come about so I'm all in favour of studies like this.

As indicated above, some respondents felt that the Foresight organisation sometimes made claims which were difficult to prove. This was identified as a problem which would threaten the credibility of Foresight's work. As one respondent said:

"Some of the things about Foresight I find ... I don't disagree with but I find rather difficult to accept, Foresight say women who've got a coil should have the coil removed at least six months before trying to start a family because of the possible toxic level of copper. Apart from the Foresight evidence, I've not seen any evidence at all to support that in the contraceptive literature, certainly nothing that's put out by the Family Planning Association. I mean, who am I as a simple GP, do I believe Foresight or do I believe the Family Planning Association".

Respondents commented on Foresight's aims and objectives and their methods of achieving these. One clinician reported:

"I think that their aims are entirely correct and I support them. I have serious doubts about their methodology. For example, I did neutralisation therapy for two years and then effectively abandoned it because, having tried it out for myself, I really wasn't convinced that it worked".

(iii) The Future Development of Pre-conception care

Towards the end of the interviews clinicians were asked to give their opinion on how they believed a future pre-conception care service should be organised and to whom the service should be targeted. They were asked to comment on the suggestion that pre-conception care should not be targeted at a particular group but should be more of a health education programme for the general population. Respondents saw a



contradiction here. The two most frequently made points were that pre-conception care should be targeted to a responsive, motivated group who were preparing for conception, the second point was that there should be a more general provision made available to all. Some clinicians commented that it should be a mixture however and one respondent suggested the following:

"I think one's got to do both. I think one's got to have a general campaign on nutrition and so on and smoking and alcohol and also be picking up target groups; and I think the pregnant and pre-pregnant women are a very important target group. Because you see, if people aren't going to be motivated to change their lifestyle and they're planning a family, when are they going to do it?"

How should a service be provided? Some respondents commented that pre-conception care should be part of a general health education programme and not made into a specific clinic-based provision. One clinician commented on the importance of developing future pre-conception care education in the schools to try and prevent harmful habits starting.

Another said:

"You see, there's all sorts of problems with this project. When I was a GP I would see people and they would have, for instance bronchitis and I would say try and stop smoking, they'd say "yes doctor, yes doctor, we'll do this, we'll do that" and they didn't do anything. So, it's a problem in that you're trying to change peoples' habits and people don't like to change the habits of a lifetime. People coming along to these clinics, they don't want to stop the habits of a lifetime. I think you need to get at the ones who are at school".

One third of the respondents expressed their concern over the present situation where only the married, professional middle classes tended to be aware of and participating in pre-conception care. It was pointed out that the awareness of pre-conception care should be increased to other groups. With the respondents recognising the need "not to push too far" as discussed above, the clinicians tended to accept the proposition that individuals are constrained by their environment and that the Government and other statutory agencies should be involved in health promotion. One respondent running a NHS general practice reported:

"You see, strictly speaking that should already be done by the Health Education Council. I mean there is already the machinery set up for that so, in a way, I think, Foresight should pressurise other bodies like the DHSS and the Health Education Council but frankly, it should pressurise the DHSS to increase the budget of the Health Education Council, which survives on a shoe-string compared to the tobacco industry".

Some other comments were as follows:

"I'd like to see it as a much more broad-based thing, concentrating on the main sort of problem areas like smoking. I think one's going to get the most out of pre-conception care by improving things like Rubella immunisation and excluding anaemia during pregnancy and treating it vigorously".

"I think it's got to be part of a much wider movement than just pre-conceptual care. I don't think there's much point in having pre-conceptual care and having this lovely baby if you then go and feed it on unsuitable foods, from day one. Yet, I say that with tongue in cheek, actually. Whatever it's fed on afterwards if it gets a good start at the conceptual stage it's going to be better. That's true, but even so I think you've got to see it as a part of a general change in nutrition supported by the government.

Clinicians were sceptical of the idea that the future of pre-conception care lay with GPs. They discussed in particular the conservative attitudes of GPs with regards to changes in practice, especially as giving nutrition advice constituted a very small part of their medical training. In addition, the already high workload on GPs was recognised.

"You can set it up in General Practice but it's quite difficult. It's competing with setting up a diabetic clinic, setting up a hyper-tension clinic or setting up any other type of clinic".

Another clinician commented:

"I think that doing it on a one-to-one basis is a great luxury. No way would it be possible within the National Health Service, to be done on a one-to-one basis, because it takes an hour and a half, two hours ... Just to get through the chat and the information, and I think General Practitioners will certainly not be able to do it for a long time".

The small number of patients attending Foresight pre-conception care clinics has been indicated and two clinicians commenting on the demand for pre-conception care stated:

"I think perhaps that the message hasn't reached them, what more can you say, or if its' reached them they haven't been sold by it.

"Pre-conception care, the service, won't be provided unless there's a demand for it. I'm not getting a lot of patients specifically for that. I don't think there is a big demand".

Another respondent gave a lengthy comment concerning how he perceived pre-conception care would develop in the future:

"You know, the way things are going at the moment, there'll be some television programme about it, and about a couple of people who've had good results and all this medical literature will just go puff, out of the window, because it's basically about the people that we're treating, not about the doctors who are treating them. The medical science of tomorrow is being shaped by the public, not the doctors, because the doctors are just, by nature, very conservative and, in some ways, being pushed into medicine of tomorrow by their patients, and I feel that's a greater pressure than any amount of medical research which is being done".

## 5 Conclusion

It was clear from the interviews that the Foresight work contributed a tiny part of the workload of the clinicians and the term 'Foresight' clinician was perhaps a misnomer. The pre-conception care service which they provided was a reflection of their experience and interests. The clinicians involved in the provision of pre-conception care within the group examined, were mostly private practitioners, often practicing alternative medicine such as homeopathy, clinical ecology, applied kinesiology and acupuncture. Therefore, the pre-conception practices adopted incorporated various methods, depending upon the interests of the provider. The clinic protocol developed for the research study to standardise treatments and advice given by the Foresight clinicians was not closely followed. Clinicians chose tests which they considered relevant and financially viable and gave advice on that basis. Services differed therefore with the

individual clinician.

Clinicians commented that they were mostly new to the concept of pre-conception care (not surprising, because the field itself is new) and, whilst having an interest in nutrition, they did not have a wealth of knowledge on pre-conception care or the screening tests but were developing clinical expertise and were reading more! Many respondents expressed feelings of guilt at charging patients for their advice, especially for charging and conducting trace metal screening tests such as hair and sweat which had not yet been fully evaluated within the medical literature. When trace metal screening (hair analysis) was conducted, clinicians were sometimes placed in an awkward situation where they did not understand how to interpret the results. These clinicians often received advice from the founder of the Foresight organisation. Thus, this evidently illustrates a problem where one person's judgement is used by a number of clinicians for the determination of treatment and advice for example, for mineral and vitamin supplementation.

A number of problems were identified by the clinicians concerning their provision of a pre-conception service in terms of the large amount of time required for the history taking of both partners (something which all the clinicians stressed as most important) the costs of the treatment to the patients' (sometimes overcome by having routine tests carried out through the patients own GP). Costs were seen in terms of the clinicians also, in terms of the time spent seeing two patients "for the price of one".

Respondents commented on the future of pre-conception care and tended to believe that GPs and the primary health care team should provide general advice and pre-conception care counselling. A small number, however expressed doubts as to whether these individuals would have enough expertise. The clinicians were divided in their views on the role of the Foresight organisation. Some considered that the organisation should put across general health care information, whilst others believed that its stance concerning the advocacy of detailed vitamin and mineral screening tests

and physiological examinations and investigations was valid. Whilst some clinicians were doubtful about some of the ideas put across by Foresight, they all stated that Foresight had put a tremendous amount of work into the field to attract peoples' attention to the importance of looking after themselves prior to conception. Respondents felt that those presently receiving pre-conception care came from too narrow a social group - the middle classes, who were sufficiently motivated and mobile to attend their clinics. Like the DHEOs (discussed in Chapter Seven) the Foresight clinicians believed that advice and preparatory treatments should be available to all "anyone of fertile age is in a state of pre-conception care".

The interviews reported in this chapter should be assessed bearing in mind that the information collected represented attitudes of Foresight clinicians at the time the interviews were conducted. The interviews were a "snapshot" of the attitudes of the providers of care in a field which is developing rapidly.

The clinicians received a copy of the edited interview transcripts and were asked to confirm that the transcripts reflected their views fairly. On replying, some respondents commented that as their knowledge of pre-conception care had increased so, too, their attitudes had changed. One respondent wrote:

"Yes, the transcript is a true representation yet it seems already dated!"

The interviews were conducted to discover whether the Foresight clinicians were conducting pre-conception care along the lines which the Foresight Organisation advocated. The findings illustrated that a mis-match was occurring between the provisions of many of the clinicians and the Foresight organisations beliefs concerning their provisions.

The data collected on the group of people attending Foresight clinicians for advice and treatment prior to conception suggest they did so for a variety of reasons. They were mostly from the middle class professional groups and some of the women had a chequered obstetric, gynaecological and medical histories. However, some

attended for pre-conception care in order to receive advice for preparation for their first child without having suffered any obstetric or gynaecological problems. All those attending were described by clinicians as having an active interest in health and in particular nutrition. Thus, they were health conscious and were described as following healthy lifestyles with only a small number who smoke and drank. The group were described as a highly responsive group and as such the need was identified by clinicians not to demand too much, "not to push too far" for fears of the patients incurring great costs, eg. for vitamins and minerals. The danger was recognised by clinicians that expectations of those attending must not be raised beyond the abilities of the services to meet these expectations.

The effectiveness of the pre-conception care services provided by Foresight clinicians is distinctively difficult to evaluate. As has been indicated, the original aim of this research was to provide such an evaluation, but the number of patients has been small and the number of pregnancies even smaller (see Appendix Four). However this research has set up a data base which subsequent researchers will build upon. The field is still in its infancy, as Haddad has noted in her review of the provision for pre-conception care at the West London Hospital.

"It is early days in the development of pre-conception care ... it is impossible to evaluate such care in terms of lowering the incidence of complications during pregnancy and labour" (Haddad, 1986).

The next chapter examines in detail the pioneering service established at the West London Hospital.

## CHAPTER FIVE

### THE WEST LONDON HOSPITAL PRE-CONCEPTION SERVICE

This chapter describes the pre-conception service provided at the West London Hospital in Hammersmith. It was the first service to be provided within the National Health Service and was set up as a pilot study. It was decided to study the West London clinic in order to make comparisons with the pre-conception service provided by the Foresight clinicians, which operated mainly within the private sector. The detailed case study also provided a starting point with regard to the way future pre-conception care services might be established. Also, it served to highlight the problems of evaluation of such a service. The chapter is divided into three sections. The first examines briefly the reasons for conducting the study and its aims. The second section contains the research findings and the results of interviews with staff working at the clinic. The final section contains concluding comments on the service at the West London Hospital.

## 1 Research Aims

The West London pre-conception clinic was the first of its kind to be set up (in 1982) and it was felt that a detailed study would provide useful information on the practices and problems of such a clinic. Building on the information gained from the study of the Foresight clinics, it was decided to look in detail at a number of specific aspects related to the operation of this National Health Service clinic. Aspects of study included the factors which lead to its establishment, its organisation, attitudes of the staff, a preliminary study of the motivation of couples attending and the problem of evaluating the success or otherwise of providing such a service. The information gained would enable comparisons to be made between the practices and provisions, and the attitudes of doctors and staff, operating the Foresight clinics with those of this pre-conception clinic within the National Health Service.

Participant observation, and interviews were the main means of data collection as discussed in Chapter Two. A similar interview schedule to that used with the Foresight clinicians was used to facilitate comparison. Information was collected on the factors which contributed to the establishment of the West London service and its subsequent development. Additional data was obtained concerning the details of the staff backgrounds and in particular their interest in pre-conception care. Data was collected also on the recipients of the service, in order to carry out comparison with the recipients of the Foresight services.

## Research Findings

### (i) The Consultations

The pre-conception clinic was situated at the West London Hospital, Hammersmith and was attached to the ante-natal clinic; so making use of existing facilities. The clinic had an informal and relaxed atmosphere. The colour scheme of the clinic was cream and brown. In her description of the clinic Gillett has written:



"The choice of calm and natural colours for the clinic creates an atmosphere which is secure and without distraction and colours that subdue the necessary clinical equipment are an advantage". (1985)

There were six consultation rooms which were situated immediately behind the waiting room. Each had a desk carefully placed against a side wall so that the couples and the member of staff conducting the interview for the ante-natal clinic or the pre-conception clinic shared the same side in order to create an atmosphere of informality. The researcher "sat-in" as an observer on a number of pre-conception consultations with the midwife attached to the clinic and four of these are briefly described, in order to give some indication of the kinds of problems brought to the clinic and of the advice given by the staff.

#### First Consultation

The couple appeared to be apprehensive and nervous at the beginning of the consultation but they relaxed as it progressed. Following the formal introductions (the couple had not been seen previously by the midwife), the questionnaire (shown in Appendix A2.1) which the couple had been requested to complete prior to attendance was then discussed. Following this it seemed evident that the couple needed further investigation as regards possible infertility problems. They informed the midwifery sister that they had been practicing the rhythm method of birth control for a period of about fifteen years and had been trying to conceive for a period of twelve months. The only action that the clinic could take at this time was to give advice concerning the value of following a good diet and the importance of sound nutrition both before and during pregnancy. Following this counselling the consultant in charge conducted a full internal and external examination of the female. No such examination was carried out on the male.

### Second Consultation

The format of this consultation was similar to the previous one in that the completed questionnaire was checked and any problems or queries which had arisen were discussed. The women had experienced a number of miscarriages and had lost a baby at six months. She did however, have a four year old daughter. She had also experienced one termination of an unwanted pregnancy. The woman's partner was working so she had decided to attend the clinic by herself. Thus, information concerning her partner was obtained second hand. The discussion and counselling concerning improvements which she should make related primarily to diet and contraception methods. She was advised to eat less fried food and pre-packed convenience food and more fresh fruit and vegetables, steamed to preserve the vitamin and mineral content. The woman was also advised to change from using oral contraceptives to using a barrier method of contraception. A number of screening tests (see section below) were suggested and the woman was asked to give her permission for these to be conducted which she did.

### Third Consultation

Following introductions, the previously completed questionnaire was again checked and any questions arising out of it were answered. The couple seemed to be very anxious to 'get everything right' and had not been trying to conceive prior to the attendance. They were questioned on their dietary habits, medical histories and contraceptive use and advice was given concerning all these subjects. The consultant joined the couple to give a full physical internal and external medical examination but again only to the female.

#### Fourth Consultation

The woman was making a return visit to the clinic and had completed the questionnaire and discussed it during her previous visit. She was attending the pre-conception clinic because she had a low body weight problem and was anxious to receive counselling in an attempt to help her increase her body weight prior to conception. She had previously received a thorough medical examination and had been advised that her diet was good but that her body weight should be increased. The pre-pregnancy weight of the mother is a factor which has been identified as having a major influence on birth weight (Peckham and Christianson, 1971; Niswander and Jackson, 1974). Research has suggested that women underweight prior to conception are more likely to give birth to low birthweight infants despite adequate weight gain during pregnancy (Wynn and Wynn, 1981). The midwifery sister used the Quetelet index to confirm that the woman's body weight was too low. The Quetelet index is defined as  $(W/H^2)$ , where W is weight in kilograms and H is the height in metres measured in indoor clothes without shoes. Garrow (1981) suggests that an index of less than 20 represents a long term hazard to health. The midwifery sister counselled the woman at length on how she could improve food preparation.

#### General Observations

The above gives a "flavour" of the consultation work of the clinic. The format of the consultations was broadly similar in each case. The questionnaires which had been previously distributed by the clinic were examined and any questions arising were answered. The midwifery sister identified possible problems and gave advice where appropriate about diet, smoking, alcohol consumption, pregnancy spacing and contraception. The consultant reiterated some of this advice but mainly concentrated on the medical aspects, conducting a full medical examination but normally only of the woman. The consultations for those who were attending for the first time lasted

approximately one hour. The consultation for the woman who attended to receive counselling and advice on increasing her body weight lasted approximately thirty minutes.

The importance of a relaxed environment was evident in all of the interviews conducted. Both the midwife and consultant were very informal, contributing to an atmosphere in which individuals felt able to discuss their anxieties. In each consultation observed, individuals and partners received reassurance that they were doing the 'right thing' in attending the pre-conception clinic and that they should be congratulated for doing so. Positive aspects were stressed in all of the interviews in order to encourage those attending to take steps to prepare for pregnancy. Although various matters were discussed, diet seemed to be the most important aspect and received the greatest time allocation. All those who attended the clinic were counselled on the importance of eating a well balanced diet which was necessary to provide the essential carbohydrates, fats, proteins, minerals and vitamins. This was reinforced by giving the attendees a leaflet on diet based on the approach of Pickard (1983) referred to in Chapter One.

In view of the considerable amount of time allocated to each consultation, the number of people able to attend was limited. However, at no consultation did it appear that time was a major constraint, on the contrary, patients' questions were fully answered, their problems were investigated and assurances were given without regard to the time taken. One problem which became evident, however, was the fact that although couples returning to the clinic usually saw the same consultant as they had during a previous visit, they did not always see the same midwifery sister. This may have posed something of a problem in that both parties would have to introduce themselves and establish rapport.

(ii) The Establishment of the West London Pre-Conception Service

Having provided a "flavour" of the work of the clinic, the origin of this pioneering work will be discussed. The pre-conception clinic was established at the West London Hospital in Hammersmith in 1982. The initial impetus came from Sister Jane Gillett who was Sister in Charge of the ante-natal ward. She began to realise that ante-natal care largely ignored the first trimester of pregnancy and felt that there was a need to develop ante-natal care to take in these first very important three months when the foetus is developing rapidly. The Professor of Obstetrics and Gynaecology supported her views and took the ultimate decision to establish the clinic, allocating one clinic session per week to pre-conception care. It was recognised that there was a need to evaluate the usefulness or otherwise of pre-conception care and, with previous provisions being confined to the private sector, it was felt that a leading London teaching hospital had an important contribution to make in providing and evaluating such a service.

Once the idea of a pre-conception care service had been accepted, the work of putting the idea into practice became the task of the new clinical assistant, Dr Faith Haddad. The clinic's founders decided that the service would be provided on the basis of a 'well women' clinic, with self referral and open access. In the words of one of the clinic staff:

" ... We found it very important that we could get self referrals because there are a number of GPs who will not refer".

However whilst some people came through self referral, quite a large number of people were referred through the hospitals or through GP's. In order to encourage referrals, letters were written to the local family practitioners and to colleagues about the establishment of the pre-conception clinic. This resulted in an increase in referrals but couples were still seen without a doctor's referral letter and information about the clinic

seemed to spread through a "grapevine" of patients, health visitors, family planning clinic nurses and student midwives who had attended for instruction. The service was established without the involvement of any official working party or specific allocation of staff or funding. No formal training of involved staff was given. Instead, the pre-conception service was developed out of the initial interest and perseverance of a few individuals. Although Dr Haddad was ultimately responsible for the operation of the clinic, a key idea was that the midwives should be involved in the counselling.

The informal and rather ad hoc beginnings of the clinic were reflected in initial uncertainties of procedure. Some comments of staff concerning the initial development of the service were as follows:

" ... We floundered a bit at the beginning, we started up and then one or two people came for counselling and we had this rather blank sheet of paper to start our questionnaire on, and we used to ask all the questions and it took all day".

" ... We really took the basis of the booking interview, the booking clinic interview but made it more in depth in that we may have to do a wider range of investigations and we also may have to look back at the basic health of the people, and we may have to discuss some underlying cause of illness or of some cause of the previous bad obstetric history".

It quickly became apparent that it was necessary to reduce the time taken to complete the interviews, so a questionnaire was sent to couples for completion before they actually attended the clinic. When individuals requested a clinic appointment, they were sent the questionnaire to complete in addition to a number of leaflets developed by the Hammersmith and Fulham Health Education Unit, Food for Pregnancy, (1984) and by Dr Barbara Pickard, Be Fit and Healthy before you start a Baby, (1985).

The pre-conception service was provided initially by the ante-natal clinic staff. An informal training system was developed in order to gain assistance of members of staff in other parts of the hospital who expressed an interest in assisting with the provision of the clinic. Sister Jane Gillett was made responsible for 'in service' training

and accounts of her training methods were subsequently published (Gillett, 1984, 1986). Training concerned pre-conception care and food for health which concentrated on the importance of sound nutrition before as well as during pregnancy. Other aspects of training concerned interviewing techniques and the importance of creating the right environment in an attempt to encourage patients to be relaxed. Psycho-sexual problems were discussed quite openly. Clinic staff commented:

" ... Because of the confidential and excellence of the counselling, some of these people tell us their real problems".

" ... Nobody else, Foresight or any other of the people doing pre-conception care have indicated or mentioned the fact that they discuss aspects of psycho-sexual problems".

Because of the "unofficial" status of the clinic, all of the midwives working in it were full time employees of other departments in the hospital. They came to work at the pre-conception clinic only when they were able to leave their own specific work. Clearly this imposed very considerable constraints on the clinics work. Five to six midwives were trained to give pre-conception care and two were always available at any session.

The West London pre-conception clinic had been in operation for a period of eighteen months when this study was conducted. The clinic had in that time experienced some changes in its facilities and had to overcome a number of problems. As the clinic was established "unofficially" by a small group of interested individuals, little time had been available to plan fully the service and to identify objectives to be reached. At the time of this study the clinic appeared to be well established, with procedures which were followed as a matter of routine. The setting-up of routine procedures had been one of the initial objectives of Sister Gillett, consequently she had not taken an active role in the provision of the service, but had concentrated on the training of the staff providing the pre-conception advice. Due to the lack of funds and staff availability, the service was not as well founded as it might have been. Respondents expressed their reservations

when asked for their opinion about the limited service offered. One stated:

" ... I think we've gone right in a number of ways, and I think its very exciting that we've done the good work that we've done. However, I feel worried that we should be doing some analysis of vitamin and mineral status, especially the mineral levels".

A major problem which had effected the provision for pre-conception care at the West London Hospital was the fact that there had been quite a high turnover of participating staff. The reason for this was because, as has been indicated, staff were not detailed to do pre-conception care as their normal job, but were volunteers who filled in "as available". The major difficulty faced by the clinic was in fact its unofficial status. The service was described by one respondent as:

" ... a clinic that was founded more out of good faith than good funding".

Sometimes staff couldn't be spared from their normal work.

" ... We were hoping to train several midwives to do pre-conception care and we were hoping that may be they would come down from the wards, because there was quite a lot of interest to do this because it was a new service and because they were working at the West London Hospital, it was the first clinic to be set up ... but if they're working on the labour ward or somewhere like that and there's a caesarian section, pre-conception care doesn't get priority. The girl may have hoped to have come down to help with the pre-conception clinic and find that she has to scrub for a section ..."

The Regional Health Authority played no part in the provision of the service and it lacked formal recognition. As one respondent said:

" ... In actual fact, you don't have to brag about it (the clinic) too much because, under present policies, we're not allowed to start new work ... so its all a bit difficult".

(iii) Clinic Protocol

The clinic protocol was developed by the midwives who worked with the clinical assistant, Dr Haddad. Meetings were held at the initial stages of the development of the



service in an attempt to clarify clinic objectives and the advice to be given particularly concerning smoking, drinking and contraception. The clinic staff interviewed stressed that it was important to organise and gain a consensus of opinion on the advice which was to be given. They accepted that pre-conception care was a new subject and because it had not been evaluated, it was especially important that any tests which were advocated and the advice which was given should be based upon a sound scientific and medical foundation. For these reasons various tests such as hair trace metal analysis were not adopted by the clinic (such tests are of course, a central aspect of the Foresight pre-conception care philosophy). These matters are discussed in more detail in Chapter Nine. One respondent commented:

" ... I think that to give out advice on very firm medical grounds like anti-smoking and avoiding excessive alcohol is right.

... I feel that the value of hair analysis is as yet unproven. It may well be a valuable tool but if you're going to hand out advice on a test which is not recognised in this country as being evaluated then its going to be difficult".

The founders of the West London clinic decided that as the pre-conception clinic was also being provided as a research study to evaluate the usefulness of pre-conception care, certain tests would be conducted, such as the measurement of serum copper and serum zinc. The use of vitamin and mineral supplements was questioned however, because it was considered more important to try and improve individuals diet generally rather than by encouraging the use of specific supplements. Again, a difference of emphasis compared with the Foresight approach can be seen. One respondent commented:

" ... I'm the sort of doctor who prefers not to use an intervention unless there's good evidence that that intervention is required. My policy is always to try and improve diet rather than to give vitamin supplementation".

