is the profession's responsibility to press the Government into planning manpower needs realistically. This is being done, but is it vigorous enough or, indeed, in the right direction?

Hospital waiting lists do not exist in Israel. Why do they exist here? There an urgent case is not listed for admission within one month it is dealt with in a day or so, and if a non-urgent case were listed to be admitted within a year there would be a public outcry. Nephrology and renal dialysis is a district-based service with beds in each district general hospital in Israel, whereas in Britain it is a limited regional service and people are dying because they are judged not suitable to benefit from the facilities available. Because a three to four-month waiting list has arisen in Israel for "open heart/coronary artery surgery" plans are in hand to make this facility available to all who need it. Would this occur in Britain?

The lay participation in health authorities is unknown in Israel and the role of community health councils is even more difficult to explain to the Israelis. Does the presence of a lay "health authority" inhibit the development of services by acting as a body that has to "carry responsibility" and behind whom the providers and organisers of care can shelter from the public, and who, without the shield of the health authority, would find their jobs at stake?

What is the BMA doing about the practitioners of fringe medicine—something that is heavily frowned on in Israel? Should the BMA become more concerned about the extent of this current social craze in Britain? What areas do fringe doctors practise in? Who are they? What profits are being made, and what evidence is there to support their claims? What harm are they doing?

Is it sufficient to permit the sale of over-the-counter medicines if they are known to do "no harm"? Would it not be more logical for the manufacturers of such preparations to demonstrate specifically that they actually do good according to scientifically agreed principles?

These are but a few of the thoughts conceived in the rarefied Jerusalem air which no doubt will be dissipated when my feet touch the ground.

Research in General Practice

Doing research as a trainee

MAUREEN REYNOLDS

"Project work in general practice is part of the everyday business of being a modern clinician, of looking critically at what is done, how it is done, and asking whether or not it could be done a little better."[1]

Why do a trainee project?

Several authors[1-3] have emphasised the educational importance of encouraging trainees to think critically about their clinical work. They have suggested some useful guidelines:

(1) Trainees find it easier to undertake projects if their trainers are enthusiastic and supportive.

(2) It is essential that the trainee is genuinely interested in the project and feels that it will produce useful and relevant results. Subjects imposed by trainers are unlikely to succeed.

(3) The scale of the project must be realistic in terms of the time available. If it requires too much data collection it may fail through loss of interest.

(4) It is helpful if the practice can provide some basic tools, especially an age/sex register.

My own experience of carrying out a project may serve as an illustration.* When I began an introductory three-month attachment in general practice the idea of doing a project was not one of my priorities. My trainer, however, suggested looking at the local cervical cytology recall system and allocated one afternoon a week to enable me to do the work. I am particularly interested in preventive medicine and population screening and was therefore very willing to take it on, though it soon became clear that we were interested in different aspects of the subject. His aim was to assess the accuracy of a computerised recall system, whereas I was more interested in discovering what proportion of women in the practice were being regularly screened. It proved possible to answer both questions.

The Avon Area Health Authority computer recall system for cervical cytology has been in operation since August 1977. The computer provided a printout of all the women aged 35-64 registered with the practice who could be identified in the computer system as having had a cervical smear during the 48 months to July 1981. I then used the practice age/sex register to identify year by year all women aged 35-64, and extracted the notes of each group of women from the filing system. I examined each set of notes for a record of any cervical smear examination.

What I found

Checking the notes showed that 14% of women aged 35-64 had had a hysterectomy. Of the women at risk of developing cervical cancer, 42% had had a smear in the previous five years, 26% had had a smear at some time more than five years previously, and 32% had never had a smear. The older the age group, the greater the number of women who had never been screened.

A total of 149 women had, according to their notes, received cervical smears in the preceding 48 months of computer operation. Twelve women did not appear on the computer list. Thus, of 149 examinations, 137 (92%) were correctly identified for recall.

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The conclusions I was able to draw

My project was in part an audit of the effectiveness of a computerised recall system for cervical cytology. The computer identified 137 women for recall and failed in only 12 (8%). Thus the study confirmed the accuracy of the computer system. The one obvious and major drawback of the system, however, is that only those women who have had a recent smear examination will be recalled for another. In our practice only 42% of women at risk were on the computer recall list, and 32% had *never* had a smear.

This seemed an unacceptably high figure, so I was interested to compare our results with other studies. For instance, in Oxford between 1964 and 1974, 53% of women aged 40-49 and 73% of those aged 50-59 had never been screened,[2] compared with 21% and 38% respectively in our practice. But I found one general practitioner who had managed to screen 90% of all eligible women in just over three and a half years.* Other studies confirmed the finding that the older the age group, the less likely are the women to have had a smear.[3-5][10]

A comparison of the list of women on the computer with the age/sex register provided the practice with the names of those women who had not had a recent smear. Had I been staying longer in the practice, my aim would have been to write to all of these women inviting them to attend for screening. Other groups who have tried this have had response rates ranging from 65%[11] or 70%[12] to around 90%.[13][14]

The lessons I learnt

One important lesson I learnt from the study was the importance of explaining the purpose of the project to the other members of staff in the practice when you start, and if possible infecting them with your own enthusiasm. I extracted the notes myself, but did not refile them, and this produced a small but definite increase in the receptionists' work load. It is unreasonable to expect other people to take on extra work unless they feel concerned in the project and think that it will produce worthwhile results.

Extracting the notes of over 400 women may sound very boring and time-consuming, but I found it fascinating. I discovered a surprising amount of buried background information about the patients, both medical and social—for example, the woman being treated for depression who had had a subtotal thyroidectomy with no subsequent check on thyroid function; the woman who was acutely distressed about her teenage daughter's unwanted pregnancy whose own illegitimate baby had been adopted long before her present marriage; the patient whose blood pressure had been recorded at 230/130 mm Hg on two occasions in 1977 but who had not been seen since.

Instances such as these emphasised to me how useful it would be to be able to identify all those patients in a practice with diabetes, hypertension, thyroid disease, and so on, and to devise a system of follow-up that would enable one to assess the quality of care they were receiving. General practice provides a marvellous opportunity to work with a defined population, and one of the basic tools is the age/sex register.[1-3] I was fortunate that my training practice already had such a register. It would be interesting to know how many practices have similar facilities.

For me, the hardest part of the project was writing it up at the end, and I suspect that a sizeable number of studies have been successfully completed by trainees who never produce a final report that can be presented to their colleagues for discussion or submitted for publication. Perhaps trainers could add an extra note of encouragement at this stage.

I would advise any trainee to try doing a simple project such as the one I have described. There are endless opportunities in everyday practice to examine the service we provide our patients and at the same time greatly increase the sense of satisfaction we can obtain from our work.

I would like to thank my trainer, Clive Richards, for his continued advice and encouragement.

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INTRODUCTION OF ETHER One of the most remarkable events in the history of medicine, regarded as a practical art