Another commented:

" ... As we hadn't got any sound information to support advising the vitamin and mineral supplementation we decided that it was better to stick to a basic diet, improvement being the best possible solution".

In setting up the service it was estimated that 45 minutes to an hour would be spent with each new referral, with 15 to 30 minutes spent during a follow-up visit. It was hoped that the interviews would be informal and relaxed and that couples would attend the clinic in order for problems to be discussed jointly. In addition, it was recognised that by observing the interactions between the couple this might be helpful in revealing less obvious problems. (This point is returned to in Chapter Nine).

As indicated earlier, couples were asked to complete a questionnaire, then they saw a midwife and a doctor who would mainly concentrate on the medical aspects, making appropriate referrals where necessary. The woman was offered a full medical and gynaecological examination and a number of tests were performed; various tests included a check of the women's blood group antibodies, rubella status, hepatitis and syphilis antibodies. A midstream sample of urine was taken for investigation of urinary tract infections, also a high vaginal swab and cervical smear was conducted. Haemoglobin, serum cyanocobalamin (B12), red cell and serum folate, serum iron and total iron binding capacity were measured and in addition, serum copper and zinc levels were tested. Special tests were offered to some patients such as those for toxoplasmosis, herpes and chlamydia for women who had suffered recurrent miscarriages. Hormone investigations and hysterosalpingograms were arranged when necessary and chromosomes were checked as part of genetic counselling (Haddad, 1985).

Although there existed a comprehensive array of tests which could have been conducted, many of the staff interviewed stressed the importance of not "pushing too far" in the advice given or tests conducted. It was felt that an appraisal of each case would enable the midwife to decide just how much advice the individual or the couple should be given. The respondents stressed the importance of being positive and

non-judgemental concerning the problems facing those attending the clinic. For example, a midwife who was attempting to evaluate and counsel a couple on their diet and to assess the ways in which they might improve the diet, if found to be deficient stated:

" ... What you've got to try and do is pick up the good points which that particular person has and build on these ... if you care for the person, you begin to build on any good that exists, and then you think how can I help that person to improve her state, and may be she's got all the disadvantages like eating a poor diet with white bread and she lives in a one room and her husband smokes and drinks and she takes the pill and her husband is unemployed, you know all these things add up to disadvantage".

The "supportive" nature of the West London clinic was emphasised. Staff stressed that the couples attending the clinic should be commended for doing so and given positive advice. Great importance was attached to the clinics provision of counselling. The staff interviewed felt strongly that the tests, although important, were not the sole or most valuable work of the clinic. Patients often wanted counselling and advice. One respondent said:

"If they've had a traumatic time last time, they will need to be reassured and to have got that off their chest before even conceiving, because that's one of the great barriers, to know how they may do better next time".

Another commented:

"They may just have been unlucky, and they just want to be able to discuss one or two aspects about their previous labour or whatever. They just want confirmation to say, this time it will be alright".

The staff interviewed were asked to comment on the work which they felt still needed to be done. Although (as has been previously suggested), they stressed that screening tests were provided only if they had already been previously evaluated as valuable, some felt the clinic should be providing tests such as hair metal analysis for trace element and heavy metal screening. One respondent commented on the existing

provision:

"... I feel very worried, especially when I know of the poor diet that many people eat, and perhaps coming from poor backgrounds, that they have some imbalance, and I feel that I don't want to be negligent and not correct it. Probably my feelings are based on my intuition rather than any facts".

Others however expressed concern over the existence of some of the medical screening tests used in the clinic. One respondent stated the following:

"... You know I don't think that these tests that we've done, interesting as they are, are applicable to most women.

" ... I think for the majority of women, basic counselling and a small number of obstetric tests are all you need".

These comments indicate clearly a considerable degree of uncertainty amongst the clinic staff. They were aware that they were pioneers, but this did not reduce their self-doubt or make their work any easier!

#### (iv) The Future of Pre-conception Care

The clinic staff were asked for their opinions on the future of pre-conception care, particularly the suggestion that a provision of a national pre-conception service should be made available to everyone. The respondents generally felt that a specialised hospital based service should only be made available for individuals who had a number of specific problems. There was a wide measure of agreement that pre-conception care should be provided by the primary health care team comprising health visitors and midwives, and conducted as part of their normal daily work. Some typical comments were:

" I see pre-conception care, the grass roots of it, being done by peripheral people in their normal day to day work".

" ... Family planning clinic nurses and doctors - you know where the women goes in because she wants to stop contraception because she's going to start a family - they'll just do half an hour of counselling on her. Only a small minority of women will then need to be referred to a centre for anything above and beyond that".

There was a consensus on the importance of a general service, available to everyone within the community:

" ... I would like to see more active pre-conception within the community which I feel as being very important in the field of obstetrics ... I hope really that the government trend is going to be to advance the services within the community in the long term future".

" ... I want to see it implemented within the normal working day of the community services, general practitioner services, family planning clinics, health clinics throughout the field in the community".

Not surprisingly, perhaps, there was thus general agreement amongst the clinic staff of the necessity of introducing pre-conception care. However, less surprising was the view that the provision should be in the form of a general service with primary health care workers providing advice and counselling as part of their everyday work. A special service (like that provided at the West London Hospital) was necessary only for a small proportion of people. In addition, the difficulty of patient access to a hospital based service (as opposed to the availability of pre-conception care via primary health care services) was noted, as was the practicality of introducing a pre-conception care service in the present financial climate.

A typical comment stressed the necessity of using the existing infrastructure of services. As one respondent said:

" ... The only way that the NHS is going to be able to afford it is by organising it like this ... that the majority are cared for within pre-existing clinics within the community and that the small minority can be seen at more specialised clinics therefore not necessarily involving any extra finances".

(v) The Patients

Turning to the recipients of pre-conception care, several respondents drew attention to the atypical nature of the patients at the West London clinic. These were predominantly middle class and caucasian. Some felt that the primary health care team should take a responsibility to encourage the take up of pre-conception services by people from a wider range of social backgrounds. Typical comments included:

" ... A lot of these couples need help, they know nothing about the importance of eating a balanced diet but unfortunately we are not getting the social classes IV and V who would really benefit.

... This is where the health visitors, and GP's out in the community could be doing something.

... Pre-conception care should be provided by the primary health care team and there should be a specialist clinic on hand for difficult cases".

The clinic staff were asked to comment on the backgrounds of the individuals who attended the pre-conception clinic. At the time the interviews were carried out the evaluation of the clinic by Dr Haddad had not been conducted and data concerning the background of patients was not available to the author. (Haddad's evaluation of the clinic was subsequently published (1985)). The majority of the recipients of the pre-conception clinic service were described by Haddad as being "white middle class" even though the catchment area of the hospital was not particularly of higher socio-economic status. One respondent commented:

" ... I think that the catchment area has been much wider than just Hammersmith in a way that's unfortunate ... there's quite a lot of women in our catchment area who are under-privileged and I think it would have been good if those women had come".

A number of factors were identified which had precipitated the patients' attendance at the clinic to receive pre-conception care. One of the most important was the

high proportion of recipients who had experienced a previous poor obstetric outcome.

There were two groups of women it seems, the ones who had experienced a previous birth tragedy and who had been referred to the clinic via their GP or through the hospital, and those just anxious and were looking for reassurance that everything was all right. The distinction between these two groups is important to make because it will affect the type of provision which will be most appropriate for the needs of the recipients. The use of elaborate screening tests will be more valuable for the former whilst the latter would perhaps benefit from general advice with most of the time allocated for counselling.

Haddad (1985) carried out a detailed study of patients attending the West London clinic and some of her main findings are presented below. This material is particularly useful because it enables a comparison to be made with the Foresight patients attending for pre-conception care (see discussion in Appendix Four). At the time of her study, 113 women had been seen in the clinic since it was established and 72 male partners. The average age of the women attending was 32 years (range 20 to 45 years). They were slightly older than Haddad expected, perhaps due to the catchment area of the West London Hospital. Many of the women attending were not having their first pregnancy, only twenty women were primigravida. The majority of the women were married and a few were cohabiting. The number of years of the partnership or marriage varied from a few months to 20 years; the mean duration of the partnership was five years.

The majority of the women attending the clinic were predominantly middle class. Table 5.1 below shows the breakdown:

Table 5.1 - Social Class of Women Patients

<u>Social Group</u>	<u>Number</u>
I	19
II	40
III	18
IV	1
V	3
Unemployed/housewives	32
	N = 113

Ninety-six were caucasian and 17 Asian and Afro-Caribbean women (all of whom were referred by doctors because of a bad obstetric history rather than by attending the clinic through self-referral). Thirty-five patients were referred by their family practitioner, and 32 were inter-hospital referrals who were mostly women with bad obstetric histories. Only 32 of the women referred themselves and 14 were referred by health visitors, family planning clinic nurses and midwives who had attended the clinic. The women were asked why they had come to the clinic and the reasons were given as follows:

Table 5.2 - Reasons for attending the pre-conception clinic

Bad obstetric history	63
Primigravida	20
Maternal age	14
Bad obstetric experience	11
Family history	7
Others	7*

\* A few women gave more than one reason.



The most common reason was thus clearly a bad obstetric history which may be expected, when one notes that many of the referrals were inter-hospital or from family practitioners. Some women had had a previous normal birth, but felt that the experience was traumatic and wished to discuss the possibility of a recurrence of the same problems.

The obstetric histories of the 113 women were varied. Twenty-four of the women were nulliparous and five women had had ectopic pregnancies of whom two had had no other pregnancy. Seventy women had a history of abortion, of whom 34 had no children and 56 women had had more than two abortions. There were 55 who had had 71 births, including eight perinatal deaths. Table 5.3 below shows the information on the perinatal deaths.

Table 5.3 - Perinatal Deaths

	<u>Deliveries</u>	<u>Deaths</u>
1st delivery	42	3
2nd delivery	10	3
3rd delivery	3	2
Total	55	8

Most of the women had received thorough investigation prior to attending the clinic due to these previous histories. Table 5.3 indicates a high rate of poor birth outcome.

Most of the women hoped to have a baby within three months of attending the clinic. Only six planned to delay pregnancy longer than a year, including two single women who were not in a stable relationship.

Table 5.4 below shows the methods of contraception which were used. Women were advised to use a barrier method of contraception.

#### Table 5.4 - Contraception Used

None	45
Sheath & pessaries	24
Cap & spermicidal jelly	23
Progesterone pill	9
Intra uterine device	4
Natural method	4

A considerable amount of data was gathered on the life style of the women (which is of great importance for health generally) especially on their smoking, alcohol and drug intake. There were 25 women who smoked at the time of attending the clinic and a further 17 were ex-smokers. Many of the women smokers had smoked for a considerable period of time; the average time being ten years. Eighteen women smoked more than ten cigarettes a day. One hundred of the 113 women said they drank alcohol, although most of these drank only wine; 26 drank more than two glasses a day and nine regularly drank more than three glasses a day. These quantities were regarded as quite high and women were recommended to reduce these levels. Fifty women took various medicines, some drugs were prescribed by a doctor but others were self-prescribed, which included vitamin supplements. Most of the women were described by the consultant as being 'fit and healthy' although many had gynaecological problems as Table 5.5 below shows.

#### Table 5.5 - Gynaecological Complaints

Premenstrual tension	77
Painful periods	64
Intermenstrual bleeding	11
Postcoital bleeding	4
Problems during intercourse	4

The consultant conducted physical examinations of the women patients. The majority of women were described as being 'normal' on examination. The womens

height and weight was checked. The mean height was 1.63 metres (range 1.49-1.80m) and the mean weight was 60 kg (range 45 to 103 kg). There were 26 women who had a Quetelet index of under 20. (These would be seen as "at risk", (Garrow, 1981)). Fifty-one women were happy with their body weight but 62 were not; and the majority of these felt that they were too heavy. These findings are similar to those of Pickard's findings in her study concerning the relationship between pre-conception diet and nausea and vomiting in early pregnancy (Pickard, 1982). As discussed in Chapter One, pre-pregnancy maternal weight is an excellent indication of subsequent birth weight.

The main results of the tests may be summarised as follows: there were 20 women who were rhesus negative but none of these had antibodies. Eight women did not have antibodies to rubella infection and these were subsequently offered immunisation. Of the three women who had a positive test for syphilis, two had false positive results and one was referred for treatment. Two women had a hepatitis infection, three had urinary tract infections and two had vaginal infections. Two of the women had cervical smears which showed mild dyskaryotic changes.

Test	Mean value	Range	Normal range
Haemoglobin	13g/dl	9-16	11.5-16.5
Cyanocobalamin (B12)	344 ug/l	68-900	150-1000
Serum folate	5.6 ug/l	1.5-14	2.0-14
Red cell folate	324 ug/l	116-564	120-600
Serum iron	19.7 umol/l	5-53	14-29
Total iron binding	63.3 umol/l	10-70	45-72
Serum zinc	11 umol/l	7-18	11-18

Seven of the women had a low haemoglobin level, 6 had a low cyanocobalamin level. There were 8 women with a low serum folate level and 4 women had a low red cell folate level. Nine of the women had a low serum iron level.

A record of the advice which was given to each of the women was kept. Table 5.6 below shows the nature of the advice:

Table 5.6 - Advice Given

	<u>Number in receipt of advice</u>
Medical advice	42
Anti-smoking	21
Drinking	23
Contraception	53
Drug avoidance	23
Dietary advice	86
Exercise	43
Genetic referral	30
Psychological	31
Sexual	31

As has already been indicated the advice was given in a "supportive" way, clinic staff were very aware of the dangers of asking too much from the individuals. It was stressed at the clinic that the advice should offer encouragement, with reachable targets being set. These research findings are compared to those for the Foresight patients and are discussed in Chapter Nine and also in Appendix Four.

Turning now to the male partners, Haddad reports data on 72 men who came to the clinic. Their social status was similar to that of the women. In 41 cases the partner did not attend, for various reasons, (eg. shift work), although it was recognised that it was valuable to be able to advise and observe the couple together. There were 37 smokers of whom 28 were smoking more than ten cigarettes a day. The majority of the men drank alcohol and 19 regularly drank the equivalent of more than two glasses of wine per day. The maximum was one man who drank seven glasses per day.

It was suggested to the researcher by the clinic staff that the advice which was given to the male partners tended to be more conservative than that given to the female partners. Perhaps a reason for this might be that it is not wished to alienate the male

partners from accepting the comparatively new idea of pre-conception care.

### 3 Conclusion

At the time of this study the future of the pre-conception service at the West London Hospital was in the balance. This led to various problems of insecurity, apprehension and unease amongst the staff. It was certain that the West London Hospital was to be closed but the fate of the pre-conception care service and the Obstetrics and Gynaecology Department was unknown.

The consultant in charge of the clinic suggested that the decision to continue the pre-conception care service would depend upon its formal evaluation which had yet to be conducted. As has been indicated the clinic was developed initially as an "unofficial" pilot research study for a period of two years and this period had just ended at the time of this study. A full assessment of the service needed to be carried out as a matter of urgency. However at the time it was unclear as to what form and with what criteria the evaluation would be made. The consultant stated:

" ... One feels that one's doing a good job otherwise one wouldn't obviously do it but feeling your doing a good job and knowing you're doing a good job are two very different things".

Another respondent stated:

" ... Until you look at the results and you see what you have achieved - its difficult. I'm talking about whether the women have actually changed their habits in response to your advice or whether they have received any reassurance from coming to the clinic or whether you have actually created more anxieties by your advice ..."

The criteria adopted for the evaluation of the pre-conception clinic was not discussed with the author. One of the reasons for the establishment of the West London pre-conception clinic had been to assess the usefulness of pre-conception care. Thus it was critically important to determine the criteria to judge the success or failure of the

clinic. A woman might be described as having a successful obstetric outcome if she produced a healthy baby, yet the experience might be described as unsuccessful if it caused her emotional stress and was a traumatic experience if she had a long labour or if she had to receive a great amount of medical assistance in the form of epidural anaesthesia or an episiotomy, a forceps delivery or pethadine or oxytocin.

A review of the case histories of patients attending the West London pre-conception care clinic was conducted by Haddad, (1986). This study built on her analysis of the patients referred to earlier. Her findings show that most of the women had planned to have a baby within three months of attending the clinic. Only six women had planned to delay pregnancy for longer than a year and two of these were single women who were not in a stable relationship. However, of these 107 women who had planned to have a baby within three months of attending the clinic, 33 women had not managed to become pregnant in two years following their initial visit to the clinic. Eleven women decided against pregnancy. In two cases their marriage had broken down and in one case the husband had died. Six women decided to delay pregnancy and of these, two were not in a stable relationship, (one woman had started a degree course instead!) and one woman was diagnosed as having endometriosis. Sixteen women were still trying to conceive and seven had been referred to an infertility clinic. Sixty two women became pregnant, nine of these suffered an early pregnancy loss therefore 53 had remained pregnant and of these only 17 had not been delivered in September 1985. Of the 27 who had been delivered, 21 of these experienced some ante-natal complications. Four women were diagnosed as anaemic, three suffered antepartum haemorrhage (one breach; one fibroid, one caesarean section). Five women had breach births, all delivered by caesarean section, three of which were emergency and two elected. For one of the women a cervical suture was inserted and then removed followed by a normal vaginal delivery. Three women had multiple pregnancies (two of the women had twins and one had triplets).

There were thus considerable interventions during pregnancy perhaps indicative of the high proportion of women who had previously exhibited a bad obstetric history and a high number of inter-hospital referrals. Six of the pregnancies were induced, eight women received oxytocin to stimulate contraction of the uterus, three received pethadine to relieve pain and fourteen received epidural analgesia. Eight women received emergency caesareans and one had a forceps delivery. Therefore over 30% of the women received a caesarean section. Many women experienced abnormal deliveries. From 36 women there were 40 live births and one neonatal death. From the initial sample of women attending for pre-conception care there was a history of eight neonatal deaths.

The results mentioned above reflect the couples' past histories and it is therefore difficult to determine how valuable the pre-conception care and advice has been with regard to the pregnancy outcome. It is important to determine the criteria by which 'successfulness' may be measured. For example, it is more difficult to measure the psychological effects of receiving the advice and reassurance than in measuring the medical interventions and tests which were conducted.

A number of women did in fact suffer poor obstetric outcomes but possibly this was an indication that it was very necessary for these individuals to have been referred to the clinic in the first place. In addition, most of them had suffered previous problems it seems very likely that these were repeated. The high rate of medical interventions could not be taken as failure on the part of the West London clinic who were, after all, dealing with a very non-random population. The comprehensive screening tests which the women received highlighted many different problems which suggest that there could be a need for this type of "screening for health" for the general population.

There are therefore, a number of factors requiring consideration in the interpretation of the results and in the analysis of the effectiveness of treatments received. These include the fact that the sample was small with only 113 women and 72 male

partners receiving pre-conception advice at the time of Haddad's assessment. As previously discussed, the large majority of the sample were pre-selected to attend the clinic either by self-referral or by hospital referral. It was therefore impossible to determine whether or not the provision for pre-conception care had had a positive effect upon those attending the clinic and their pregnancy outcomes. The patients were not themselves interviewed or consulted about their perceptions of the pre-conception care advice which they had received. Haddad's study is therefore one-sided, patients' views would have added breadth to her study.

It is not possible to base a consideration of the effectiveness and value of pre-conception care upon results derived from the limited sample of people who attended the West London hospital. However, the study of this clinic was a valuable exercise in that it served as a point of comparison for others operating pre-conception care services. The clinic should not be criticised for the lack of scientific rigor, due to the fact that the service did not receive any assistance in the form of finance and staff allocation necessary to support a more comprehensive treatment and training programme. The service had limited resources which precluded the use of an extensive advertising programme which would have reached a wider section of the population and therefore given a larger and more representative sample on which to base conclusions and evaluations.

Unfortunately the clinic no longer exists; in March 1986 a decision was taken to close the West London pre-conception clinic a number of reasons contributed to this decision. The Head of the Obstetric and Gynaecology Department, Professor Norman Morris, who had been very supportive about the introduction of the pre-conception service, retired. In addition, the Consultant in charge also left the Hospital. A new consultant was appointed who held different research interests. Thus the service was closed. It is not known precisely which criteria was used on which to base the decision to close the clinic. The success or failure of the clinic was due perhaps to the prevailing



circumstances with the change of key personnel having a large part to play in the evaluation of the service itself.

In conclusion, this researcher's view is that the West London case study provided a valuable insight into the problems of operating a pre-conception clinic within the confines of the National Health Service. It also offered a useful comparison with the Foresight clinics operating predominantly within the private sector. The study conducted shows one approach to pre-conception care and provides a "snapshot in time" of the views held by the individuals in this. The quotations presented illustrate the views of those providing the clinics and must be read in this context, the providers views no doubt changed during the clinics operation with their increased awareness.

How far the West London clinic could be used as a model for a future NHS pre-conception clinic is debatable. The clinic was established informally within the NHS by a few interested individuals and, as such, it was not the result of a formal planning process with clearly defined objectives to follow targets to achieve and with systematic evaluation at regular intervals. It may be questioned how far a future service planned by administrators would be similar to one planned by midwives and consultants as the West London service had been.

The examination of the provisions of pre-conception care available at the West London and at the Foresight clinics highlighted the complexity of pre-conception care and provided the researcher with very useful information. The value of the comparisons which are seen in Chapter Nine, must be considered in the light of the constraints involved in conducting all comparative analyses. However, it is hoped that insights have been achieved into the 'state of the art' of existing provisions of pre-conception care.

## CHAPTER SIX

### THE NATIONAL HEALTH SERVICE AND PRE-CONCEPTION CARE

This chapter introduces some of the factors which have affected the development of the National Health Service since 1948 and which seem to have influenced its subsequent re-organisation. Literature which describes the various theoretical perspectives which seek to explain the overall pattern of health service provision is discussed. The chapter thus offers a brief overview of some of the issues affecting health service provision as a backcloth to the consideration of the possibilities of introducing a pre-conception care service within the National Health Service.

## 1 Overview

There exists a plethora of literature on health services and the politics of health care. Descriptive accounts of the evolution of the welfare state in Britain are provided by Bruce (1968), and Fraser (1973). A study which examines more specifically the history of the medical profession and health services is provided by Abel-Smith (1964). Eckstein (1958) provides material on the period before and immediately after the creation of the National Health Service. More recently Levitt (1979) describes the re-organised structure of the NHS introduced in 1974.

Few authors have attempted to explain how policies develop and who influences what is decided. References which are analytical in focus tend to be partial rather than comprehensive, typically using the case study method. They may examine one piece of social legislation - the National Health Service Act of 1946 (Willcocks, 1967), or a single level of policy-making (Ham, 1981) rather than considering health policy as a whole. Descriptive work contains much useful information on which to build an analytical approach, and case studies frequently include valuable insights into specific aspects of health policy. However, there is a need to analyse the overall pattern of health service provision.

In recent years much of the literature has concerned itself with the implementation of health policy and the processes of policy making at the local level. Brown (1975, 1977) discusses in general terms the relationship between the DHSS and the health authorities, while Haywood and Alasgewski (1980) analyse the extent to which the NHS Planning System has been an effective vehicle for the implementation of central policies.

Political science and policy analysis have furnished a number of concepts which have proved valuable in examining decision-making, power and control in an explanation of the politics of health care. In addition, economics and sociology have made a major contribution in the making sense of questions of resource allocation and

equity on the one hand, and concepts of health and illness on the other. Many writers concentrated on the detailed process of decision-making in health care organisations and have directed their attention to the role of the state and its implications for health services. Ham has argued however,

"Very rarely are the two levels of analysis combined ... there is a need to relate micro theories of the policy process to macro theories of the state", (1985)

Consideration of the causes and effects of the distribution of health care services are important when one is reflecting upon the factors relating to the future development of a pre-conception care service. The NHS comprises a large number of different groups competing for resources. Many decisions are as a result of the bargaining process between the various groups. Discussion of the literature which attempts to theorise and offer explanation of the existing distribution of health care services is useful in the consideration of the influences and pressure which groups or individuals may have upon the development of pre-conception care services.

Escalating health care costs constitute an international problem which, it is suggested by Ham (1985), the NHS has been relatively successful in tackling. There are several reasons for this success which Abel Smith, (1981) identifies as the strict budget limits imposed on the NHS by central government, the dependence on tax revenue as the main source of funds, and the existence of a system of regional planning with major hospital building schemes being subject to central approval. However, there are many implications of restraining health care resources by budgets rather than by markets. Many questions can be asked such as: within the budgetary limits imposed by government, how are priorities arrived at and resources allocated? What is the balance between central control of health services and local authority? Finally, does the removal of the price barrier to health services lead to equity in the use

of services and the allocation of funds? These questions are pertinent when considering the possible establishment of a pre-conception care service.

The decision to establish a pre-conception care service within the NHS will be dependent on factors concerning resource allocation, priority determination and the mechanism involved in the transition of national priorities into local action. The pressure to provide a pre-conception service could be exerted from central or local sources and this will affect the speed at which the service would be organised and funded and the importance given to the provision. This is demonstrated in the chapter concerning the establishment (and eventual demise) of the pre-conception service at the West London Hospital (Chapter Five). Without the recognition of the value of such a service from the health authority, and bearing in mind scarce resources, the establishment and continuation of the service will be adversely affected. Without a clear policy existing on the provision of a pre-conception care service it is suggested that the service is doomed even before it starts.

Moves to examine alternative methods of financing health services in the United Kingdom and the encouragement of the development of the private health care sector has been a recent phenomena following the Conservative's election to power in 1979. The debate concerning the public-private mix for health will clearly effect the decision to provide a future pre-conception service within the National Health Service. At present, the service is almost entirely provided by clinicians in private practice. Private insurance schemes have a limited value as far as a general pre-conception care programme is concerned. Those seen as 'high risk' by the insurance companies would need to pay big premiums for insurance. Women might be 'assessed' by considering criteria based on their social habits and occupations with risk assessments made similar to those made at present for the assessment of motor car insurance premiums. This would scarcely represent a national pre-conception care service. As a very new area of medicine pre-conception care represents only one of a number of new

demands on a National Health Service, where it is clear, demand will always run ahead of provision.

The Royal Commission on the National Health Service (1979) commented on this undoubted fact:

"The demand for health care is always likely to outstrip supply and ... the capacity of health services to absorb resources is almost unlimited. Choices have therefore to be made about the use of available funds and priorities have to be set". (1979, p 51)

How are these choices made? The main sources of information concerning resource allocation and priority setting are found in the policy documents issued by the DHSS. In the main, the documents refer to particular aspects of health services, but recent general statements can be found in the consultative documents on Priorities for Health and Personal Social Services (DHSS, 1976b), The Way Forward (DHSS, 1977b), Care in Action (DHSS, 1981c) and Health Care and its Costs (DHSS, 1983a) and The Health Service in England (DHSS, 1984). A summary and review of health service policies was provided by the Royal Commission report referred to above and one of the research studies commissioned by the Royal Commission resulted in the publication of a critical overview of health service planning, priority setting and financing (Bevan et al, 1980).

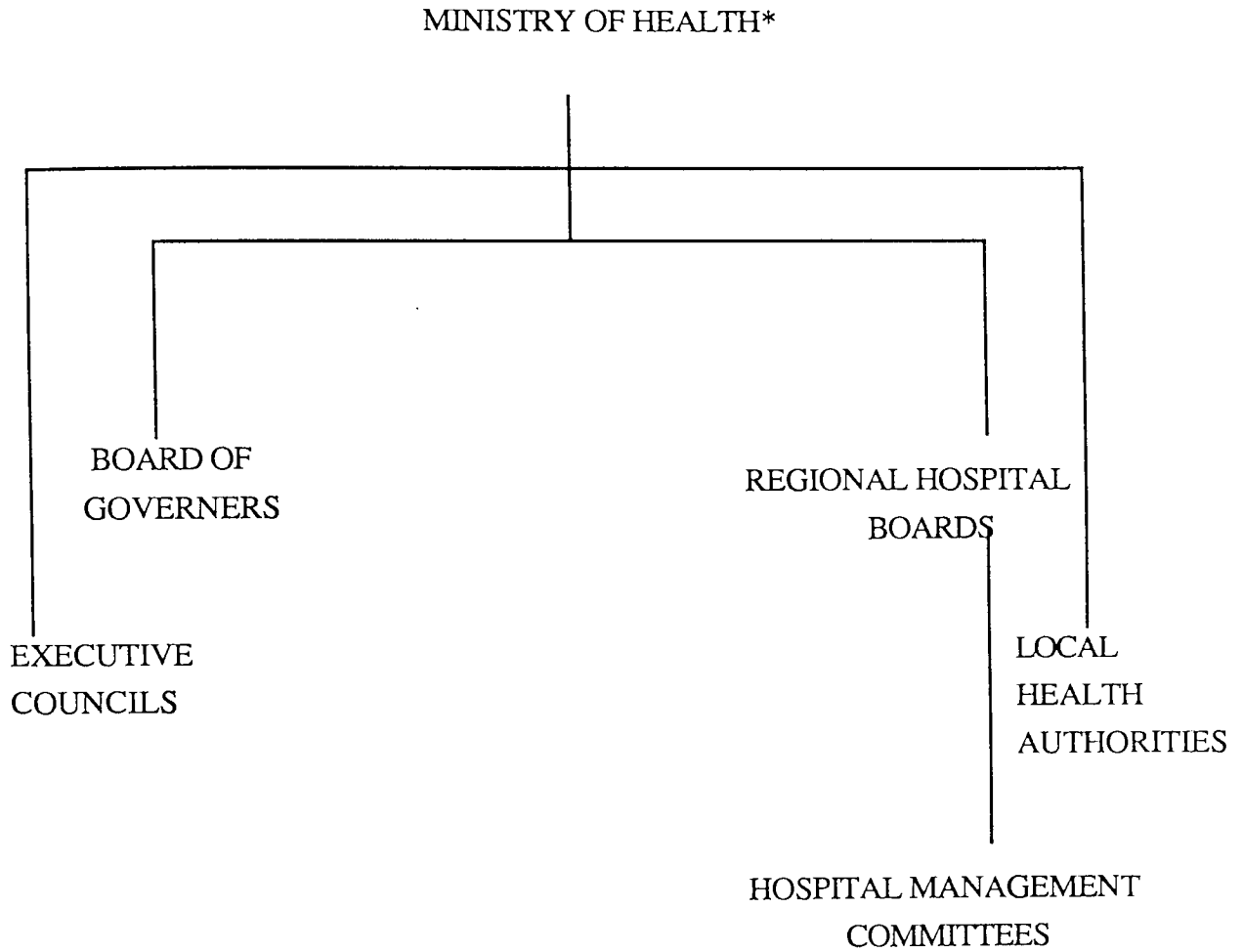
It is useful to examine in more detail some of the relevant literature concerning the process of resource allocation and the identification of priorities and the possible effects upon the future provision of a pre-conception care service. However first it is of benefit to consider the historical development of the National Health Service and the factors affecting its subsequent re-organisation.

## 2 The Structure of the NHS

The National Health Service came into being on 5 July 1948 with the aim of providing a comprehensive range of health services to all in need. The administrative structure was the product of the bargaining and negotiation which had taken place in

the health policy community in the preceding years. The name of Aneurin Bevan is usually associated with the founding of the NHS. However as has been observed by Willcocks (1967) that he was 'less of an innovator than often credited: he was at the end of a series of earlier plans. He 'created' the National Health Service but his debts to what went before were enormous' (1967, p104). The structure was shaped by its historical antecedents with the result that the Service was organised into three parts. First, the general practitioners service, along with the services of dentists, opticians and pharmacists. These services were administered by the executive councils which although not management bodies, administered the contracts of family practitioners, maintained lists of local practitioners and handled complaints by patients. Second, responsibility for a range of environmental and personal health services was vested in local authorities. These services included maternity and child welfare clinics, health visitors, midwives, health education, vaccination and immunisation, and ambulances. The key local officer continued to be the 'medical officer of health' whose origins could be traced back to the mid 19th Century. The funding of the services was provided partly by central government grants and partly by local rates. Third, hospitals were administered by completely new bodies - Regional Hospital Boards (RHB's), Hospital Management Committees (HMC's), and boards of governors. Finance for the hospital service was passed down from the Ministry of Health through RHB's and onto HMC's. This tripartite structure of the NHS in the first phase of its existence is illustrated in Figure 6.1.

Figure 6.1 The Structure of the NHS 1948-1974



\* Superseded by the Department of Health and Social Security in 1968



(i) The NHS Between 1948 and 1974

The assumption which lay behind the NHS and which was derived from the Report on Social Insurance and Allied Services (Beveridge Report, DHSS, 1942) was that there was a fixed quantity of illness in the community which the introduction of a health service, free at the point of consumption, would gradually reduce. It was therefore a misconception held that expenditure would soon level off and even decline as people became "more healthy". Developing concern at the cost of the service was reflected in the appointment of the Guillebaud Committee of Enquiry in 1956 (DHSS, 1956).

It was reported that as a proportion of the gross national product, the cost of the service had actually fallen from 3.75% in 1949-50 to 3.25% in 1953-54. The Committee recommended the allocation of increased funding to be made to the NHS to cover the backlog of capital building works needing to be undertaken. The 1962 Hospital Plan provided for an expenditure of £500 million in England and Wales in the ten years up to 1971 with the District General Hospital being cited as a key concept behind the plan (Ham, 1985).

The third branch of the health service, that provided by local authorities, developed slowly after 1948. Care of mothers and young children, home helps and home nurses were the major items in the local authority health budget in addition to the ambulance service which constituted the major expenditure.

The Ministry of Health published a document in 1963, Health and Welfare: The Development of Community Care, setting out proposals for the development of local authority health and welfare services. Four main client groups were identified as needing care, these were: mothers and young children, the elderly, the physically handicapped and the mentally ill and handicapped. The commitment in central government to the community care policy was not always shared at the local level. Indeed in a policy document published in 1975 the government stated that:

'By and large the non-hospital community resources are still minimum ... The failure to develop anything approaching adequate social services in perhaps the greatest disappointment of the last 15 years (DHSS, 1975a, p 14).

A further set of ten year plans for local authority services was prepared in 1972. The plans covered the newly established local authority social services departments, which were created in 1971 following the report of the Seebohm Committee (1971). The main effect of the reforms was to divorce those local authority health services deemed to involve mainly medical skills such as vaccination and immunisation from services involving social work skills such as home helps and residential care. The former were retained by the health authorities under the control of the Medical Officer of Health, while the latter were transferred to the new social services departments under the Director of Social Services. Thus, the main aims of the reforms were to integrate services which had been administered separately in the past, and to provide for the development of a comprehensive family service through the new social services departments.

The Health and Welfare Plans demonstrated the commitment of the central and local authorities to the building of health centres. Local interest in the 1960's was matched by central government attaching greater priority to health centre building. Whereas in 1965 in England and Wales there were a mere 28 health centres from which 215 GPs worked, by 1983 there were 1190 in operation, with 6,659 GPs. During this same period there was an increased emphasis placed on the primary health care team. The Gillie Report on the Field of Work of the Family Doctor published in 1963 argued for a closer integration between GPs and other health services, particularly hospitals.

A number of problems became apparent in the 1960's concerning the provision of health services. Despite the wishes of the central government that

hospital authorities, local authorities and executive councils should plan and work together, there existed a problem of lack of integration of services. Secondly, there existed a poor quality of care for particular patient groups especially for the mentally handicapped and the elderly. The third problem which was identified, concerned the system of administrative control in the NHS. Namely, central government was experiencing difficulties in achieving and implementing policies at the local level. Bodies that were responsible locally for the administration of services had their own aims and objectives and were responsible for providing services where professional involvement was strong. Doctors constitute the key professional group in the NHS and have considerable influence upon the way in which central policies are interpreted and implemented at a local level. The reorganisation of 1974 was an attempt to overcome these problems.

(ii) The Reorganisation of the NHS, 1974

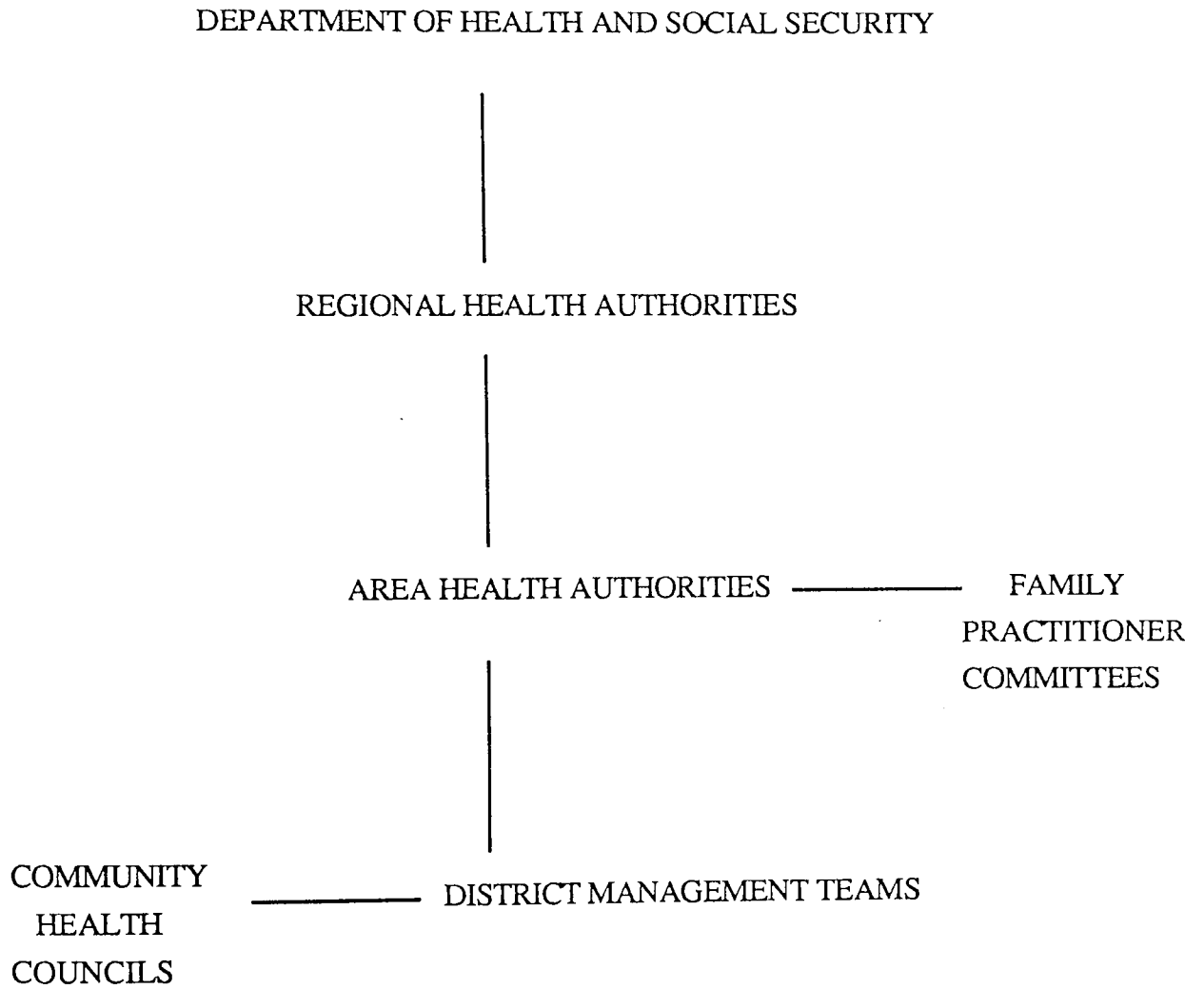
The Porritt Committee, published a report in 1962 (DHSS, 1962) which suggested that health services should be unified and placed under the control of area boards and the Labour Government Green Paper of 1968 echoed the Porritt Committee's suggestion and sought comments on its proposal that 40 to 50 area health boards should be responsible for administering health services in England and Wales. A possibility that the reorganised NHS would be administered by local government, itself undergoing reform, was discontinued in the second Green Paper published by the Labour government in 1970. These proposals were developed further in the following year by the Conservative Government in the consultative document which strengthened the role of the regional tier of administration and provided a separate channel for local participation in the form of community health councils. The 1973 National Health Service Act came into operation on 1 April 1974.

The reorganised structure in England is illustrated in Figure 6.2. Reorganisation had three main aims. The unification of health services, improvement in the co-ordination between health authorities and related local government services and 'better management'.

In the context of pre-conception care, it is useful briefly to examine female and child health care in the NHS. The changes in the structure of the NHS in 1974 were particularly significant for the maternity services since they had been identified in the 1950's as suffering particularly from the tripartite system of organisation in the Ministry of Health Report of the Committee of Enquiry into the Cost of the NHS (1956). Previously, individual women could receive services during the course of pregnancy, birth and early infant care from all three branches of the health services; GPs, hospitals and local authorities. This produced difficulties in terms of communication between professionals, continuity of care and perhaps, most significantly, the identification of who was responsible for deciding what type of care a woman should receive. This problem was evident from the Ministry of Health Reports on maternal deaths (1957-1960) which noted a number of cases where women were not allocated to the most appropriate pattern of care; and blame could be apportioned between several health professionals.

Following 1974 re-organisation the local authority responsibility for domiciliary mid-wives and ante-natal and post-natal clinics passed to the Area Health Authorities. Midwives were therefore integrated into a single service operating from a hospital base, whether providing hospital, clinic or domiciliary care. The GPs were not of course integrated and therefore the dominant pattern which still exists is that of 'shared care', albeit shared between two rather than three sources.

Figure 6.2 The Structure of the NHS 1974-82



(iii) The 1982 NHS Re-organisation

Worries about the organisation of the NHS continued. In 1979 the Merrison Royal Commission was established.

'To consider in the interests both of the patient and those who work in the National Health Service the best use and management of the financial and manpower resources of the National Health Service' (Merrison, 1979).

The Commission's findings endorsed the view that there was one tier of administration too many, and recommended that there should be only one level of authority beneath the region. The consultative document Patients First published in 1979, contained the response of the Conservative Government. It proposed to remove one tier of administration and suggested that District Health Authorities (DHAs) should be established to combine the function of the existing areas and districts (DHSS, 1979). The DHA's came into operation on 1 April 1982, and within districts emphasis was placed on the delegation of power to units of management. These units varied from covering services in districts as a whole, such as psychiatric services to a management unit of a single large hospital. The re-organisation separated the functioning of General Practitioners and the Family Practitioner Committees (FPC's) were separated from the mainstream of NHS administration and given the status of employing authorities in their own right. This change was brought into effect by the Health and Social Security Act 1984 and FPC's achieved their independent status on 1 April 1985. Figure 6.3 shows the structure of the NHS since 1982.

(iv) The Griffiths Inquiry into NHS Management

Following the 1982 re-organisation in England the Griffiths enquiry (1982) was set up to examine the effective use of management and related resources in the NHS. The main thrust of the critique offered in the Griffiths Report (DHSS, 1983b) was that the NHS lacked a clearly defined general management function

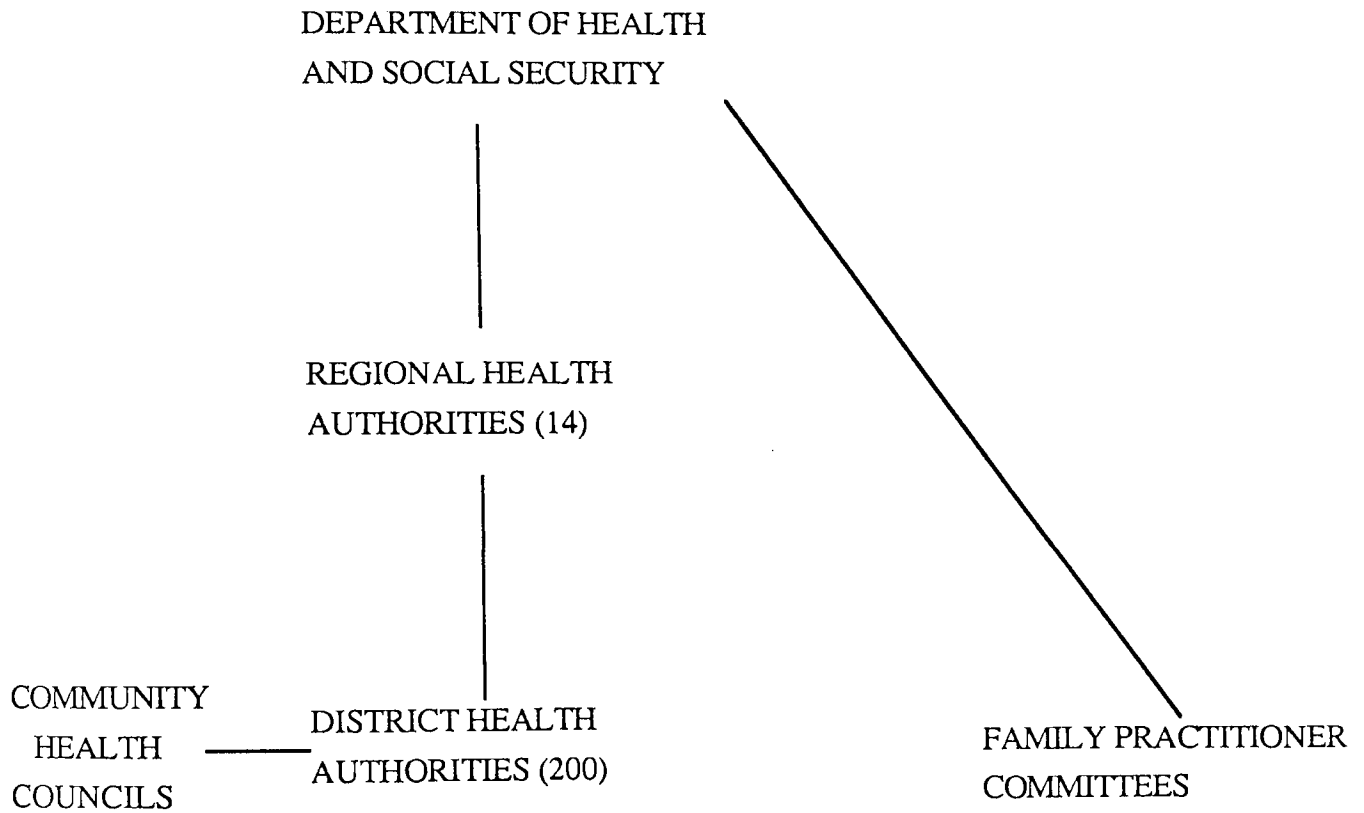
"Absence of this general management support means that there is no driving force seeking and accepting direct and personal responsibility for developing management plans, securing their implementation and monitoring actual achievement. It means that the process of delegation of responsibility, including discharging responsibility to the Units, is far too slow". (1983b, p12).

The enquiry reflected the central government's desire to seek cost savings and, to strengthen control by means of General Managers appointed by Government. The Report is seen as a direct statement by the government that whilst accepting clinical freedom for the medical profession, they must be made accountable. The Report stated:

"Doctors must accept the management responsibility which goes with clinical freedom and should be closely involved in management", 1983b, (p 18)

The re-organisation's of the structure of the NHS in 1974 and again in 1982 resulted from the desire to provide a co-ordinated and integrated service; to achieve the effective use of resources and the equity of service provision and to allow increased central control over the local implementation of national policies. These re-organisations have affected the delivery of services due to the upheaval and uncertainty which has been created following the repeated re-organisations. The Griffiths inquiry has concentrated wholly on the issue of cost savings with increased management efficiency and can be criticised for the shallowness of its critique. The attempts to make the medical profession more accountable and cost conscious by encouraging them to take up managerial positions has met with opposition. Critics claim that there has been an inherent failure with the appointment of Regional General Managers to recognise that a National Health Service cannot be managed in the same way as a supermarket. The complexities of the NHS concerning the vast array of provisions require excellent management, yet these managers must be able to work with other groups such as the nurses, the consultants, the cleaners and the porters.

Figure 6.3 The Structure of the NHS After 1982





In light of these considerations a future service of pre-conception care is unlikely to be provided; at least in the short term. A period of consolidation will surely follow this decade of change. Unit managers, who are responsible to the General Manager are unlikely to adopt innovative practices which would mean risk-taking. They will more likely follow the management of traditional services, working for example, on the improvements to immunization or cervical cytology provisions.

### 3 Service Planning and the NHS

The successive reorganisations of the NHS represented attempts to increase efficiency and improve the delivery of services. At the same time attempts were made to make more equitable the distribution of services. In 1976-77 a new planning system was introduced and in 1977-78 the Resource Allocation Working Party (RAWP) was introduced as a method of directing resources away from the acute sector and into services for the elderly and physically and mentally handicapped. The new planning system echoed the changes in the structure of the NHS. It was used to increase central government's control so that the national policies could be implemented unaltered at the local level. The RAWP aimed to eliminate very gradually, the continuing problem of geographical inequalities by allowing differential growth in annual budgets within the regions. The Government's commitment to reduce public expenditure is therefore demonstrated in the development of the planning system and the Resource Allocation Working Party. The need for rational resource allocation within clearly defined priorities and cost effective practices has resulted from the government's attempt to constrain the NHS budget.

The future development of a pre-conception care service, would be constrained by the above factors. The planning system and RAWP are the principal mechanisms for resource allocation and priority setting in the NHS and the development of a pre-conception care service would be required to meet the criteria set

by these bodies. A service would only be established if it could be demonstrated that there would be positive rewards and that the service was cost-effective. The service of pre-conception is very difficult to assess in terms of cost/benefit analysis; as are all preventative medicine programmes. Therefore, it seems unlikely that a standard service will be established. There is not a set of established criteria against which the success or otherwise of preconception care might be evaluated. Until these criteria are developed, it is difficult to measure the benefits to the community. Resources are going to be allocated for services which can be more easily evaluated. However, in the last decade there has been a growing, if still very small, recognition of the importance of preventive health care in general and the need to improve infant mortality rates in particular. There may be a glimmer of hope as far as a pre-conception care service is concerned.

The discussion document, Priorities produced by the DHSS in 1976, specified that the maternity services, as part of acute hospital services should take a cut in resources. This was justified by reference to the rise in costs of the maternity services at the time when the number of births had been falling; and when it was anticipated that the number of births would continue to decline. The priorities identified in the 1976 document were, in general the need to strengthen the preventive aspects of health care and the need to direct resources towards the care of the handicapped and elderly. Some of the resources for these 'Cinderella' services were to be found by reductions in spending in other areas, such as the maternity services. In the same year that the Priorities document was published the Report of the Committee on Child Health Services was produced (DHSS, 1976b). This drew attention to the record of Britain, both in the international league table of infant and perinatal mortality rates and in terms of the progress made in reducing the differences in these rates between social classes within Britain.

A further document, on maternity services *The Way Forward*, (DHSS, 1977b) developed the themes of the Report of the Committee on Child Health Services. It was argued that there was an even greater recognition of the preventive aspects of maternity services, particularly in respect of ante-natal care, and intensive care of new born babies. Secondly there was an acknowledgement of concern over infant and neo-natal mortality rates and the role properly equipped and staffed maternity units could have in improving the care of the newborn. The preventive methods which were advocated however, did not stress the need to reduce the risk of a small-for-date baby being born. Instead, the prevention of mortality was seen in terms of the provision of equipment to keep the baby alive. An opportunity to state the case for pre-conception care was therefore missed. Nevertheless, as Harrison reported:

"The important political issue of priority setting within the NHS had become linked to the levels of infant and perinatal mortality and morbidity rates". (1985)

These rates are regarded as a highly sensitive indicator of the nation's health and therefore it is difficult for governments to ignore them.

The medical profession concerned with obstetric care was an important source of opposition to the proposed reduction of maternity care. During 1976-1977 obstetricians and paediatricians drew attention to the role they were playing in the reduction of handicapped being born. The effectiveness of these arguments in addition to the political sensitivity of infant and perinatal mortality rates have been offered by Harrison as an explanation "in part why, instead of actually taking a reduction in resources, maternity care was identified as a priority area when the NHS received a special injection of cash in 1977", (1985).

Clearly, this demonstrates that the provision of services is not a simple process but a complex arrangement involving governmental, professional and lay group interests. If the medical profession voices its support of a pre-conception care

service, then the chances of its provision are significantly increased. If however they continue to be sceptical of the value of the provision of preconception care; midwives and health visitors will have little influence in their call for the introduction of a national service. It is to the consideration of power within the NHS that the discussion now turns.

#### 4 Power in Health Services

The introduction of a pre-conception care service within the National Health Service will be subject to consideration of the demand for the service, its effectiveness and the cost of implementing a programme to meet these demands. It has briefly been demonstrated by using the examples of the policy document Priorities and The Way Forward that political influences have a major effect upon the allocation of resources for various services. The development of a new service is subject not only to the rational considerations in the decision making process but also to the less detectable (but probably more significant) influences of, for example, key individuals who exert pressure and exercise power on particular issues. The consideration of whether a pre-conception care service will be provided within the National Health Service has to be seen in the light of the dominant influences upon the general pattern of service provision. The distribution of power in health care systems is important to consider.

Examination of the debate during the 1970s concerning perinatal and neonatal mortality rates, demonstrates that the existence of a plurality of interests. Publications and media coverage served to bring the debate to the public's attention. In addition, the work of organised campaigns such as the Spastics Society 'Save a Baby Campaign' in 1978, served to produce pressure outside Parliament for measures to achieve improvements in mortality rates. Demands included the introduction of increased medical resources for the care of pregnant and delivering women and their newly born babies. The Spastics Society worked very closely with the medical

profession and had extensive links with medical research workers in fields such as paediatric neurology and perinatal medicine both in the United States and in Britain. The Spastics Society's activities was supportive to the needs of the medical profession, in particular the rapidly developing speciality of neonatology. More resources were demanded to provide extra intensive care baby units, also more consultants and more midwives. In addition, requests were made that national guidelines should be drawn up by the DHSS in order to guarantee an adequate obstetric and paediatric service throughout the country. The pressures for better neonatal resources were applied not by consumer groups as one might expect, but pressure was applied by leading paediatricians to ensure better resources for their speciality.

The concern over infant and perinatal mortality rates focussed on the right of all women to have an equal chance of delivering a healthy baby, and on the relative rights of the participants in childbirth to question and control circumstances and practices in order to achieve a rewarding experience. This strand of argument in the debate tended to be of a more diffuse nature, and did not form an important part of the 'official' agenda as reflected in Parliamentary questions, committees of enquiry or health authority meetings. Lay people were however raising the questions about practices which had previously been regarded as the exclusive province of professionals.

Representative groups such as AIMS (Association for Improvements in the Maternity Services) and a sector of the midwifery profession represented by ARM (Association of Radical Midwives) have called for the re-appraisal of maternity services in terms of how these relate to the needs and responsibilities of women, as perceived by women themselves. The literature concerning women's attendance at ante-natal care clinics and the literature concerning place of confinement demonstrates, there exists a mis-match between the objectives of central policy-makers and the

wishes of those using the services.

By using some of the issues concerning the maternity debate during the 1970's it has been demonstrated that the medical profession was in a position to exert power over policy makers; whilst consumer groups merely exerted influence without their views being considered within the 'official agenda' and without action being taken as a direct result of their views.

If one accepted the pluralist approach to the question of a pre-conception care service being established in the future, one would expect that a variety of groups would be in a position to influence policy. However, it is argued that without the support of the medical profession, it is unlikely that a pre-conception care service will be established. Midwives and health visitors will experience difficulty in exerting pressure upon policy makers to introduce a service. Organisations such as Foresight, the Spastics Society, the National Childbirth Trust and other similar associations will also experience difficulties in achieving the objective of the introduction of a pre-conception care service without first gaining the support of the medical profession. This is an important prerequisite in order for policy administrators and planners to be persuaded that resources should be allocated for the introduction of this service.

The concept of health which dominates in the medical profession is such as to make problematic its conversion to the concept of pre-conception care. The profession's view of health has come to occupy a dominant position in society and as such, has affected the services provided to deal with ill-health. Illsley (1977) identified the dominant concept of health as the "medical model" where doctors played a dominant role and hospitals played a major part. The medical model is seen as having two components, a disease component which holds that illness results from pathological processes in the biochemical functioning of the body; and an engineering component, which sees the body as a machine to be repaired by technical means. The medical model emphasises specific, individual causes of illness and searches for

specific individual cures for these illnesses. Acceptance of this model of health, justifies the pre-eminent position of the medical profession; in addition it perhaps explains why, within the NHS, the bulk of resources is allocated to personally orientated, general and acute hospital care. Much less importance has been attached to collective, preventive and welfare approaches to health Lalonde, (1974) has suggested that although most efforts to improve health have centred on medical interventions through health care organisations, there is a need for people to adopt healthy life-styles in order to prevent illness arising. The DHSS have adopted this policy on prevention, the individualistic approach, which does not seriously affect the medical model. The medical definition of health has been mirrored in the preventive medicine programmes with their emphasis on individual responsibility for health. The concept of pre-conception care also places responsibility upon the individual to make an active contribution prior to conception. Thus pre-conception care at present does not move away from the conventional definitions of health; and as such, it is likely to gain support from the public and with time, from the medical profession. Individuals like to feel that they are in control of their own well-being and that if they are 'ill' they can be 'cured'. However, this model of prevention, which places importance upon individual life styles and stresses individual choice is surely inadequate. The individual, it may be argued, does not have complete control over his or her life-style and environment. Numerous studies support this view. For example, Doyal (1983) have traced the industrial and environmental causes of cancer and Brenner (1979) has studied the effects and impact of unemployment on health. The medical and individualistic models of health, in particular, have been challenged by Marxist critiques which lay stress on the economic and class divisions in society which are related to inequalities in health provision, illness, life expectancy and the like (Stacey, 1977). Clearly, the importance of an individual life style is only useful if other influences upon well-being are recognised. Unemployment, environmental factors

and food manufacturing for example are all aspects which are beyond an individual's control. As such, a preventive medicine programme must recognise this.

## 5 Conclusion

The development of a service of pre-conception care provided within the National Health Service is dependent upon a variety of factors. Resources are allocated between different geographical areas, between different types of services, different age groups and between client or patient groups which make use of the NHS. The NHS Planning System is seen by the DHSS as 'the main means of giving practical effect to the requirements and intentions of the NHS Reorganisation Act, 1973 (DHSS, 1976e). The use of prioritisation, however ineffective, is a real attempt to tackle some of the problems of inequalities of services especially for the elderly and mentally handicapped. How though, to achieve priority status for pre-conception care?

The development of General Practitioners as independent contractors, rather than as salaried employees, has an important effect upon the extent to which primary care can be planned by the NHS. The consideration of whether funds are allocated depends largely upon the discretion of policy-makers and the influences exerted by social, economic and political considerations. The medical profession have been identified as a powerful lobby and it might therefore be suggested that a future service of pre-conception care will only be successful if it receives the support of the medical profession. The existing model of preventive medicine with its emphasis on 'individual' responsibility is reflected in the organisation of existing pre-conception care services and as such does not threaten the status quo.

The planning of health services involves the investigation and determination of priorities; and the evaluation of the effectiveness of policies is conducted by an examination of the benefits produced by those attending the service. The evaluation of



the effectiveness of a pre-conception care service is extremely complex. At present there is no generally accepted set of objectives and criteria for evaluation of the service. Pre-conception care is innovative, and also it may be argued that, due to the recent reorganisation of the NHS (in 1982) and more importantly the Griffiths inquiry into management, the National Health Service is in a period of uncertainty. Many individuals are being 'called to question' and are being made increasingly accountable. This sort of climate does not encourage innovation, particularly in controversial areas such as pre-conception care. In this context, it is argued, a service of pre-conception care is not likely to be provided at least in the near future. Instead, changes will be of an incrementalist nature and existing maternity services (where the medical lobby is strong) will receive attention rather than completely new services being introduced.

Having examined the situation within the NHS concerning the possible provision of pre-conception care, the next chapter highlights the views of health professionals on this subject.

## CHAPTER SEVEN

### THE DISTRICT HEALTH EDUCATION OFFICERS: ATTITUDES TO PRE-CONCEPTION CARE

The main focus of this chapter is the data collected in the interviews conducted with District Health Education Officers (DHEOs) working within the West Midlands Regional Health Authority (WMRHA). This chapter is divided into four sections. The first discusses briefly some of the reasons why the DHEOs were interviewed and how the group was chosen for study. The second section provides background information on the WMRHA, particularly with regard to the regional strategy and priorities for resource allocation which in turn affect the respective district strategies and health care provisions. The demographic characteristics of the region are also discussed, in particular the regional statistics on neonatal and perinatal mortality. The third section, presents the views of DHEOs themselves, whilst the final section reviews the implications of the research findings and draws general conclusions.

## 1 Introduction

Examination of the attitudes of the Foresight clinicians (discussed in Chapter Four) and of the staff at the West London hospital (presented in Chapter Five) to the current provisions of pre-conception care indicated that education (rather than 'treatment') was a crucial part of pre-conception care. It was considered important to investigate the attitudes of District Health Education Officers to the subject of pre-conception care and to collect information on their knowledge of local initiatives within their particular district. As officers working in the field of health promotion it was expected that they would be at the forefront of any such work in the field.

In the investigations of the Foresight pre-conception clinics and the West London pre-conception service it had been difficult to ascertain how prevalent pre-conception care was becoming nationally. It was decided to see how far pre-conception care was being provided within the West Midlands Regional Health Authority. The West Midlands region was chosen because of the relative ease of access for the researcher. Whilst it was recognised that the research findings from the regional study would not provide conclusive evidence of the level of activity in other regions, it was believed that it was reasonable to anticipate that the degree of activity within the West Midlands would be a reflection of pre-conception care initiatives in other regions which also followed the national priorities identified by the DHSS.

The District Health Education Officers were chosen as a contact for each of the twenty-two districts because they, above all, were expected to know what initiatives there were in their Districts. Moreover, accessibility to other members of the NHS staff working in the health authority was more problematic. At the time the study was being conducted (summer and autumn 1985) the West Midlands Regional Health Authority was in a process of turmoil and change following the implementation of the recommendations of the Griffiths Report (DHSS, 1983b). Many of the Districts were

recruiting or had already recruited District General Managers. These posts had sometimes been filled internally with, for example, previous District Medical Officers, District Treasurers and District Administrators becoming the new General Managers. There was much internal reorganisation taking place. In some Districts previous posts were no longer being re-filled. However, the District Health Education Officers remained in their posts thus, offering a degree of continuity.

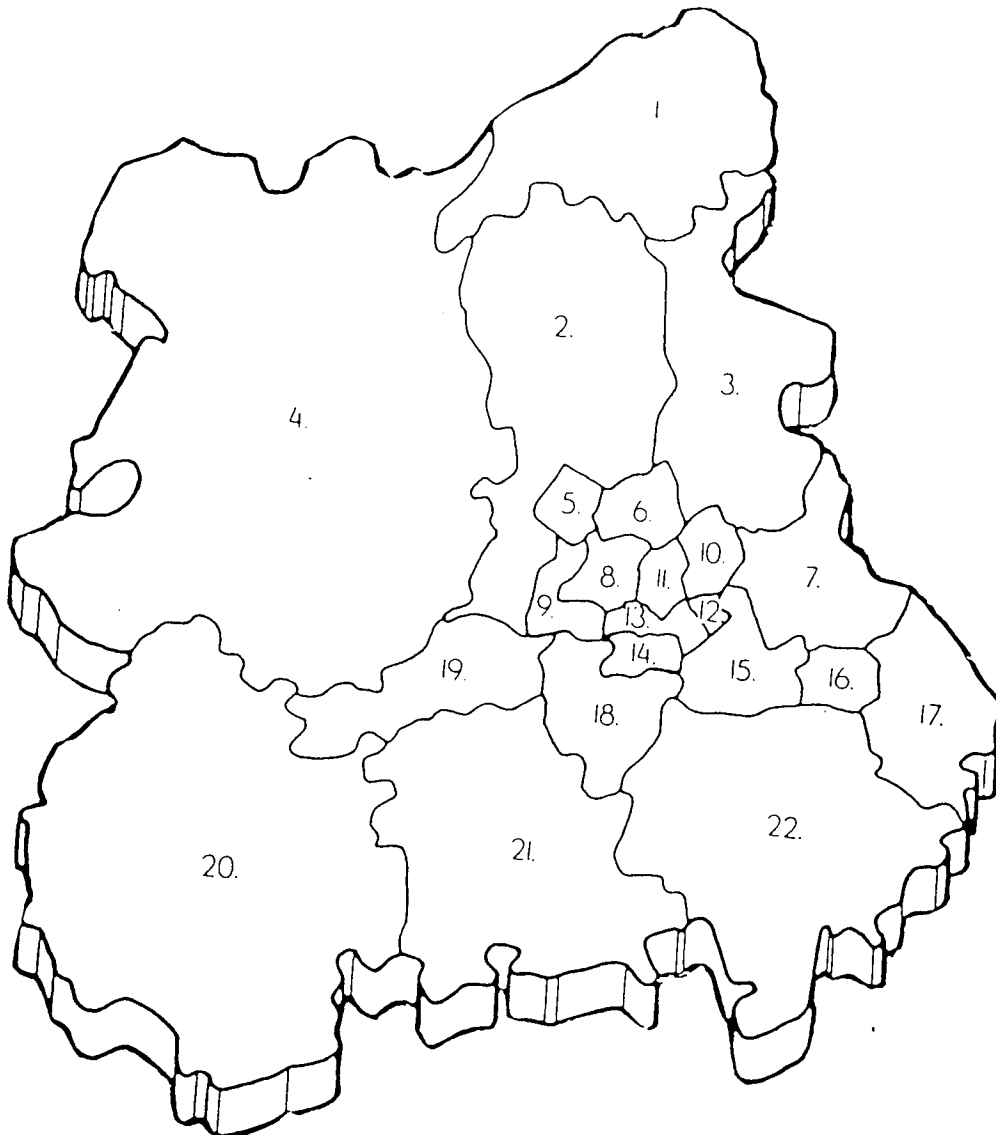
## 2 The West Midlands Regional Health Authority (WMRHA)

The West Midlands is one of fourteen Regional Health Authorities in the UK. It is the largest and comprises twenty two districts (see Figure 7.4). These are responsible for the daily operation of local health services in hospitals and the community apart from those provided by general practitioners, dentists, opticians and pharmacists who have contracts with the Family Practitioner Committees (see the discussion in Chapter Six).

The priorities within the Region and the factors which affected the determination of these has clearly had a major influence on the services which have subsequently developed in the Districts. Regional Strategic Plans were developed in 1979 and revised in 1985. These provided a ten year forward view which set out, at a fixed point in time, the manner in which the regions health care needs would be met. The plans were drawn using the experience and knowledge gained whilst monitoring the existing services and took into account constraints imposed by availability of resources. Changes in the local and national economy, coupled with changes in the policies and operations of other agencies, meant that the RHA needed to review, update and reconsider its health objectives and its methods of meeting these needs in view of external environment changes.

# The Districts of the West Midlands Regional Health Authority

Figure 7.1



West Midlands Health Region

1. North Staffordshire.
2. Mid Staffordshire.
3. South East Staffordshire
4. Shropshire.
5. Wolverhampton.
6. Walsall.
7. North Warwickshire.
8. Sandwell.
9. Dudley.
10. North Bham.
11. West Bham.
12. East Bham.
13. Central Bham.
14. South Bham.
15. Solihull.
16. Coventry.
17. Rugby.
18. Bromsgrove and Redditch.
19. Kidderminster and District.
20. Herefordshire.
21. Worcester and District.
22. South Warwickshire.

It is valuable to examine the perinatal mortality rates for the region. Also to discuss in detail, the priorities for health care.

(i) Perinatal Mortality

The perinatal mortality rate for the WMRHA was reported in 1984 to be 12.3 (per 1000 live births), which was the worst rate in the country (in England and Wales it was 10.1). Since 1979 there has been a drop in the rate but the objective of achieving a rate of 10.0 as set out in the 1979 planning document still has to be reached; (it was planned that this should be further reduced to a figure of 8.5 by 1990). The West Midlands regional perinatal mortality rate has for some time given rise for concern, particularly in districts with a considerably high perinatal mortality rate which included Rugby, Central Birmingham, Sandwell and East Birmingham. The infant mortality rate (ie. deaths under 1 year) was also high within the West Midlands Region. Districts with consistently high infant mortality rates were Rugby, Central Birmingham, East Birmingham, West Birmingham, Sandwell, Coventry, Solihull and Walsall. Apart from Rugby and Solihull, all the other districts might be expected to have experienced high perinatal and infant mortality rates due to the high proportion of non-UK born families, the low percentage of the population falling within social class I and II and a high percentage of the residual population being without employment (factors associated with high perinatal mortality). (Report of the Regional Perinatal Working Party, 1983).

These figures clearly indicate that there existed a climate which might well have been receptive to the introduction of pre-conception care services. It is valuable to examine the priorities which had been set in the region.

(ii) Priorities in Health Care

An examination of the national priorities and the effects of these upon the determination of the Regional priorities is important as these directly affect the subsequent development of District strategies and priorities. The priorities concerned with maternity services are now discussed, as these are pertinent to the subject of pre-conception care.

The Regional strategy for the West Midlands produced in 1979, was developed in the context of national priorities expressed in Priorities for Health and Personal Social Services in England issued by the DHSS in 1976 (DHSS, 1976b). In 1981, a further statement of national priorities was issued in the form of the Care in Action handbook (DHSS, 1981c). The priority groups identified were the elderly, mentally ill, mentally handicapped and the physically handicapped. The priority services identified were maternity and neonatal care, primary care services and services related to the care of young children at risk and to the care and treatment of juvenile offenders. As previously discussed in Chapter Six, the policy document Priorities for Health and Personal Social Services in England (DHSS, 1976b) had envisaged a reduced level of growth and less priority for the general and acute hospital services and maternity services. However, in Care in Action the priority of maternity services was reinstated, Ham (1985) has argued, that this was due to the power exerted by the medical profession. The emphasis for services used mainly by the elderly, the mentally ill and the mentally and physically handicapped remained the same.

Two important priorities which have a direct connection with the subject of pre-conception care are the emphasis on the development of health promotion within the strategy period (defined as a prime objective) and, secondly, the reduction of the perinatal mortality rate. The WMRHA responded to the Secretary of State's introductory letter to Care in Action which asked DHAs to emphasise the high priority to be given to

the prevention of ill health. The West Midlands Regional Advisory Group on Health Promotion and Preventive Medicine published An Action Plan for Health Authorities in 1982 in an attempt to assist officers to produce health promotion plans. In addition, a 'purposive' Policy Paper, entitled Objectives for Health Promotion for the West Midlands Toward 1996 was made available to assist in the formulation of District strategic plans. It contained recommendations that DHAs and their local multidisciplinary Health Promotion Teams should set out key objectives and make firm targets to be achieved by the end of the strategy period.

"The main goal is to ensure that the next ten years bring a major enhancement of the health status of the regional population (WMRHA, 1984, p 45).

The Regional Advisory Group (whose role is discussed in Chapter Eight) advised that 0.5% of the total regional budget should be devoted to health promotion activities by 1996 excluding direct care provided by such people as health visitors, which "should be additional to this sum". It advised that every District should establish its own objectives for health promotion by identification of "action areas" by setting targets for achievement by 1996.

The Regional Health Authority policy supplement Maternity Services and Neonatal Care estimated an increase of 9.3% in the number of births by 1993. It identified certain groups at a higher risk of contributing to mortality rates; namely the young, the unmarried, ethnic minorities and the unemployed, with the recommendation that the maternity services should be sensitive to the special needs of these groups. The objectives of the RHA included the following:

"To ensure that preventive services in health education, preparation for pregnancy, genetic counselling and fertility control services are widely available and acceptable to women at risk". (WMRHA, 1984, p 83)



Table 7.2 - The West Midlands Regional Health Authority Population, Births and Low Weight (1985)

District	Population	Births			% of total births < 2500 gms
		Total	Live	Still	
Bromsgrove	162.7	2217	2206	11	6.9
Hereford	152.7	1840	1831	9	5.6
Kidderminster	101.1	1252	1244	8	6.2
Worcester	234.3	2734	2719	15	6.4
Shropshire	390.3	5001	4970	31	6.5
Mid Staffs	306.1	4118	4098	20	6.0
North Staffs	463.0	5930	5896	34	7.0
SE Staffs	251.3	3494	3472	22	6.5
Rugby	85.6	1033	1027	6	6.0
North Warks	172.7	2360	2347	13	6.4
South Warks	221.4	2420	2411	9	6.4
Central Birmingham	179.9	2954	2932	22	8.9
East Birmingham	201.7	3448	3414	34	8.4
North Birmingham	163.4	1972	1958	14	6.8
South Birmingham	249.1	3590	3577	13	7.1
West Birmingham	213.4	4065	4035	30	9.5
Coventry	312.2	4633	4609	24	7.9
Dudley	300.8	3851	3826	25	7.9
Sandwell	303.3	4327	4292	35	10.1
Solihull	201.9	2380	2363	17	7.5
Walsall	262.9	3741	3711	30	7.5
Wolverhampton	253.2	3433	3413	20	9.4
Region	5183.0	70793	70351	442	7.5
England and Wales	49923.5	659712	656072	3640	7.1

Source: WMRHA Statistics Division

It is useful to consider the investigation, conducted in 1985, of the services and attitudes of staff concerning health promotion initiatives specifically related to ante natal and pre-conception care. The brief overview of the socio-demographic and health characteristics demonstrated that the WMRHA had a recognised problem of districts in the inner city areas. These have a high residual population with social characteristics said to be contributory factors to increasing their risks of increasing, the already high, perinatal mortality rate. Such factors include a high fertility rate and a high number of unemployed. Table 7.2 shows births in the WMRHA area in 1985. Particular attention is drawn to the right hand column, showing the percentage of total births weighing less than 2500 gms (low birth weight). In the districts of East Birmingham, Central Birmingham and West Birmingham. The figures are 8.4, 8.9 and 9.5 respectively. These are particularly high figures compared with a figure of 7.1 for England and Wales generally. Birth weight (as discussed in Chapter One) has a direct affect upon the survival rate and low birth weight equates with an increased chance of perinatal mortality.

Perinatal mortality rates were regarded as a problem in the districts investigated. In the Districts examined the fertility rate was greater than that observed nationally. For example, the regional standard fertility ratio SFR (ie. the observed live births as a percent of expected live births), where expected live births is the number expected if the DHA experienced the age-specific fertility rates of England and Wales. Table 7.3 shows that the number of births in the region was 4% above that expected for the given number of fertile women based on England and Wales rates. Four of the districts in the group studied had a high SFR these were West and Central Birmingham, Sandwell, Coventry with rates of 138, 120, 113 and 111 respectively. The total period fertility rates which measured the average number of children per woman (TPFR) was 1.86 for the region compared to a figure of 1.78 for England and Wales (1985) (shown in Table 7.3).

Table 7.3 - The West Midlands Regional Health Authority Fertility Rates (1985)

District	SFR	General Fertility Rate	TPFR	Illegitimacy Ratio	Crude Birth Rate
Bromsgrove	98	59.0	1.75	154	13.6
Hereford	97	58.1	1.74	134	12.0
Kidderminster	97	55.8	1.72	163	12.3
Worcester	94	54.6	1.69	149	11.6
Shropshire	99	58.8	1.77	164	12.7
Mid Staffs	99	59.0	1.77	143	13.4
North Staffs	100	60.8	1.77	183	12.7
SE Staffs	101	60.0	1.80	147	13.8
Rugby	101	58.0	1.82	157	12.0
North Warks	101	60.5	1.80	144	13.6
South Warks	83	49.6	1.51	113	10.9
Central Birmingham	121	76.6	2.18	232	16.3
East Birmingham	133	83.9	2.37	221	16.9
North Birmingham	91	55.5	1.65	233	12.0
South Birmingham	105	66.1	1.87	267	14.4
West Birmingham	138	88.3	2.43	295	18.9
Coventry	112	68.9	1.98	240	14.8
Dudley	99	59.5	1.77	137	12.7
Sandwell	113	69.1	1.97	210	14.2
Solihull	93	53.1	1.68	183	11.7
Walsall	111	66.5	1.97	198	14.1
Wolverhampton	106	65.0	1.85	247	13.5
Region	104	63.1	1.86	192	13.6
England and Wales	100	61.0	1.78	192	13.1

Source: WMRHA Statistics Division

Within the districts contained in the study, West Birmingham, Central Birmingham, Coventry and Wolverhampton all had high total period fertility rates of 2.43, 2.18, 1.98 and 1.85 respectively. However, one of the districts in the study had the lowest TPFRR namely South Warwickshire with a figure of 1.51 (1985). The group of districts contained in the study also experienced a particularly high illegitimacy rate. The rate in the region was the same as that for England and Wales (192 per 1000 live births). However, the illegitimacy rate for Central Birmingham, West Birmingham and Coventry was 232, 295 and 240 respectively. Rates of illegitimacy were found to be above the national average in all the authorities in the West Midlands County. The illegitimacy rate is pertinent to the consideration of pre-conception care when one considers the research findings of the Regional Perinatal Working Party (RPWP) who reported in 1983:

"Mothers who are characterised by low socio-economic position, illegitimacy, comparatively high or low maternal age, and in minority ethnic groups all experience higher perinatal rates. (WMRHA, 1983).

"Legitimacy affects the perinatal rate and shows a difference of over two fifths, with a higher rate amongst the unsupported, both nationally and regionally".

Thus, the group of DHEOs interviewed represented some of the most affected districts as regards factors contributing to a high perinatal and infant mortality rate.

### 3 Attitudes to Pre-conception Care

Having set the scene within which the DHEOs function, the data collected from the interviews with DHEOs is now discussed. DHEOs are responsible for the whole range of health care, and it was hoped that they would offer a broader approach than perhaps other health professionals. Access was obtained to ten of the 21 DHEOs in the Region (see Chapter Two).

It was evident in the early stages of the discussions with DHEOs that the amount of knowledge that they had on the subject of pre-conception care was limited. This may have been due to poor communications in some districts between the DHEOs and other professional staff, (for example, the Directors of Nursing Services). If a pre-conception service or pre-conception advice was being provided by midwifery and medical staff, (especially if it was not a formal service but was being provided as general good practice as part of a midwife or health visitors routine work), this would be unlikely to be brought to the DHEOs attention. So, because a DHEO reported that as far as he or she knew there was no formal pre-conception service, this could not automatically be taken to mean that no service existed.

Each of the Officers was asked if he/she was aware of a formal or an informal provision of pre-conception care. At the time of interview only two out of the ten DHEOs were able to give a positive report on pre-conception care provisions available within their district. The DHEO for Bromsgrove and Redditch Health Authority was actively involved with a health promotion exercise, encouraging couples to prepare for pregnancy. The health education unit at the District had produced a number of posters (trigger posters) which had then been followed up with the provision of advice in the form of book marks, a travelling display unit and a pre-conception care pack with the message 'Get fit before getting pregnant - take steps towards a healthy pregnancy'. A cartoon of a baby was used for the logos. The venture had received financial backing from the Johnson and Johnson Babycare Products Group for the development of a number of visual aids to be used within the District for interested groups to help promote the message. In addition to the production of visual aids and the pre-conception care packs, the advice concerning pre-conception care was incorporated within the health and social development education within the school curriculum through the District (with a Health Education Officer working closely with the District's Education Authority). Thus

the District was not providing a formal clinical service, but was providing health education to target groups, fifth form pupils within the local schools.

The second District where pre-conception care work was reported by the DHEO was West Birmingham. She reported that five Well Women Clinics were planned (for 1986, the location of which had not yet been decided) to provide rubella screening, blood screening, genetic counselling for Sickle Cell anaemia and Thalassaemia, cervical cytology and breast palpation. One clinic was to be devoted entirely to pre-conception care. It was reported that a clinician and two nurses had been appointed to run the clinics. The methods of evaluation of the effectiveness of these were being determined at the time of the interview.

The other DHEOs knowledge of pre-conception care initiatives within their Districts was patchy and limited. Many believed that pre-conception care advice was being made available by family planning clinic nurses, midwives and health visitors as well as by some GPs in their normal routine daily work. As one DHEO remarked:

"The only thing that I can say to you is that I don't know. I have not been informed of anything specifically happening in this district but that doesn't mean to say it isn't happening".

What was clear was that formal provision or campaigning was restricted to the two districts (out of the 10 covered) mentioned above. Four of the DHEOs interviewed raised the question as to whose responsibility it was for pre-conception care. There was confusion as to where the responsibility lay, which highlighted the problem of inadequate awareness about pre-conception care provisions. A typical comment was as follows:

"The simple answer is not that I know of and I think in a way that indicates the sorts of problems there are when looking at pre-conception care because there is a sort of query about whose responsibility is it? Is it the responsibility of, for example, family planning staff to do it because they're going to be the one's hopefully picking up people who are going to plan to have a child? Or is

it the responsibility of the midwives because women aren't pregnant? Is it the responsibility of the health visitors because they normally only deal with a woman once she has a child under five. Or is it health education, a purely educational thing? So I think one of the things is that any one of those disciplines might do something and the others might not necessarily know about it".

As well as this problem of "responsibility" for providing and overseeing pre-conception care services, it was clear there was poor communication between the health professionals. Six of the ten DHEOs questioned, commented on the problems of professional rivalry within their District. For example, one DHEO mentioned a lack of communication between the midwives and health visitors. Another reported the problems experienced by the health educationalists with regards to gaining co-operation within the health service. One respondent commented:

"I believe that the biggest selling job that needs to be done on health promotion, is as regards health education in the NHS. They are the most resistant, far far more resistant than the educational authorities".

The DHEOs were asked for their opinions on the concept of pre-conception care; their perception of the need for the introduction of this care and the consideration of the likely future of such a service. It was surprising to receive quite hostile views towards pre-conception care from the majority of the respondents. Seven of the ten respondents expressed concern that the concept of pre-conception care, as a means to improve the outcome of pregnancy, was not proved and substantiated in the medical literature. In this, their views echoed those of some of the clinicians reported in Chapter Four. Some typical comments were as follows:

"We have no evidence that pre-conception care can offer those people anything more than good ante-natal care".

The District Health Education Officers were worried that pre-conception care seemed to place responsibility upon the individual for the improvement of pregnancy outcome by

changes advocated in lifestyle. In short they felt that pre-conception care advice was in danger of raising people's expectations, ignoring an individual's social and environmental constraints and of making false promises. Some comments were as follows:

"You see the other thing from my point of view is that I've actually got some very serious doubts about the things that are done. If you look at what are the greatest indicators of problems for the pregnancy they're all to do with poverty, they're housing conditions, not enough money for proper food ... all of these issues and the thing that worries me about this idea of pre-conception care, give your body an MOT, sort of thing, is that it takes into account none of those factors".

"What worries me about some of the things I've seen that's happening is that it puts all the responsibility back at the individual and yet in fact there are lots of things that we need to be tackling that pre-conceptual care does nothing about".

"I think it's quite worrying actually; because I think in a way we are offering people when we can't deliver the goods again and I'm very concerned that no health education programme should be concerned with raising people's expectations falsely and I think pre-conceptual care is in danger of doing that".

"It's not as easy as saying you must have fresh foods. There are all sorts of issues apart from the socio-economic position of the family. If the mum is working and she doesn't have access to shop every day for fresh food, that is actually a problem. If she only has access to the local shops that don't actually stock stuff that is really fresh. The vegetables are losing their vitamin content anyway as they sit on the shelves, it's more expensive, and in addition she may not have access to wholemeal bread and all that sort of thing".

Several of the DHEOs felt that, in addition to the problem of raising expectations for a healthy pregnancy, the group who were presently attending for pre-conception care and who were likely to take up the service were those who had experienced previous obstetric or gynaecological problems, who were desperate for help and who would be likely to have high expectations. An officer commented the following:

"If you've had one tragedy already and you're clutching at straws to try and make sure it doesn't happen again I think in the way in which these clinics and services are provided you musn't make false promises to them, raise false expectations, which I think it's very easy to do because people could still go to a clinic do all the right things, have all the right tests and end up with a baby with Spina Bifida".



In other words, the fear was that the service might be taken up by people whom it might not be able to help. The question of a "general" or a "targetted" service, raised by some of the clinicians interviewed in Chapter Four, was thus raised again.

The DHEOs were next asked for their views as to where they believed pre-conception care services should be made available and to whom. They were also asked what problems they could foresee in the provision of a future service. Eight of the DHEOs questioned, stated that pre-conception care should be provided within the NHS, but not as a separate clinic. It was felt that Well Women Clinics were the most appropriate settings for pre-conception care to be provided. As with the Foresight clinicians, the focus tended to be on the woman rather than the man. Some typical comments were as follows:

"I think pre-conception care should be pressed for within the NHS. I can't see the NHS providing a whole new service, I don't think it's realistic and I don't feel it would be right because it's divorcing again this whole business of what is generally seen as womens' issues from general health care and I don't think that's a step in the right direction".

"I think it needs to be integrated into other services ... and it needs to be a greater dissemination of information in a way that is accessible to women. I would much rather see it developing through well women services than as a separate service".

These respondents commented that, before a pre-conception service was implemented there should be an increased awareness of existing problems connected to existing maternity services in order for those to be avoided in the new provisions. Considerable discussion concerned the role health education played in the creation of an awareness within individuals and an ability to make informed choices. In addition, factors which affected this process were also discussed. Several DHEOs felt that there was insufficient attention placed upon the group at which pre-conception care should be targeted. Criticism was made of the notion of some sort of general application of pre-conception

care to everyone of fertile age. Some comments were as follows:

"We have a problem of who are we aiming at? We might be aiming all of this worthy work at all of those people who plan their pregnancy and who have got no problems. One of the difficulties of planning a programme is that we don't know. Do we have more unplanned pregnancies for example in the lower socio-economic groups? Because if we do we know that they have got more problems with perinatal mortality and abnormality - they've also got more unplanned pregnancies".

"One of the other things is that we don't have any reliable statistics about how many pregnancies are planned. We don't know how many of the pregnancies which end with problems come from the percentage of pregnancies which are unplanned".

The DHEOs mentioned problems concerning the existing maternity services and highlighted the need for a greater attempt to encourage men to receive health care and to be involved in the whole process from planning through to ante-natal and finally post-natal services and health care. The Well Women clinics clearly do little to overcome these problems, because of the exclusion of men. Some comments were as follows:

"Men aren't encouraged into the system. If you look at family planning clinics they are very much female orientated".

"Everybody says glibly oh yes men are encouraged but what happens if the men go they feel they stand out like a sore thumb. And it also shows up inappropriate practices in clinics you see, like discussing confidential information when other people can hear and if there's a man sitting there listening it's even worse than if there are fellow women".

"And ante-natal clinics you see - if men go along they're generally an appendage and they're generally not allowed in with the woman when she goes to be talked to and examined; yet what is the point of the man going just to wait in the waiting room"?

Finally respondents were asked to indicate how they saw their role within future possible provisions for pre-conception care. All saw that they had an important part to play in the education of people so as to increase their awareness of the issues affecting pregnancy outcome. The DHEO's views were that they should be involved with putting across simple health care messages which were appropriate to the recipients. It was

advocated that the basis of the health care messages should be sound scientific data. Pre-conception care was seen as problematic in that much was based upon the Foresight literature. In addition, the DHEOs stated that there must be recognition of "structural" factors such as the socio-economic position of individuals, their social environment and the constraints which are upon individuals. Some comments were as follows:

"I think really what we've got to do is to say what scientific knowledge do we have on which we can base proper campaigns or proper activities. In other words if we are sure that diet makes a difference to the outcome of pregnancy then I think we have to try and pitch it at fairly simplistic messages for people. It becomes very complex once you get an organisation like Foresight which offers various tests to do different things which many of us who are middle class probably won't understand what they are all about".

"We should be putting messages across in a way which is appropriate to an individual's lifestyle; for example a lot of the stuff that comes out will not be relevant to most of our inner city populations".

"It's no good us putting across messages which are going to conflict with the health professionals which is why we say time and time again visit your doctor and midwife regularly that is where questions have got to be asked (concerning iron tablets to be taken during pregnancy)".

"May be what we have got to do is to actually help people to be clear about what they actually want and need".

A few DHEOs were rather tentative about their role within the future provision of pre-conception care. One said:

"There are things which can be done. I am just concerned at the tenuous base of it all and how to pitch it and what to do".

#### 4 Conclusion

In this conclusion it is hoped to draw out some of the main points made by DHEOs about pre-conception care, on the present services and on possible future provisions. The majority of the group expressed scepticism and misgivings over the

claims which had been made for pre-conception care. The lack of scientific foundations from which to develop health promotion and health education programmes was the reason for this scepticism. Also, the concept of pre-conception care was criticised because of its emphasis upon the part played by the individual in affecting the pregnancy outcome. It was criticised because it ignored the environmental, economic, social and psychological factors which affect individual behaviour and attitudes and the processes by which behaviour is constrained.

The DHEOs, whilst suggesting that pre-conception care would almost certainly be introduced into the NHS in the future as part of Regional strategic plans, tended to believe that it would not take the form of a separate clinics. They felt that pre-conception care would and should be introduced into the existing maternity services, to be provided within family planning clinics and to be introduced into the provisions of Well Women clinics. They tended therefore to ignore the exclusion of men from these clinics and it is difficult to see where men would be brought in to a pre-conception clinic organised on such lines.

However, a need was identified to overcome existing problems pertaining to the provision of existing services with for example, men being encouraged in the future, to take a more active role in family planning services and ante-natal clinics. This would facilitate the participation of men into preparation for pregnancy and parenthood generally. The DHEOs also criticised existing ante-natal provisions as being inaccessible and sometimes inappropriate for certain recipients. For example, in some Districts the services were being centralised, with the closure of small GP units to reduce running costs. This would probably decrease the numbers who were attending ante-natal clinics due to inaccessibility; this was especially a problem in the rural districts of Shropshire and South Warwickshire.

The present ante-natal services were deemed inappropriate for some individuals; those who were not identified as "at risk", were required to attend the same number of appointments as those who were identified as "at risk". Thus the service was a general one and did not meet and reflect the particular needs both real and perceived, of the individuals attending (this matter is returned to in discussion in Appendix Four). All of the DHEOs interviewed felt that instead of spending scarce and valuable resources to develop a new provision for pre-conception care, the resources should be used to improve the provision of existing ante-natal services. It was stated that if a pre-conception service was provided it should only be operated as a pilot exercise to receive a thorough evaluation. (The Bromsgrove and Redditch unit were planning an evaluation of their work). It was accepted that evaluation of health services and in particular, pre-conception services, was extremely difficult. Factors which were identified as contributing to the problem of evaluation was the lack of sound scientific data on which to develop appropriate facilities, clinical and advisory.

To date, there has not been any development of policy guidelines for pre-conception care which could assist in service planning. The Regional Strategy Report (1984) recommended in its report that "preventive services to include, preparation for pregnancy should be developed". However, the report did not contain any guidelines on what should be incorporated into the service and what criteria should be used for its evaluation. Without guidelines, backed up ultimately by resources, this statement can only remain a pious hope.

At the time of interviews, 1985, only two out of ten Districts were thus providing general health education for pre-conception care which largely consisted of information on nutrition, alcohol and smoking in preparation for pregnancy. One of the Districts concerned, was preparing for the establishment of a formal pre-conception clinic to be established in addition to the development of five Well Women Clinics. The

other Districts' work on pre-conception care consisted of health education within the school curriculum and community promotion exercises adopting high profile methods such as slide and photography exhibitions which again emphasised clear healthy messages based upon recommendations on diet etc for pregnancy which were based upon sound scientific data. Thus little pre-conception care was being provided in a Region which perhaps needed it more than others, considering the recognised problem of high rates of perinatal and infant mortality.

Although a pre-conception service has been established within the Walsall district in 1986, this service has yet to be developed and evaluated. The author was not allowed access to data or to interview the personnel. The lack of information about and access to the Walsall service reflected another problem. Pre-conception care is in an early stage of development. Pioneers are notoriously suspicious of outsiders and often tend to keep their work to themselves. It is perhaps not surprising that a student writing a thesis (particularly on individual linked to a controversial pioneering agency, would be regarded with some suspicion). This illustrates a problem discussed in the next chapter concerning poor channels of communication which prohibited adequate transfer of information within the NHS and to other agencies.

The strategic plans and policy plans for the West Midlands Regional Health Authority, whilst paying lip service to the importance of prevention and reduction of perinatal, and infant mortality had not made monies directly available for pre-conception care at the time of the study. (A sum of £30,000 was made available towards the latter months of 1986 to a medical officer to establish and evaluate the Walsall service). Thus, within the West Midlands Region pre-conception care did not make a significant contribution to existing preventive medicine campaigns and from the examination of the attitudes of the District Health Education Officers it seemed unlikely to do so in the near future.



## CHAPTER EIGHT

### THE ANTE-NATAL CARE ACTION GROUP

This chapter examines the work conducted by the Ante-Natal Care Action Group of the West Midlands Regional Advisory Group on Health Promotion and Preventive Medicine (RAGHP), following the author's appointment to the committee in April 1985.

This chapter is divided into four sections, the first explains the reason for studying Regional Advisory Group's Ante-Natal Care Action Group and identifies the research aims. The second section provides background information and details of the group's composition, and reports on the group's activities. The third section discusses the problems encountered in the operation of the group and describes the factors which influenced its functioning. The final section contains a discussion of the author's observations of the group.

## 1 Research Aims

The decision to try and gain access to the Ante-Natal Care Action Group of the Regional Advisory Group on Health Promotion and Preventive Medicine was taken for a number of reasons. It was believed that by membership of the group would provide detailed information on current or proposed pre-conception services, as well as on ante-natal services. A further reason for seeking membership of the group was to gain a measure of "acceptance" and increased credibility from health professionals. This was considered to be essential to gain access for subsequent interviews, for example of the DHEOs (see Chapter Seven). The researchers membership of the Ante-Natal Care Action Group may be seen to complement these interviews and the findings indicate a number of similarities.

The participant observation of the Ante-Natal Care Action Group was also conducted in order to observe the interaction of the Group and also to identify any problems in its operation. In addition it was hoped that the experience would provide information concerning the processes for the evaluation of health promotion exercises for maternity care services encouraged by the Group.

The West Midlands Regional Health Authority had identified a priority objective as the reduction of perinatal, neonatal and infant mortality (see Chapter Six); it was considered desirable to investigate at first hand the measures which the Regional Advisory Group on Health Promotion (RAGHP) were undertaking to meet this objective. In particular, it was important to ascertain what part (if any) pre-conception care played in these measures. An evaluation of health care provisions must adopt a set of criteria to use in the evaluation. As previously mentioned, there was no established guidelines and criteria with which to evaluate the effectiveness of pre-conception care provisions. However, membership of the Action Group, would it was hoped indicate existing criteria with which ante-natal provisions were being evaluated and perhaps show



if similar criteria might be adopted or developed for an eventual evaluation of pre-conception care provisions.

## 2 The Group and its Activities

The first meeting of the Regional Advisory Group on Health Promotion and Preventive Medicine (RAGHP) took place in 1979. The origins of the Group may be traced to the publication of the Regional Health Authority's planning guidelines in May 1978, in which emphasis was placed on the need to establish "prevention programmes" on health problems such as coronary artery disease, alcoholism, lung cancer and the health of the foetus and newborn. The WMRHA had "nailed health promotion and preventive medicine to its planning mast" (Castle, 1980).

In order for preventive issues to receive funding it was necessary for them to be considered in the resource allocation process when priorities were being designated and budgets determined. Regional guidelines were followed up by a consultation paper issued to District teams of officers to clarify the role which the Regional Health Authority would play in health promotion and preventive medicine programmes over the ten year strategy period. A Regional Advisory Group was advocated, which would "draw an input from medicine, nursing, public relations and other relevant professions, and identify issues where regional resources might be advantageously deployed" (Castle, 1980). The Regional Advisory Group was developed, to advise the Regional Health Authority and District Health Authorities and their Officers, about relevant matters in the field of Health Promotion, Health Education and Preventive Medicine and to review the progress across the Region. It was to set up to identify health promotion issues where Regional resources might be advantageously deployed and where collaboration with Districts would be fruitful in addition to achieving the continuity of programmes towards common objectives across the Districts. The Regional Advisory Group was intended

also, to monitor and encourage development of improved standards in health promotion and preventive medicine, with the support of research and development projects to achieve this objective. The role of the Regional Advisory Group was, essentially, therefore catalytic. The range of work initiated and sponsored by RAGHP was very wide. Funds made available by the group were used by education departments as well as health departments.

The Ante-Natal Care Action Group was convened in 1976 (three years before the RAGHP) in an attempt to reduce the high perinatal mortality rates within the West Midlands Regional Health Authority. The Group became an Action Group of the Regional Advisory Group on Health Promotion and Preventive Medicine in 1979/1980, which coincided with the publication of the Second Report from the Social Services Committee on Perinatal and Neonatal Mortality (DHSS, 1980b)

The Action Group comprised representatives from six Districts and three Regional Officers from the West Midlands Health Authority. Expertise was brought to the Group from a variety of individuals working in different disciplines which included health education, nursing, midwifery and health visiting, clinical practice and community medicine. Two DHEOs, a District Nursing Officer, a Director of Nursing Services, a Consultant Obstetrician and a Registrar in Community Medicine were amongst the members. In addition, the Group was joined by a representative from the voluntary sector represented by a member of the National Childbirth Trust. Research and evaluation expertise, in addition to administration and service planning, was provided by the three Regional Officers. The group received a tiny budget allocation - approximately £5000 per annum, which was one of the smallest allocations by the RAGHP to the action groups which received in total in 1986 £138,000.

The Ante-Natal Care Group was involved in a number of activities at the time the researcher joined it in April 1985. In addition to a consideration of these, it is

valuable to examine activities which were planned but did not develop and to determine the reasons for this. The Group's activities are presented in chronological order. The activities are discussed as follows; an ante-natal care study day, a survey of the district implementations of the recommendations contained in the Care in Action handbook and of the Second Report from the Social Services Committee (DHSS, 1980b) and work concerning the development of an ante-natal care learning package, and a survey on the availability and quality of ante-natal care is discussed.

(i) Ante-Natal Care Study Day

The Group proposed to hold a study day to discuss services for ante-natal care with young people identified as the target group. The objective of the study day was to identify the problems of ante-natal care and to consider the role that the education system does and should play in the teaching of ante-natal care. The decision to hold the study day was abandoned however, as it was believed that the Group would have difficulty in reaching its objectives. A number of problems were identified which included the likelihood that the study day would not be attended by many of those who were the target group, ie. those individuals who had low records of attendance for ante-natal services. (Members of social classes III, IV and V, and individuals from ethnic minorities). The lack of co-operation from the schools as a result of the teachers dispute of 1986 was one factor leading to the abandonment of the project. Also, the Maternity Services Liaison Committee, which had originally supported the proposed study day objected to the target group proposed by the Ante-Natal Care Action Group and argued that the study day should become a study evening addressed to pregnant women in the form of an 'open forum'. This was rejected by the Ante Natal Group because it was considered that only the articulate middle classes would attend. The Group also believed as a result of informal enquiries that the clinicians would be unlikely to co-operate in

an open forum.

During discussions in the Group it was also suggested that an investigation of 'consumer expectations' of ante-natal services presupposed that individuals had consciously considered what their expectations of ante-natal care facilities were. It was decided that many individuals would have been unlikely to have done this and difficulties in evaluation of consumer expectations would have arisen. Thus, although it was considered that a study day for consumers was innovative, problems arose concerning the difficulties of defining the population needs and of reaching the target group identified for the study. The failure to get the proposed study day off the ground illustrated a major problem faced by the Group. The need to enlist the co-operation, not only of other NHS groups, but of outside bodies too (such as the schools). It also served to illustrate the problems of measuring and evaluating the effectiveness of a health education and preventive health programmes.

(ii) Implementation of the *Care in Action Handbook* Recommendations

The Ante Natal Care Group proposed that a survey should be conducted to determine the extent to which Districts had implemented the recommendations contained in the Care in Action handbook. It was thus recognised that the Ante Natal Care Group had an important role to play in the identification of good practice and improved services. The House of Commons Social Services Committee's Second Report on Perinatal and Neonatal Mortality (1980b) acknowledged the importance of client satisfaction of ante-natal care. The Report made a number of recommendations on the way forward in the provision of ante-natal care, and one of their recommendations was that a new committee, the Maternity Services Advisory Committee should be established by the Department of Health and Social Security. This Committee produced its first report on Ante-natal Care in 1982. This included a checklist of good practices in ante-natal care by

Health Authorities. The checklist was adopted for use by the Ante-Natal Care Group to measure the degree to which Districts had implemented changes in response to recommendations of the Committee. This was done by sending letters to each district which requested the information.

(iii) Development of an Ante-Natal Care Learning Package

The third activity in which the author was closely involved, concerned a recommendation proposed by Dr M Kozak. Following a study conducted by Dr Kozak (1985) a number of proposals were made for the training needs of midwives in relation to ante-natal care. The Group was involved with the implementation of the findings and an "Ante-Natal Care Learning Package" was considered to be the most suitable method to put Dr Kozak's recommendations into practice. In conjunction with Birmingham Polytechnic, work was undertaken on the development of a Package. The work received funding of £1,500 for the development of visual aid and tape materials. Work was still continuing on this project two years after its inception. The long time involved for this project was due to the problems in the development of appropriate material which will be valuable to all the Districts. The material has to be culture specific and containing clear messages for all midwives.

(iv) The Availability and Quality of Ante-Natal Services

Other work of the Group arose out of the Ministerial Review of the West Midlands Regional Health Authority (1985) in which the following directive was issued:

"To review availability and quality of screening facilities and to agree with districts of below average performance clear targets for early implementation".

In compliance with the Ministerial Review, the WMRHA Service Planning Department had compiled a detailed questionnaire which was distributed to the District General

Managers in February 1986. The questionnaire requested information concerning facilities made available for the confirmation of the pregnancy for women who were reluctant to approach general practitioners. Of specific concern were women from ethnic minorities who experienced cultural differences and language difficulties and women who were unable to attend day time clinics. In addition, information was requested on the number of women who attended for their first hospital ante-natal clinic appointment. Districts were requested to provide information on the work conducted within their district to publicise the importance of early ante-natal care to their client group. Questions were asked concerning the extent to which the services took account of the diversity of cultures, languages and socio-economic circumstances. Additional information concerned the peripheral consultant ante-natal clinics, their location and the average number of patients booked for each session and the educational facilities available. Information concerning the number of patients who did not attend, for the follow-up procedures operated by the District and for the screening facilities for those at risk.

The Ante-Natal Care Action Group had received a copy of the summaries of the results from the returns of the Districts. It was decided that a sub-group of the Group should meet to discuss in further detail the results of this survey on the availability and quality of ante-natal services. The Group felt that the Regional survey had concentrated on the collection of quantitative data to the exclusion of qualitative data. The questionnaires were distributed to the District General Managers; it was felt that it would perhaps have been more suitable for these to have been sent to the Maternity Services Liaison Committee, as they would have access to information of a more qualitative nature.

The information requested in these questionnaires on surveys of consumer views on ante-natal services was chosen for further study by the Group. Twelve

districts had stated that they had conducted consumer expectation surveys. The Ante-Natal Action Group requested further details from these Districts, including available reports on the work conducted to enable the identification of 'good practice'. In addition, it was hoped to identify the nature and extent of problems experienced by consumers of ante-natal care, to demonstrate how successful Districts had been in altering practice and in monitoring the effect of change in response to the problems identified. Informal contacts were made by members of the Group, with Directors of Nursing Services. Following a mixed response from Districts, formal letters requesting information were sent.

The Ministerial Review therefore, whilst encouraging the collection of valuable information on the quantitative aspects of the provisions for ante-natal care, was affected by the lack of consistency of who filled in the returns and thus of the accuracy of the information collected. Qualitative data was ignored and policies of a particular District not perhaps fully understood. The targets identified for some districts of 'below average performance' and sent out by the Service Planning Department in accordance with the instructions of the Review, were seen to place increased demands upon districts without the allocation of resources to meet the further pressures imposed. For example, for Districts whose ante-natal clinics were already full, instructions that women should be booked at an earlier period of gestation would further increase the number of women attending the already over-crowded clinics. In the current climate, it was not possible to increase the staff of consultants and midwives at these clinics. Thus the Ante-Natal Care Action Group's function was to identify the inconsistencies and conflicting policies in order to harmonise the services provided in the districts.

The four examples cited serve to demonstrate the problems of evaluation and investigation of health service provisions. The work of the Ante-Natal Care Group must be considered in the light of the problems affecting the activities of the Group. The

examination of the activities concerning ante-natal care served however to illustrate the constraints placed upon the Group. For example, work which evolved as a result of the Ministerial Review fulfilled of short term goals but at the expense of fundamental new work (such as pre-conception care). Any evaluation of the availability and quality of services and of the analysis of health education and promotion must take into account the methods adopted. Qualitative, supportive data was identified as being very useful for the interpretation of quantitative findings. The work which had been conducted by the Ante-Natal Care Group demonstrates the problems of service planning and evaluation with action having to be taken within certain constraints of both finance and manpower in addition to constraints of inadequate channels of communication. These constraints are now discussed in more detail.

### 3 Constraints and Problems

Three types of problems were identified as adversely affecting the functioning and effectiveness of the Ante-Natal Care Action Group. First, "operational" problems, which concerned the constraints imposed upon the Group by lack of resources, time, money or manpower, in addition to the changes in the Group's membership which affected the cohesiveness and the group dynamics. Second, "orientation and task determination" problems which concerned the difficulties of the identification of future work and investigation for specific projects of the Group. The historical conditions for the establishment of the group had to some extent pre-determined the areas of interest and operated as a restrictive barrier to development of the group into other areas. Third, "communication" problems were identified, which concerned the relationship of the Ante-Natal Group to other regional groups working in similar areas concerned with perinatal mortality, for example, the Regional Perinatal Mortality Working Party and the Preparation for Pregnancy Working Party (the author was unable to study these groups).



These were a problem for the functioning of the Group because knowledge was fragmented as there existed no clearly defined channels of communication between these Working Parties and the Group. Thus, a lack of cross pollination of ideas between members of other Regional Groups affected the work of the Group.

The Ante-Natal Care Action Group was one of RAGs largest action groups. Since 1985 and during 1986, the Group had undergone a considerable change in membership. The influx of new members both coincided with and contributed to a period of confusion in which aims and priorities became blurred. As one member stated:

"The change of membership has caused considerable uncertainty amongst members, with new recruits being unsure of what the group is aiming to do and the direction in which it is moving".

Because of the influx of new members, individuals were unfamiliar with each other and ignorant of each others specific skills, interests and reasons for membership of the group. This affected the cohesiveness and the group dynamics and in turn influenced the effectiveness of the Group itself. In addition to problems concerning the changing membership of the Group, its functioning and 'productivity' was affected by the limitations imposed upon it due to lack of finance, and time constraints. All of the members of the Group were engaged in full-time occupations within the Health Service, so the time which they could contribute to the Ante-Natal Care Action Group was limited. Some members attended the group because it was part of their work (for example the research and evaluation officer for RAG) and where this was the case, the time which they had spent was costed and paid for out of the ante-natal care budget. (This usually applied to the literature review work for projects, conducted by the member of the Group working at the West Midlands Regional Operational Research Unit). However, the majority of members allocated their leisure time to consider reports, write proposals and initiate ideas.

Financial constraints were also an important consideration when examining the effectiveness of the Ante-Natal Care Action Group. The allocated budget for the group was a mere £5,000 from the Regional Advisory Group's total budget for allocation of £138,000 for 1986. The commissioning of work was therefore very limited and this was a major constraint.

The combination of external restraints, such as limited resources both financial and manpower combined to have a profound effect upon the functioning of the group. The formal structure of the group working through a Chairman inhibited free discussion and exploration of individual ideas, thus the formation of sub-groups was necessary.

Another problem concerned the orientation and task determination of the Ante-Natal Care Action Group which was the result of several factors. The Group formed as a direct result of the Short report (as mentioned above) (1980) and it was later made into one of the eight Regional Advisory Action Groups. Its terms of reference had therefore been defined eight years previously. Due to the subsequent development of other Regional Groups such as the Regional Perinatal Working Party, the Preparation for Pregnancy Working Party and the Primary Care Group, the Ante-Natal Care Action Group found itself sharing similar interests with these other groups. The effect of this was that care was necessary in order not to initiate projects or commission work which was already being conducted elsewhere by the other groups.

In the identification of projects to be initiated and work to be conducted it was important for there to exist a sound understanding of the Group objectives and thorough investigation of various alternatives to reach these goals. Increasingly however, the Ante-Natal Care Group found it difficult to identify its aims and objectives. Contributing to this situation, was the high proportion of new membership previously discussed and the conditions and events which prevailed when the Group was first established which shaped its development. In addition, due to the nature of the Group's

"advisory" role, it was recognised that recommendations concerning good ante-natal care practice could be made, but, by definition the Group could not enforce any of these recommendations. Thus in a highly bureaucratic organisation such as the NHS, this could be seen as a major problem which other Advisory Groups also faced.

The third problem constraining the work of the Group was the lack of effective channels of communication and co-operation between other Regional Groups working in the same field of health promotion and education for the reduction of perinatal mortality. The working relationship with other groups was rather poor with weak channels of communication. This problem was not confined to the Ante Natal Care Action Group but tended to be repeated in the other Advisory groups. The problem was recognised by the WMRHA and was being tackled by encouraging key members of each advisory group (usually the Chairperson) to attend other groups in an attempt for them to increase their awareness of different groups activities, which could then be reported back to their own group. This, it was hoped, would reduce the duplication of work and promote the transfer of knowledge.

Decisions made by the Groups were taken on an 'ad hoc' basis, rather in line with Simon's (1957) 'administrative man' theory where rationality is severely bounded by an individual's perceptions. This implied the so called 'garbage-can model' of decision making developed by March and Olsen (1976) with alternative courses of action being followed independently of objectives.

The decisions taken by the Ante-Natal Care Action Group were only loosely related to the original goals of the Group when it was established in 1976. The Group recognised the problems and held an Internal Study Day in March 1986. The aim of the Study Day was as follows:

"to give current members of the group (many of whom were new) an opportunity to redefine the objectives of the group, set key tasks for the year ahead, whilst at the same time presenting an opportunity for members to

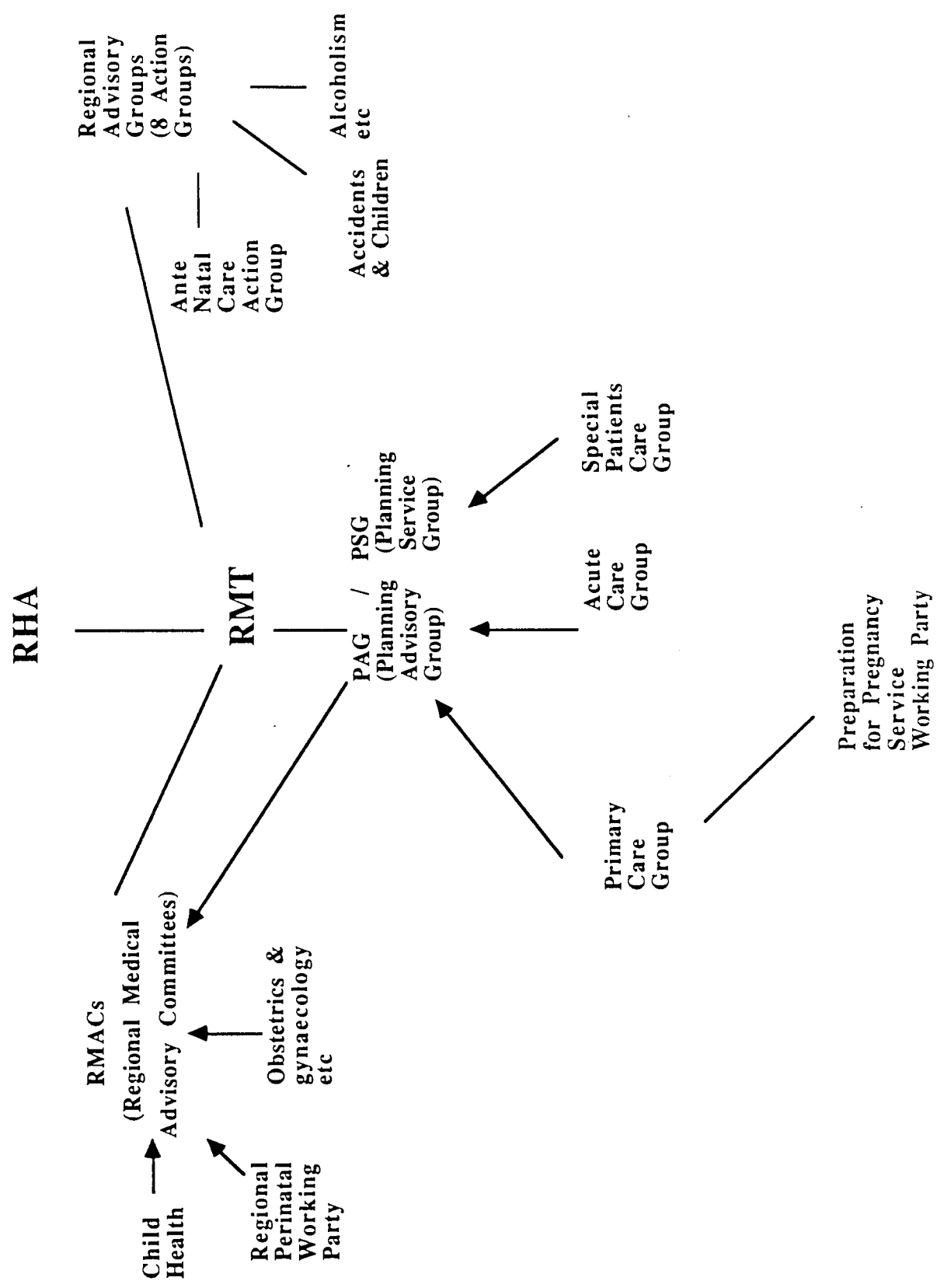
find out more about each others skills".

It was agreed by the members that:

"In order to work together we must all look at where we think the group can go and formulate an agreed strategy for the future - or at least, start to agree where we want to go; so we can go forward in a positive way".

Figure 8.1 demonstrates the complex networks of communication which existed for the various advisory groups which operated within the West Midlands Regional Health Authority. There was a need for the work of the Regional Advisory Group on Health Promotion and its eight action groups to be fed into the planning system. An attempt was being made to do this by using the existing well established networks of communication. The administrator of the Primary Care Group was currently working with the Planning Advisory Group to achieve this goal.

It is evident from Figure 8.1 that the Regional Advisory Group had no formal mechanism for communication with other advisory groups and may be regarded as rather a fringe group. This had been identified as the result of the historical development of the action groups. Each Action Group had developed in its own idiosyncratic way. Recently, however there had been an increasing move towards a common aim to help to unite all the Action Groups. Two initiatives had begun to be undertaken by the planning department in RAG. Namely, that of encouraging Action Groups to submit proposals of future activities and also to publish these programmes of activities to increase awareness by other groups of the work which RAGs Action Groups were conducting. Forward planning and exchange of information were thus two very important ingredients for the process of reaching the desired objective of evaluation and promotion of health education initiatives. Thus, some problems were identified by the Group, and methods proposed with which to overcome them. It must be recognised though, that the Ante Natal Care action group did not suffer from these problems in isolation, other groups experienced similar problems. In Chapter Seven, the interviews with District Health Education



Officers, highlighted the problem of poor communication networks which were also identified as a problem.

#### 4 Discussion and Conclusion

Pre-conception care work, undertaken by the Ante-Natal Care Action Group has been limited, largely as a result of some animosity and hostile reactions from other Regional Groups, particularly from the Preparation for Pregnancy Working Party (which however was disbanded in 1986). This was a group which was established as a result of the Regional Report on Perinatal Mortality (1983). It was established as a working party to promote pre-conception care services. It was disbanded because it was considered to have fulfilled its initial function when the Walsall pre-conception clinic opened. A request was made to the Ante-Natal Care Action Group for funding, for the purchase for each district, of three Preparation for Pregnancy packages and a booklet outlining the pre-conception care work, (developed by the Health Education Department in the Bromsgrove and Redditch District). This request was made by the District Medical Officer for Walsall and the DHEO for Bromsgrove and Redditch members of the Ante-Natal Care Group however, criticised the Preparation for Pregnancy packages and slides because it was felt that they would not be relevant to all districts. Some districts for example had specific problems, social characteristics and varying ethnic minority composition. Members suggested that although the Bromsgrove and Redditch pre-conception care scheme, was a good example of a locally based health promotion initiative, it was decided, that it had limited value to be used regionally. The Group decided that only a few pre-conception care packages would be purchased to be developed within other Districts to make the material more relevant. Thus, this served as an important illustration of the problems of the development of health education materials.

Analysis of the work conducted by the group demonstrated that the work was mainly involved with the investigation of existing services of ante-natal care and with the identification of good practice to be used across the region. The activities discussed, showed that the Group operated within a number of constraints, and its activities were affected by the work of other Regional Advisory groups and of other statutory and voluntary agencies. Examination of the internal organisation of the Ante-Natal Care Action Group and the internal dynamics, highlighted the existence of a number of constraints, for example the lack of knowledge of new group members which affected the Group from within. The communication network between existing RAGHP, action groups as well as between Planning Groups was seen to be undeveloped and ineffectual. The investigational activities of the Ante-Natal Care Action Group demonstrated the problems involved in reaching the objectives of the Regional Advisory Group on Health Promotion. The evaluation of health promotion activities and the attempts to harmonize health educational and preventive medicine campaigns, were particularly difficult where there existed problems of obtaining accurate information.

It has been argued in Chapter Six that the recent re-organisation of the National Health Service following the Department of Health and Social Security Management Inquiry (1983b) has had a profound affect upon the planning of future health services and of the evaluation of existing services. It was also suggested that in times of uncertainty, with the re-organisation of the NHS, new services of pre-conception care would be unlikely to be provided. The participant observation of the Ante-Natal Care Action Group seems to confirm this view. The researcher was disappointed by the constraints placed upon the group. It was chronically under-funded and lacked clear direction. To a considerable extent it was a victim of the very bureaucratic structure within which it operated. The Group took decisions to evaluate existing services, to

identify good practices and to find further qualitative data to support already collected quantitative data to improve the richness of their information base. Thus, the decisions taken were not dynamic, the period was defined as a period of consolidation with decisions being of an incremental nature, changes made to existing services rather than new plans being implemented. The author's participant membership of the Ante-Natal Care Action Group thus gave an insight into the practice and politics of health promotion and health education. Such findings would not have been possible by a review of the literature.

It is suggested that it is unlikely that a national or even a regional pre-conception care service will be feasible, given the lack of methods and criteria by which such a service can be evaluated and the rivalries and divided interests at work within the Health Service.



## CHAPTER NINE

### CONCLUSIONS

This final chapter begins with a brief summary of the objectives of the study. Some of the restrictions on the research undertaken are considered and a retrospective examination of the research methodology is made. The research findings are interpreted and discussed. The next section presents a broad comparison of the West London pre-conception care clinic and the Foresight pre-conception care clinic. Special attention is paid to the implications of the findings for the Foresight organisation, and for the future development of pre-conception care services generally. This chapter concludes with some observations regarding the direction of future research.

It is important to note that the amount of data on Foresight couples is very limited (for the reasons discussed in Chapter Two). In view of this, the conclusions drawn and recommendations made are necessarily somewhat tentative. However, it is hoped that these conclusions represent a genuine contribution to knowledge in what is a little-researched yet rapidly-developing area of health education.

## 1 Research Objectives and Methods Reviewed

This study originally set out to evaluate the effectiveness of pre-conception care for the reduction of birth defects by an examination of the efficacy of the Foresight pre-conception clinics. In view of the limited data received from Foresight clinicians, the project was modified to adopt a broader approach, namely an examination of some of the current provisions of pre-conception care and an investigation of the views of the providers. This included those working within the Foresight organisation but also providers working within the National Health Service. The original objective of the study was to provide quantitative evidence to show that the pre-conception care provided by Foresight clinicians was valuable and necessary for a successful outcome to a pregnancy. It was therefore essential to standardise clinicians' procedures and their provision of services in order to produce a uniform and analysable data base concerning the patients who attended for pre-conception care. Examination of the questionnaires and documentation returned by Foresight clinicians showed that there was no possibility of working from a uniform data base, as this was just not available. Investigation of the clinic procedures adopted by the Foresight clinicians demonstrated that there was no standardized approach and pre-conception care was provided in a rather ad hoc manner. The formal procedure advocated by the Foresight Organisation was not, in most cases, being followed. At this point, a year and a half into the project, it was clear that it would be impossible to derive a thesis using the original research design. It was decided, in consultation with the author's academic advisers and the Foresight organisation itself, to "broaden the approach". The task of building up a data base from clinicians' returns was continued in the expectation that a future researcher would build on the data and, hopefully, eventually amass enough information so that the quantitative analysis which Foresight wished to have done would be completed. The "broadening" of the research included the following aspects which were not part of the original research design - interviews with some of the Foresight clinicians; a study of the pre-conception care service at the West

London Hospital; interviews with health professionals in the West Midlands Regional Health Authority. Before considering how the research approach might have been different it is necessary to examine the practical constraints that were placed on the research process and which influenced what could be achieved.

The Foresight pre-conception clinics were fragmented in their philosophies and their geographical location. The different views held by the Foresight clinicians and the pressures (time, financial) under which they worked, meant that the protocol (which had been developed by a small group of Foresight clinicians working with the researcher) was not followed by more than a handful of the clinicians. As the Foresight clinics were scattered throughout the country, the clinicians rarely had the opportunity to discuss with each other the various aspects of pre-conception care work. In some cases it seems that clinicians were in frequent telephone contact. However in the main clinicians tended to work in isolation. This was especially a problem for the clinicians who were relatively unfamiliar with pre-conception care and might have only recently decided to operate Foresight clinics. Although most clinicians began clinics only after discussions with Mrs Barnes, the founder of Foresight, many did seem to lack the regular contact with the "Foresight system".

If more time had been available, it would have been most useful to have interviewed patients attending for pre-conception care. This would have given, at the least, an indication of the "customers" expectations, feelings and the like. However, the re-orientation of the project after the initial disappointment involving the lack of data coming from the clinicians meant that only limited time remained. In any event, the study became a review of some of the present provisions for pre-conception care and it may be that research focussing on patients' perceptions, etc, would more usefully be the subject of a separate study.

## 2 The Foresight and West London Approaches to Pre-Conception Care: A Comparison

It was considered that a comparison of the pre-conception services at the West London Hospital with those provided by Foresight clinicians within their own practices would be of interest in order to identify the differences existing between public and private pre-conception care services. Examination and comparison of the views held by those who were providing these services illustrates contemporary approaches to pre-conception care and the ways in which those approaches differed. The material in Chapters Four and Five indicates that the services which were being provided to prospective parents reflected, to some extent, the "philosophies", attitudes and beliefs of the providers. This variation is hardly surprising, for there are few established guidelines for a pre-conception service, individual clinicians provided a service largely based upon their own knowledge and perceptions of what such a service should include.

This comparison of the provisions examines the organisation of the services, the tests which were offered and the advice which was given to prospective parents attending the clinics. Comments of the providers on the future of pre-conception care are considered. Finally, comparison is made of the backgrounds of the patients who attended the West London clinic and those attending the Foresight clinics.

### (i) Organisation

The West London pre-conception clinic was a smaller, "tighter" operation than the Foresight clinics. At the West London, the service was provided in one clinic under the direction of the consultant in charge of her small team of midwifery sisters. The very nature of the Foresight service was that it was dispersed. The Foresight pre-conception clinics were provided by some 35 clinicians (although Foresight believed more clinicians were involved). These were encouraged and often advised by the Foresight organisation, but not under its direct control, and they thus lacked the

"unity of approach" of the West London providers. The Foresight clinicians were involved in pre-conception care in addition to their normal practice work which, for some doctors, involved them using a range of "alternative" techniques such as applied kinesiology, acupuncture, homeopathy and various other practices. The West London Clinic was a "centralised" service with its staff interacting and holding frequent meetings. The Foresight organisation tried to integrate and unite the clinicians via their newsletters, informal contacts and the use of a protocol, but the evidence presented in Chapter Four demonstrates that these attempts had been only partially successful. Foresight clinicians had a variety of approaches to pre-conception care.

Both services had developed protocols to unify their approaches and to standardise data collection. The protocol developed in the West London clinic was an attempt to assist the midwives who had volunteered their services as and when they could free themselves from other duties. Similarly, the Foresight protocol was developed in an attempt to ensure that doctors, especially those joining the research in its later stages, had some guidelines to follow. In addition to the development of protocols, both services developed questionnaires for prospective couples to complete in an attempt to collect information in a systematic way (see Appendices 1.3 and 2.1). A comparison of the questionnaires used at the two services shows that the Foresight questionnaire was far more complex and lengthy and concentrated largely on nutrition and dietary aspects. The questionnaire developed at the West London clinic devoted a large section to seeking information on the reasons why the couples were motivated to attend the clinic. There were some similarities between the questionnaires - both allowed for the examination of the couples' past medical histories and the women's past gynaecological and obstetric histories. The questionnaires both investigated various aspects concerning the lifestyles of the couples which included questions on their diet, whether they smoked or drank and what contraception methods the couple had used in the past and were currently adopting.

As at the West London clinic, those attending the Foresight clinics could be divided into two groups. The first had experienced previous obstetric problems and the second group comprised couples who were just cautious and wanted to attend a clinic for a thorough screening. Many of the women in this latter group were "career women" who had postponed having children and were now in their mid 30s.

The social backgrounds of those who attended the two clinics were very similar, in that most were from professional backgrounds. The majority of the Foresight clinicians, 15 out of the 25 interviewed, saw their patients as being overwhelmingly middle class, though not always well-off. A typical comment from a Foresight clinician was:

"They're not necessarily that wealthy. They're mainly middle class. Oh yes, definitely. Most of my practice is middle class".

A Foresight clinician in the north of England described his patients slightly differently however:

"No they're not really middle class, but they're not all coming from the council estates. It's a young thinking generation, which is not necessarily rich, but they've had an education of sorts".

Even though the West London clinic was not situated in a particularly affluent catchment area, the majority of those who attended for pre-conception care were middle class, too.

The patients attending both the Foresight and the West London clinics, not surprisingly, given that they were a self-selected, highly motivated group - were prepared to travel in order to receive care and advice, and they often came considerable distances. They were of a similar age range, the majority of the female attendees were in their mid-twenties to mid-thirties. Comparison of the life styles of patients attending the two clinics highlights that those attending the Foresight clinics had a rather lower intake of alcohol and use of nicotine. For example, six out of the 25 Foresight

clinicians commented on the healthy life styles which their patients had adopted prior to attending the clinic. This is not surprising, perhaps, when one remembers that many of the patients attending for pre-conception care had previously experienced obstetric and gynaecological problems. They were perhaps therefore very interested in looking after themselves even before attending the clinics for more specific advice.

Both groups attending for pre-conception care were said by the providers to be highly responsive to the advice given. A comment made by one of the Foresight clinicians illustrates this well:

"I think it's a luxury that most people who come are enthusiastic".

The nature of the pre-conception care service being provided at the two clinics was dependent on a number of factors. In the case of Foresight the particular interests and philosophies of the clinicians was perhaps the most important factor, whilst at the West London clinic its "unofficial status" and limited financial provision loomed large. A comparison of the Foresight and West London protocols must take account of the fact that the clinics were operating within their own particular constraints. For example, the West London clinic was operating "unofficially" within the NHS and did not have funds available for a full array of screening tests to be conducted. However, the Foresight clinicians, who were predominantly operating within the private sector, were also subject to constraints. They were well aware of the limited financial resources of many of their patients and this often limited the clinicians willingness to recommend all the tests they would ideally wish to see carried out.

(ii) Tests and Advice

The West London clinic offered a number of tests, discussed in Chapter Five. They did not offer hair analysis or sweat analysis. However, 23 out of 25 Foresight clinicians interviewed, used hair analysis for metal status assessment and nine also

used sweat tests. The staff of the West London clinic had mixed views about the value of hair analysis, some thought that it should be made available, whilst others expressed doubts as to the value of any screening tests and preferred to concentrate on the provision of counselling and dietary advice. Some Foresight clinicians also expressed doubts as to the value of the screening tests and this included criticisms of hair and sweat tests (this is discussed in detail in Chapter Four). The general consensus by the clinicians was that hair analysis had limited value and was only useful for the detection of toxic metals levels. This feeling was not reflected in their practise, however as 23 out of 25 clinicians interested used hair analysis tests! A typical comment made was the following:

"In isolation I don't think it's worth very much. It's very difficult to make sense of the hair analysis in isolation from other tests".

This comment from a Foresight clinician was echoed by one of the West London clinic staff.

"I'm concerned that the people who are using it (hair analysis) don't always know what they're looking for, and if they do know which elements they're looking for, they don't quite know how to correct the imbalances. There's not an awful lot in the literature which can advise people".

Similarly, some Foresight clinicians expressed concern as to the value of mineral and vitamin supplementation. It was suggested that it was more fruitful to give advice concerning general dietary improvements. One clinician commented:

" ... If you are deficient in four or five things, you're either not eating a good diet, and I know what their diets are like from what they've told me or if their diets OK, it's because they're not absorbing things. So it's a total waste of time pouring loads of vitamins and minerals into somebody if they're not absorbing anything".

The value of hair analysis and the use of mineral and vitamin supplementation in pregnancy continue to be debated within the medical profession. The Foresight clinicians provided the opportunity for their patients to have these tests conducted if they



wished but expressed reservations about the use of tests and of the problem concerning the costs of the tests to be conducted.

The providers at both West London and Foresight clinics stressed that examination of the diet consumed by their patients gave an excellent indication of the health status of the individual. The Foresight clinicians made it clear that a great amount of time was spent with their patients discussing this issue and the West London service counselled individuals on the ways in which improvements to the diet could be made. Both placed great emphasis on the importance of sound nutrition in preparing for pregnancy. This was an area where patients could readily take action and most were very motivated to make changes. One clinician commented:

"I think nutrition is the big one to crack. You've got very few people on your side in government and in political circles who see nutrition being used as a preventative against disease ... There's a definite line that comes between the orthodox saturated fats are bad for you type of thing, and something much wider like the naturapathic concept of nutrition and detoxification and not getting enough oxygen and raw materials to the blood. There's a credibility gap somewhere in there. Now ortho-molecular medicine bridges that gap because its got its roots in scientific medicine but its also going much more into the idea of individualising people's nutritional needs, but not going as far in terms of detoxification in dieting and fasting and that sort of thing which is naturopathy".

Both sets of providers stressed the importance of providing a pre-conception care service designed to meet the requirements of the particular individuals. Foresight clinicians, although using the protocol as a guideline, did not automatically conduct all the screening tests (apart from hair analysis), rather they chose the ones which they felt to be most appropriate. Thus, despite Foresight's attempts to the contrary, a less than "standardised" service was provided. Clinicians commented that it was important to assess the needs of the individuals/couples and to offer the advice which is most likely to be taken rather than applying a strict regime. A typical comment was as follows:

"Sometimes the advice which is offered is a bit too idealistic, and it tends to alienate the patients. I basically try and establish a good rapport with the person, or couple, and try and help them".

It is noteworthy that the staff providing pre-conception care services in both cases stressed the importance of "not overdoing" the advice given. This was particularly applied in the treatment of the men who attended the clinics. Thus, whilst the concept of pre-conception care embraces the provision of care for men as well as women, in practice the providers of pre-conception care played down the contribution of men in preparation for conception.

In both cases the providers saw as a major problem the time constraints on the service which they provided. It was interesting, however, that the West London philosophy placed considerable emphasis on allowing the recipients of the service time to discuss their problems and anxieties. A member of the West London staff commented that the recipients of the service, having perhaps previously experienced a traumatic birth, needed time to relax and feel comfortable in order for them to receive reassurance - which was possibly the first time that this had happened. As one provider said:

"There's probably a great sadness in the health service, that doctors aren't always the listening people we'd like them to be".

Thus, despite the "unofficial" status of the West London clinic and the "as and when available" nature of the staff provision, the emphasis was on a highly patient-centred approach. The Foresight clinicians equally were well aware of the special needs of their patients, but found time commitment to be a problem. In a private practice time comes to be equated with money.

"... You just can't expect people working in a private practice, which tends to be a shoe-string practice anyway, to justify the time it takes to follow up a research project".

" ... It means either doubling your fees or working charitably for one consultation or it means missing out another patient who could be helped".

Above all the providers conveyed a sense that they were pioneers, with all the challenge and problems that developing a new field and service implies. As has already

been indicated, many of the providers at both clinics expressed considerable unease about the lack of scientific evidence with which to support what they were doing. A typical comment made by a Foresight clinician, was as follows:

"I think it needs to be put on a more sound basis. I mean, there's an incredible resistance from the establishment to this sort of thing because they're saying 'what's your evidence' and I find it embarrassing in a way because one is having to talk in very broad terms, that is, doesn't it make sense that if your fitter and better, therefore your children will be healthier. This is the crunch. And the problem is, of course, that you're dealing not with just one parameter, you're looking at an entire biological system, therefore the improvement in nutrition is only a part. It's an important part, involved with an enormous number of factors".

The original aim of this study was to set up a large data base which might provide some sound scientific evidence to establish the "Foresight approach" more firmly. For the reasons described in Chapter Two, this objective could not be realised. The very detailed, specific procedures advocated by the Foresight organisation were the subject of some criticism by the West London providers:

"I think that their basic idea is very good and that they have done a valuable service in alerting us to the need for pre-conception care".

... I think that some of the information isn't proven, I can't believe in everything they say".

Such criticisms placed the researcher in an embarrassing position, as she was working in conjunction with Foresight and it was necessary to attempt to "distance" herself from the organisation, as far as non-Foresight respondents were concerned.

It was not only at the West London Hospital that doubts about the "Foresight approach" were expressed. Some of the Foresight clinicians themselves felt that the Foresight organisation needed to do more investigate and validate the tests they advocated. Four clinicians in particular felt that more needed to be done to validate the sweat tests, the zinc taste test and the value of vitamin analysis. Other Foresight clinicians felt that pre-conception advice should be strictly limited to known facts and to the existing evidence. One clinician, for instance, questioned Foresight's advice to women to have coils removed at least six months before trying to start a family.

"So what's the evidence? Now of course, you've got to be very careful as to how you analyse the information. I mean, who am I as a simple GP, do I believe Foresight or do I believe the Family Planning Association?"

The majority of the Foresight clinicians stressed the need for advice to be given to prospective parents based upon "sound scientific evidence", a view which corresponds closely with that held by the staff at the West London clinic. The problem, of course, is that the "evidence" is subject to considerable controversy.

(iii) Developing Pre-conception Care

The providers of pre-conception care services both at the West London Hospital and the Foresight clinics had similar views about the question of the establishment of a national pre-conception care service. The staff at the West London envisaged a community based service with the primary health care team as the providers. A specialised hospital based service, it was suggested, should be set up only for referral for more complicated cases. Several Foresight clinicians expressed the view that pre-conception care should offer only general advice and criticised their present service for being too specific. One clinician commented:

"Pre-conception care is increasing awareness across the whole board. Dealing with the major things like smoking, alcohol, rubella and anaemia, rather than dealing with, what are in my opinion, minor things such as toxic metals".

The uncertain status of pre-conception care was seen by many respondents as a problem. Several Foresight clinicians emphasized that pre-conception care needed to gain acceptance from the medical profession; some indeed felt that in the Foresight organisation's present form, it was going to be very difficult to achieve this objective. Operating as a "pressure group" outside the mainstream of medicine, Foresight has found it difficult to get its views across to the profession (indeed, as has been indicated the present study was intended to provide acceptable, "scientific" evidence). This is of

course a problem with any pressure group, but the difficulty of persuading conservative bodies such as general medical practitioners and the medical establishment is particularly acute. A Foresight clinician illustrated this problem:

"I think if you're going to try and win over GPs and hospital consultants to the idea of pre-conceptual care, you're not going to do it while there's so much emphasis on things like mineral hair analysis and so on. You're going to get somewhere a lot faster if you're going to push against a door which is already open rather than one which is shut and, at the moment, I don't think doctors are the least bit interested in toxic metals".

Other Foresight clinicians talking about the "Foresight approach" felt that this had a number of limitations. They suggested (as did the West London clinic staff) that pre-conception care should be more general and provided in the community. One Foresight clinician talked of a strategy of "educating" GPs, rather than setting up clinics and using complicated protocols which only reached a small section of the population.

"I think pre-conception care shouldn't be set up like this. If you set it up that in order to get Foresight care you have to go to a particular clinic and pay then you're selecting firstly for income, secondly for a higher degree of commitment and thirdly for a reasonable degree of literacy in that people having heard of it. It would make much more sense to educate GP's because they're the people who are guaranteed to be seeing prospective parents more often than anybody else in the medical profession, and would be in the best position to teach and educate".

Echoing this theme, other Foresight clinicians felt that it would be more useful if basic pre-conception care was provided by GPs and patients were then referred for specialist treatment at the pre-conception clinics. One said:

"I would have thought it would be best if people came to me, having already been investigated. We should operate as consultants rather than as first line primary care.

Another commented:

"My own feelings, is that everything I'm doing should really be provided by the GPs, within some sort of overall insurance scheme or through the NHS, whichever systems going to be adopted. It shouldn't be something which is only available to a small section of the population".

In contrast, a small number of the Foresight clinicians were apprehensive of the idea of pre-conception care being provided by GPs and the primary health care team. One clinician with this view commented:

"I don't see any consultants would touch it, I'd be very surprised at many GPs doing it, nor would I think midwives would be interested in it. However they totally lack any knowledge of nutrition. If you are going to do pre-conception care the present way it is, if you take it away from just being don't smoke, don't drink, don't do anything naughty then you're going to have to have people who know their way around orthodox nutrition and also molecular nutrition. I think you need to know both".

Another comment was as follows:

"The trouble is ... if we are really going to try and help somebody about their diet and nutrition, you have to know what you're talking about to try and tempt them to change and I feel very ignorant that I know a great deal more than the average GP or health visitor".

Thus, the fear was that members of the primary health care team would not necessarily be knowledgeable enough to give sound nutritional advice. Having examined and compared the views of those providing pre-conception care at the West London and the Foresight clinics, it is now useful to examine the debate concerning pre-conception care.

### 3 The Debate on Pre-conception Care

A review of the research concerning pre-conception care indicates that there seems to be need for special care and advice for some individuals who are "at risk" of having a poor pregnancy outcome. For example, if the woman is over 40 years old there is increased risk of having a Down's syndrome baby or, if she is an insulin dependent diabetic, there is an increased risk of congenital abnormalities (Chamberlain, 1984). There is still debate as to whether pre-conception care should be made available to everyone of fertile age, or whether it should merely be reserved for those individuals "at risk". Chamberlain cautions that:

"... the bandwagon of pregnancy care for all, as opposed to those with special needs, could drag the medicalisation of pregnancy and birth backwards to cover conception as well. (1980)

Recent critics of the concept of pre-conception care include Rodmell (1983), (1985); Stewart, (1985) and Corbishley, (1985). Their view is that the messages of those promoting pre-conception care, that is to follow a balanced diet, to avoid known hazards and to follow a healthy life-style should be regarded as important for everyone and should therefore be part of the general health care of individuals throughout their lives, not merely targetted at those preparing for pregnancy. It must be recognised, however, that pregnancy is a time during which mothers to be are willing to make lifestyle changes concerning their diet, nicotine and alcohol consumption. There is a danger, however, that if these messages are internalised then guilt becomes an increasing burden if these "bad" habits are continued (see discussion in Appendix Four). Health messages should perhaps be presented in such a way that the advantages of changing one's lifestyle is seen not only for the baby's sake, but also for the woman herself and the rest of her family. "Scare tactics" must be avoided. There is a danger that the establishment of pre-conception care clinics for healthy or moderately healthy "average" couples will make planning for a baby a "problem orientated" exercise (see earlier discussion on the medical model of health presented in Chapter Six). This adds to what is an already pathological "problematic" view of pregnancy and childbirth, in our society instead of it being seen as a part of normal life.

Childbirth has become an extremely technical process perhaps decreasing the joy for many couples. There is agreement in the literature that special pre-pregnancy care is necessary for some individuals who, for example, have problems in conceiving or carrying a baby to term or other difficulties of this kind. However, as has been shown, a debate exists concerning the type of provision, should pre-conception care consist of general health education messages or should it involve detailed screening tests with the use of vitamin and mineral supplementation to alter individuals biochemical status (the Foresight approach)?

A further problem with the concept of pre-conception care and supported by the author has been made by authors such as Stewart (1985) and Rodmell (1983). They argue that the claims made for pre-conception care serve to falsely raise the expectations of couples who have previously suffered a pregnancy loss. These expectations cannot always be realised. Rodmell goes on to suggest that perception of what constitutes 'preparation for parenthood' (ie. motherhood) held by the health professionals is very middle class and sometimes moralistic. There is a danger of encouraging the creation of the "fit" and the "unfit" (ie. those suitable to be parents as defined by the middle class professional). Rodmell's argument runs on as follows: we hold within us a set of stereotype expectations of the "fit" and the "unfit". In the stereotype of the 'fit', prospective parents will think ahead, form a stable heterosexual union, use 'safe' contraceptives (not the pill), eat healthy foods and above all care more about their future offspring. On the other hand 'unfit' parents will act on impulse, behave promiscuously, use no contraception, eat junk food and live for today. Pre-conception care services have the potential to widen inequalities in health by polarising women and parents into the 'adequate' and 'inadequate'. This is perhaps an over exaggerated, rather sensationalist viewpoint. However, this writer feels that it can be argued that the Foresight Organisation's approach to pre-conception care does have moralist and middle class over tones. This is demonstrated by the following quote from a Foresight Committee member: "Many concerned future parents are aware and ready to work for the better health of their children" (Jervis, 1985). The problem with categorising parents in this way is, of course, that it tends to ignore the constraints to which people's lives are subject - constraints of class, income, education and so on. "Healthy" diets tend to be quite expensive - so is supplementation with vitamins, etc. And, for the mother or parents "under pressure" from inadequate housing, lack of employment or whatever, smoking or drinking alcohol represents a "crutch" which is not easily given up.

Social class is identified as important in the determination of health status and life chances according to numerous sources, eg. Klein (1974), Stacey (1977) and



Whitehead (1987). It is well known that social class is an indicator of who will attend for health care, as this has clearly been shown in the assessment of attenders of ante-natal care provisions. If a comprehensive pre-conception care service is to be provided, it is likely to be modelled on our existing family planning or ante-natal care provisions. Therefore, it is useful to examine the current ante-natal services and to consider whether there is a need for the introduction of a whole new provision of pre-conception care. The view of many authors writing on the ante-natal care services is that the services are inadequate and even inappropriate for the purpose for which they have been developed.

An extensive literature exists on ante-natal care recent writers include Hall et al (1980), Newcombe & Chalmers (1981), Snowden and Mitchell (1983), and Oakley (1984). Examination of the provisions have led to the conclusion that there has been an increase in the medicalization of childbirth, with ante-natal care services organised in a "production line" manner. Recent moves to increase hospital centrally based services have exacerbated the existing problems of access, especially for women living in rural areas or some distance from the hospital. With increased use of technology and with a move away from home confinement to hospital confinement midwives have lost control and increasingly consultants and doctors are taking over. Oakley noted the following observation of a doctor she was interviewing:

"The maternity services have become a battleground for GPs and consultant obstetricians in their struggle for power; so that the safety of mother and child have become of secondary importance". (Oakley, 1984).

The development of ante-natal care services and the value of such services have been reviewed in a study conducted by Hall et al (1980). Examination of the case records of 1907 women in Aberdeen who had babies delivered in 1975, prompted the researchers to question the value of routine ante-natal care. They argued that there was no sound basis for holding ante-natal clinics at weekly intervals. They considered the birth outcomes of women attending for ante-natal care, the extent to which certain items

of a woman's medical or obstetric history were actually picked up at the hospital booking visit, and they also noted the capacity of subsequent visits to diagnose accurately important ante-natal conditions (intra-uterine growth retardation, foetal malpresentation and pre-eclampsia). Results showed that many relevant obstetric factors recorded by the midwives at the booking visit were not perceived or acted upon by the obstetricians. They questioned the value of the use of 'risk-prediction' with the adoption of scoring systems because many obstetric risks appear to be unpredictable. The Aberdeen research had significant impact on ante-natal care practices with the introduction of a new ante-natal scheme (visits for normal multigravida have been restricted to five and there has been a greater use of midwives and peripheral community clinics). These results are interesting as they indicate the existing problems with a formalised service which has been provided for almost a century. Little work has been conducted in the evaluation of ante-natal care provisions and therefore one may reasonably question the value of the introduction of a whole new provision of pre-conception care.

The Report of the Royal College of Obstetricians and Gynaecologists (RCOG), Working Party on Ante-natal and Intrapartum Care in 1982 suggested no more than five ante-natal visits for normal low-risk women. The Report said that only by reducing attendance could the necessary social and organisational improvements demanded by the 'consumer' in the running of ante-natal clinics be carried out. This recommendation reflects some of the more recent innovations in ante-natal care with attempts being made to introduce community based clinics and more 'user sensitive' clinics. This lengthy discussion of ante-natal care is important as it serves to illustrate some of the problems which exist concerning our existing maternity provisions and illustrates the potential problems which might arise with the introduction of pre-conception care.

A Regional Perinatal Audit study now being conducted in the West Midlands indicates that the ante-natal care received by some mothers has been unsuccessful in terms of the prevention and detection of high risk pregnancies (Gyde, 1987). This supports the Aberdeen study and indicates the limitations of the "medical" approach.

The most trenchant critic of this approach has been Ivan Illich, who has written:

"The medicalization of life appears as the encroachment of health care on the budget, the dependence on professional care, and as the addiction to medical drugs; it also takes form in iatrogenic labelling of the ages of man (sic). This labelling becomes part of a culture when laymen (sic) accept it as a trivial verity that people require routine medical ministrations for the simple fact that they are unborn, newborn, infants, in their climacteric, or old ... The doctor's grasp over life starts with the monthly pre-natal checkup when he (sic) decides if and how the foetus shall be born; it ends with his decision to abandon further resuscitation. The environment comes to be seen as a mechanical womb and the health professional as the bureaucrat who assigns each to his proper corner". (1977, p40).

#### 4 Towards a National Pre-Conception Care Service

The provision of a national pre-conception care service would bring with it the dangers of "medicalization" of which Illich writes - the cautious approach of the Foresight clinicians and the staff at the West London Hospital (referred to in Chapters Four and Five) shows how they, too, are aware of the dangers. It is, perhaps, a poignant finding of the research that the Foresight clinicians, for the most part, were so very much more cautious in their approach to pre-conception care than the Foresight organisation itself. The poignancy is even more clear when it is remembered that the principal objective of this research was to provide "hard", quantitative data which would back up Foresight's philosophy and recommendations on testing and supplementation. It was with some regret that the researcher recorded the doubts and criticisms of some of the Foresight clinicians about the "Foresight philosophy". All, however, clear about the need for pre-conception care advice - it was the detailed approach of Foresight about which doubts existed.

As has been indicated, the Foresight pre-conception care was provided in private clinics so that - for the most part - only those able to pay for the advice and screening tests were seen. The Foresight protocol was not closely followed, in most cases and the services tended to be ad hoc, largely reflecting the knowledge and special interests of the clinician. The patients attending these clinics were described by the clinicians as "white

and middle class", interested in health and tending to consume small quantities of alcohol and nicotine and having generally a good diet. The Foresight clinicians were not happy about the narrow segment of the population they saw. Several expressed a view that they would prefer their provision to be available to a wider range of people. However, the nature of the "Foresight operation" meant that access was restricted.

The study of the West London Hospital pre-conception service showed similar findings. The West London clinic staff also expressed doubts and misgivings concerning the value of their service (as shown in the previous section). Whilst it was a National Health Service clinic, with "open door access" it was largely the white middle classes who attended for treatment and advice. The limited impact of this clinic can be traced to its "unofficial" status - the service was established as a result of key influential individuals; rather than out of the formal planning process. The clinic was originally established as a pilot scheme to evaluate the effectiveness of a pre-conception care service. The subsequent closure of the clinic was due to a change in circumstances (the Professor of the Department retired and the consultant in charge left), as much as to the result of the evaluation. The study of the West London clinic gave an excellent insight into the trials and tribulations of attempting to provide a new health service provision within the constraints of the National Health Service. One wonders whether the costs of providing the pre-conception service would have been met even had the service been evaluated as a necessary and important provision to achieve the reduction in birth defects and other problems?

Interviews with District Health Education Officers reflected the tentative views on pre-conception care of the Foresight clinicians and the West London clinic staff. All of the officers expressed their concern and scepticism over the lack of a scientific foundation for specific detailed programmes. A further criticism was seen as the way pre-conception care tended to focus on the individual, thus ignoring the factors, social, economic and environmental which serve to constrain individual behaviour. Several of the DHEOs pointed out that people attending private pre-conception clinics were perhaps

those least in need of such advice on diet and the need for behavioural lifestyle changes. People in social classes III, IV and V were seen as those least likely to elicit pre-conception care advice or to act upon it, yet they were more in need of such advice than people in higher social class groups. The suggestion that pre-conception care promotes guilty feelings within mothers who continued to smoke, drink or engage in other "unhealthy" behaviour was also acknowledged by Foresight clinicians, West London Clinic staff and by the DHEOs.

The review of the historical development of the National Health Service demonstrated the power of the medical profession. Due to the structural changes following on the Griffiths enquiry into management in 1982, it was argued that there will be a time of consolidation rather than of innovation. Coupled with the lack of criteria with which a pre-conception care service could be evaluated it is clear that pre-conception care services are unlikely to be established widely in the near future. With the separation of GPs into the Family Practitioner Committee it is more difficult for primary care to be planned by the National Health Service.

Participant observation of the ante-natal care action group demonstrated that little innovative work was being conducted; instead identification of "good practices" and literature investigations tended to be conducted. Observation allowed the identification of one of the major problems of evaluation and planning of services as the lack of efficient and effective channels of communication within the National Health Service.

In view of the rather pessimistic conclusions outlined above, is there a future for pre-conception care? The future seems to lie in the provision of general advice by GPs and members of primary health care teams. It is within a scheme of improved and expanded health education for all that pre-conception care might develop. Such a scheme, community based, would not be wildly expensive or involve proposals for a new "service", which would inevitably attract opposition if only on cost grounds. Specialised, hospital based services would still be needed of course, but only for those patients known to have special needs - testing in a community-based service, for

example, would not be routine. Such an approach is very much less than utopian but perhaps reflects reality both with regard to what might practically be achieved as a national basis and (importantly) the present scientific and medical status of testing and supplementation.

This study has, it is hoped, provided useful information on the views in the 1980s of the providers of the pre-conception care services. This study is a "marker" from which later research might proceed both within Foresight and independently.

The discussion in Chapter Six shows how there is considerable government and public interest in perinatal mortality at present. It is widely recognised that action is necessary to reduce perinatal mortality and research is being encouraged such as the perinatal audit being conducted in Birmingham (Gyde, 1987) to identify the known risk factors for a healthy pregnancy (and therefore avoidable risks). The pre-conception care movement can make use of this interest. A clinically controlled trial is necessary to evaluate the contribution of pre-conception care for the reduction of perinatal mortality. Other studies are necessary to assess the value of existing maternity care services such as ante-natal care. It might be demonstrated for instance that the way existing services are arranged are completely inappropriate for a large proportion of the population who do not attend for care.

Though the original objectives of this research could not be achieved, mainly because of the lack of quantitative data coming from the Foresight clinicians, it is hoped that a useful contribution to knowledge has been made on the current 'state of the art' of pre-conception care and the views of providers. If it is permissible to conclude on a personal note, the researcher has no doubt that she has gained enormously from the wide range of written materials, people and organisations to which she was exposed, from the challenge of re-formulating the research design half way through the study, and from the discipline imposed by the "writing-up" process.

## GLOSSARY

### ABORTION

The commonest cause of vaginal bleeding in early pregnancy is abortion, can be defined as the interruption of pregnancy before the 28th week of gestation after which period the foetus is viable.

#### Fetal Causes

Maldevelopment or disease of the fertilised ovum and in 30 to 40% of spontaneous abortions, first trimester abortions chromosomal anomalies are present.

#### Maternal Causes

Infections, disease, effect of drugs.

#### Local Conditions

Trauma - accidents; violent exercise, stimulation of the uterus such as might be due to some necessary abdominal operation.

Incompetent cervix - abortions occurring at about mid-term may be due to incompetence of the cervix allowing the membranes to rupture.

### ALLERGEN

Allergen is the term applied to any substance, usually a protein, which, taken into the body makes the body hypersensitive or 'allergic' to it. Thus in hay fever the allergen is pollen.

### ALLERGY

This means special sensitiveness of an individual to certain foods, pollens or other products of plants, animal emanations, insect bites etc....., so that in such an individual conditions like asthma, dyspepsia, hay fever, eczema and headache are produced. The substances that produce allergy are generally of protein nature and include such ordinary food as eggs, milk, flour, coffee.

### Symptoms

The reaction in sensitive persons usually appears within a few minutes, but may be delayed for hours. One of the most common effects is nettle-rash or dropsical swelling in various parts; sometimes there is swelling in a joint. Another type of reaction consists of spasmodic contractions of unstriped muscle so that the person affected may become urgently ill with asthma, or may develop spasms in the stomach, or in the intestine with symptoms resembling obstruction or severe diarrhoea or may be troubled by irritability of the bladder.

### Treatment

It is important to find out the food or other substance to which the individual is sensitive. Sometimes this is discovered by long personal experience. Skin testing may also be carried out by inoculating into a series of scratches, extracts of various foods etc., likely to cause allergy, and the substance responsible produces a weal surrounded by redness within a few minutes. Sensitiveness to an ordinary common food, can sometimes be abolished by taking this food constantly in small quantities, very gradually increased. In other, cases particularly of hay fever, it may be possible to desensitize the affected individual by a series of injections of a vaccine made from the substance to which he or she is sensitive.

### **ANENCEPHALY**

This is a severe form of arrested development; the vault of the skull and cerebrum being absent. Increased levels of maternal plasma alpha-fetoproteins and increased levels of alpha-fetoproteins in amniotic fluid have been found in cases of anencephaly at 16 weeks gestation.

### **ANTEPARTUM HAEMORRHAGE**

This is bleeding from the placental site due to premature separation of the placenta after the 28th week of pregnancy and prior to the birth of the baby (the first and second stages of labour are therefore included). Antepartum haemorrhage is classified according to the situation of the placenta, ie whether it is implanted in the upper or lower uterine segment.



## **ANTIGEN**

A protein against which an antibody is formed. Many substances that are not proteins behave as antigens by modifying a protein in the tissues to form a new 'foreign' protein; and thus one can develop allergy to them.

## **ARTHRITIS**

Inflammation of a joint.

## **ATAXIA**

Failure of muscle co-ordination

## **BLOOD**

The fluid that circulates through the heart and blood vessels, supplying nutritive material to all parts of the body, and carrying off waste products. It is a colourless fluid (plasma) in which float myriads of minute bodies (corpuscles). There are three kinds; red and white (in the proportion of about 500:1), and platelets. The red corpuscles or erythrocytes contain haemoglobin which combines with oxygen in passing through the lungs. The oxygen is released into the tissues from the capillaries and oxidation takes place. The white corpuscles or leucocytes defend against invading micro-organisms, which they have power to destroy. Blood platelets or thrombocytes are concerned with the clotting of blood.

## **CAESAREAN SECTION**

Delivery of the baby via an abdominal incision, with the mother under a general or epidural anaesthetic.

## **CARPAL TUNNEL SYNDROME**

Condition in which compression of the median nerve at the wrist causes numbing and tingling in the fingers.

## **CEREBRAL PALSY**

A condition caused by injury to the brain during or immediately after birth. Coordination of movement is affected and may cause the child to be flaccid or athetoid, in which condition he has constant random and uncontrolled movement.

## **CHLAMYDIA**

Is one of the most common infectious agents. Chlamydial infections can have a variety of clinical manifestations and patients with such infections may present to several medical disciplines.

## **CHROMOSOMES**

Thread - like bodies situated within the nucleus of the cell which carry genetic information. Sex chromosomes determine the sex of the individual XX in women, XY in men. Chromosomes not responsible for sex determination are called autosomes.

## **CYSTITIS**

Inflammation of the bladder.

## **DIABETES MELLITUS**

This is due to deficiency or ineffectiveness of the endocrine secretion of the pancreas - insulin. There is polyuria and sugar present in the urine. Treatment is (1) A properly regulated diet to maintain the nutrition of the patient (2) To keep the blood sugar normal by injections of insulin if an adequate carbohydrate intake cannot be taken without.

## **DYSLEXIA**

Difficulty in reading or learning to read, accompanied by difficulty in writing and spelling correctly.

## **DYSMENORRHOEA**

Painful menstruation. Painful contractions of the uterus arise just prior to or at the time of menstruation for the first few hours and then they subside.

## **ECLAMPSIA**

Eclampsia, an acute condition characterised by convulsions and coma, in a more advanced stage of pre-eclampsia.

## **ECTOPIC PREGNANCY**

Fetal development in some other part other than the uterus, most usually the fallopian tube.

## **ENDOMETRIOSIS**

Endometrium (the mucous membrane lining the uterus) in an abnormal situation. Chocolate cyst of the ovary contains some endometrial material.

## **ENDOMETRIUM**

The mucus membrane lining the uterus.

## **EPIDURAL ANALGESIA**

Epidural analgesia is being used with increasing frequency in British obstetric centres to provide continuous analgesia which abolishes (or reduces) the pain of normal delivery.

## **EPISIOTOMY**

An incision made in the perineum when it will not stretch sufficiently during the second stage of labour.

## **FOLIC ACID**

A constituent of the vitamin B complex. Folic acid is a co-enzyme necessary for the red blood cell formation. Folic acid is a water soluble vitamin.

## **FORCEPS DELIVERY**

This is a method of delivering a baby when the mother's condition or the baby's condition require a speedy delivery. Forceps consist of two long curved plates which are inserted into the womb on either side of the baby's head; the handles then lock together, and the baby can be eased out. Forceps are applied only during the second stage of labour.

## **GENE**

The genetic molecule or unit present in the chromosomes of the ovum and spermatozoon, which transmits the inherited factors or characteristics of the parents.

## **GESTATION**

Pregnancy, especially duration of pregnancy. Human gestation lasts on average 38 weeks from conception to confinement, but is more easily measured for the beginning of the last menstrual period as 40 weeks.

## **GLUTEN**

Gluten is the constituent of wheat - flour which forms an adhesive substance on addition of water, and therefore permits the 'raising' of bread. It can be separated from the starch of flour, and being of a protein nature is used to make bread for those diabetics who are debarred from starchy food. It is also responsible for certain forms of what is now known as the malabsorption syndrome. In these cases an essential part of treatment is a gluten free diet.

## **HAEMOGLOBIN**

Is the colouring material which produces the red colour of blood. It is a chromoprotein, made up of a protein called globin and the iron containing pigment, haemin. When separated from the red blood corpuscles that contain it, it is crystalline in form. It exists in two forms : simple haemoglobin, found in venous blood, and oxyhaemoglobin , which is a

loose compound with oxygen found in arterial blood after the blood has come in contact with the air in the lungs. The main function of haemoglobin is to act as a carrier of oxygen from the lungs to all the tissues of the body.

## **HAIR ANALYSIS**

Over recent years there has been a growing interest in the possibility of using hair tissue as a screening material to assess body status of trace elements or exposure to certain toxic metals. Hair tissue is useful in that it contains a wide range of elements (up to 55 have been identified). The method normally used involves the analysis of a small quantity (ideally not less than 0.4 - 0.5g so as to give a representative sample) of an individual's hair usually taken from the occipital region of the scalp. The hair should be no longer than 50 mm from the scalp as hair longer than this may well be damaged and/or grossly contaminated. The sample is then cut into small lengths (10 to 15mm) and a known weight digested in acid solution before analysis by atomic absorption or argon plasma emission spectroscopy.

## **HERPES**

A inflammatory skin eruption showing small vesicles. Herpes Simplex - An eruption which appears around the mouth due to a virus.

## **HETEROZYGOUS**

Possessing dissimilar alternative genes for a physical characteristic that are inherited one from each parent. One gene is dominant and the other is recessive.

## **HOMEOPATHY**

A system promulgated by C. Hahnemann (German physician, 1755 - 1843) and based upon the principle that like cures like! Drugs are given which produce in the patient the signs of the disease to be cured, but they are usually prescribed in very small doses.

## **HOMOZYGOUS**

Possessing an identical pair of genes for a physical characteristic.

## **HYDROCEPHALUS**

The term applied to the condition in which there is abnormal accumulation of cerebrospinal fluid within the skull. It is due to one or more of three main causes:

- excessive production of spinal fluid
- defective absorption of cerebrospinal fluid
- blockage to the circulation of cerebrospinal fluid

The causes of these disturbances of circulation of cerebrospinal fluid may be congenital (most commonly associated with spina bifida), meningitis or a tumour.

## **HYSTEOSALPINGOGRAPHY**

An X-ray examination of the uterus and uterine tubes following the injection of a radio-opaque dye.

## **HYSTEOSALPINGOSTOMY**

Establishing an opening between the distal portion of the uterine tube and the uterus in an effort to overcome infertility when the medical portion is occluded or excised.

## **INFERTILITY**

The inability of a woman to conceive or of a man to produce viable sperm.

## **INSULIN**

The endocrine secretion of the pancreas, which regulates sugar metabolism, and ensures complete fat combustion. It is extensively used in diabetes mellitus, controlling the blood sugar and preventing acidosis : thus enabling a less restricted diet to be taken.

## **MALABSORPTION SYNDROME**

Includes a multiplicity of diseases, all of which are characterized by faulty absorption from the intestine of essential foodstuffs, such as fat, vitamins and mineral salts. Among the conditions in this syndrome are coeliac disease.

## MESCALINE

Is derived from the Mexican peyote cactus, *Anhalonium lewinii*. It is probably the most powerful of all the hallucinogens.

## MISCARRIAGE

Abortion. The expulsion of the foetus before the 28th week of pregnancy, ie. before it is legally viable.

## MORTALITY RATE

Death rate. The ratio of the number of deaths to the total population.

## MULTIGRAVIDA

Multi, meaning 'more than one'; gravida, meaning 'pregnant'. A woman who has been pregnant more than once is a multigravida.

## MULTIPARA

Multi, meaning 'more than one'; parere, meaning 'to bear'. A woman who has borne more than one child is multipara. A primigravida, having borne no child, is designated as para 0, a woman pregnant for the second time in para 1.

## NEO

Prefix, meaning 'New' eg. neonatal, the newborn.

## NEONATAL

Referring to the first month of life. Neonatal mortality. Death rate during this period as compared with the remaining 11 months of the first year.

## NEONATE

Term applied to a baby under one month old.

## **NULLIPARE**

A woman who has not given birth to a child.

## **NUTRITION**

The process by which food is assimilated into the body in order to nourish it.

## **NUTRITIONAL DISEASE**

One that is due to the continued absence of a necessary food factor.

## **NYSTATIN**

An anti-biotic drug particularly useful in treating thrush and candida of the vagina.

## **OLIGOSPERMIA**

A diminished output of sperm. Production may be stimulated by testosterone.

## **OSTEO-ARTHRITIS**

A degenerative condition attacking the articular cartilage and aggravated by an impaired blood supply, previous injury or overweight.

## **OSTEOMYELITIS**

Inflammation of the bone and marrow.

## **PATHIC**

Meaning 'pertaining to disease', eg. pathogenic or disease producing organisms; neonatal pathology, science of disease of the new born.

## **PERINATAL**

Pertaining to the first week of life.



## **PERINATAL MORTALITY**

Consists of deaths of the foetus after the 28th week of pregnancy and deaths of the new born child during the first week of life. The prenatal mortality rate, is the number of such deaths per 1000 total births.

## **PLACENTA**

The after-birth. A vascular structure inside the pregnant uterus supplying the foetus with nourishment through the connecting umbilical cord. The placenta develops at about the third month of pregnancy, and is expelled after the birth of the child.

## **PLACENTA PRAEVIA**

One attached to the lower part of the uterine wall. As labour advances, it may be a cause of severe antepartum haemorrhage.

## **POSTPARTUM PERIOD**

Is the term applied to anything happening immediately after child-birth : for example; post-partum haemorrhage.

## **PRE-ECLAMPSIA : ECLAMPSIA**

Pre-eclampsia is peculiar to pregnancy usually becoming manifest after the 30th week, and rarely prior to the 24th week. It occurs more commonly in primigravidae, and the incidence is increased in cases of multiple pregnancy, essential hypertension and diabetes. Pre-eclampsia is associated with placental dysfunction and if so intra-uterine growth retardation is likely to occur. Reduced uterine blood flow is a feature of pre-eclampsia. Raised blood pressure is one of the signs of pre-eclampsia. There are a number of theories as to the cause, research suggests the possibility of a bio-chemical disturbance being involved in the increase of an unidentified pressor agent.

## **PRIMIGRAVIDA**

Gravida, meaning 'pregnant'. A woman pregnant for the first time.

## **PRIMIPARA**

Parere, meaning 'to bear'. A woman giving birth to a child for the first time. During pregnancy she is para 0.

## **RHEUMATISM**

The term may be loosely applied to any pain of unknown cause in the joints or muscles.

## **RHEUMATOID ARTHRITIS**

A chronic inflammation, usually of unknown origin. The disease is progressive and incapacitating, owing to the resultant ankylosis.

## **RHINITIS**

Inflammation of the mucous membrane of the nose.

## **RICKETS**

A deficiency disease of young children from 6 months to 2 years of age. It is caused by a lack of Vitamin D which results from a failure of calcium and phosphorus absorption from the diet.

## **SALPINGITIS**

Inflammation of the fallopian tubes from infection with gonococci, streptococci or other bacteria. The infection may be carried to the tubes in the bloodstream, but more often reaches them by direct spread from the vagina and uterus. If both tubes are seriously inflamed they may remain blocked by scar tissue; the patient cannot then conceive.

## **SEBACEOUS CYST**

A cyst is a tumour with membranous capsule and contains fluid. A sebaceous cyst is due to a blockage of a duct from a sebaceous gland so that the sebum collects.

## SERUM

The clear fluid residue of blood, from which the corpuscles and fibrin have been removed.

## SICKLE CELL ANAEMIA

An inherited disease of Afro-Caribbean races in which the red blood cells are crescent-shaped and very friable (crumbling).

## SPINA BIFIDA

This defect is due to failure of the neural arches of the vertebrae to unite during embryonic life and permits the meninges, and sometimes the spinal cord protrude through the gap. This condition may be suspected by the increase in alpha-fetoproteins in amniotic fluid obtained by amniocentesis at 14 to 18 weeks, also raised maternal serum alpha - fetoproteins at 16 weeks.

## SQUINT

Strabismus - A facial deviation of either eye from its normal direction. It is called convergent when the eye turns in toward the nose and divergent when it turns outwards.

## STOOL

A motion or discharge from the bowels. Hunger stool - stool passed by underfed infants; frequent small and green in colour.

## SYNDROME

A group of signs and symptoms which, when considered together characterise a disease or condition.

## SYPHILIS

A specific, contagious venereal disease. Commonly transmitted by sexual intercourse; there is an early infectious stage; followed by a latent period of many years before the non-infectious late stage when serious disorders of the nervous and vascular systems arise.

## **TERATOGEN**

An agent ie. drug, organism, believed to cause congenital abnormalities eg. Thalidomide, rubella.

## **THALASSAEMIA**

A group of disorders mostly found in the Mediterranean region, caused by the inheritance of an abnormal haemoglobin. It is also known as Cooley's anaemia and is a condition which is characterised by severe anaemia.

## **THERAPEUTIC ABORTION**

Therapeutic abortion consists in the evacuation of the uterus, carried out by a qualified medical practitioner as treatment in the interest of the mother's life or of her total well being.

## **THRUSH**

An infection of the mucous membrane of the mouth by a fungus, the candida albicans. It arises in undernourished infants when unclean teats and bottles are used, also in older persons suffering debilitating disease where there is lack of oral hygiene. It can be treated by application of nystatin.

## **TOXAEMIA**

Poisoning of the blood by the absorption of toxins (bacterial products). Toxaemia of pregnancy is characterised by hypertension and oedema, with the possibility of eclampsia developing if untreated.

## **TOXOPLASMOSIS**

A condition of enlarged glands and fever caused by a protozoon, the Toxoplasma. It may cause hydrocephalus and other disorders in infants born of infected mothers.

## TRACE ELEMENTS

These are chemical elements that are distributed throughout the tissues of the body in very small amounts and are essential for the nutrition of the body (elements such as copper, fluoride, cobalt, selenium and zinc).

## TRIMESTER

A period of three months. The nine months of pregnancy can be divided into three trimesters (a) the first, (b) second or mid, and (c) the third.

## TRISOMY

A chromosome additional to the normal complement in Down's syndrome the extra chromosome is commonly Trisomy 21 .

## VEGETARIAN

Vegetarian means the principle of subsisting on a diet of vegetables which contain no meat. Such a diet may include milk, cheese and eggs.

## VEGAN

A diet of vegetables and fruit.

## VITAMIN

Vitamin is a term applied to a group of substances which exist in minute quantities in natural foods, and which are necessary for normal nutrition, especially in connection with growth and development. Several of them have now been synthesized. When they are absent from the food, defective growth takes place in young animals and in children, and in adults various diseases arise and persistent deprivation of one or other vitamin is apt to lead to a state of lowered general health. A proper diet contains the raw materials of which the body is made and continually remade, together with fuel to provide energy. The main ingredients are protein, fat and carbohydrate. Smaller quantities of inorganic matter are also needed; sodium, potassium calcium, iron and traces of several other metals, phosphates, chlorides,

iodides and fluorides. In addition, certain compounds are needed which the body cannot make from their raw materials (ie. it lacks the enzymes needed for their synthesis); these are vitamins. Only small amounts are needed most of them serve as minor reagents in major chemical reactions (enzymes) as each new vitamin was discovered it was given a letter, A good mixed diet contains enough of all the vitamins.

### **VITAMIN A (Retinol)**

A complex alcohol found in fish oils, butter and meat. Plant pigments contain carotenes from which vitamin A is formed after digestion; hence vegetables are a good source. Deficiency of Vitamin A can be due to a very poor diet but it is more likely to come with diseases such as coeliac disease, which interfere with the digestion of fat; Vitamin A is absorbed from the intestine together with fat.

### **VITAMIN C**

Ascorbic acid - is required during pregnancy for the growing foetus. It is also concerned in blood formation and the absorption of iron.

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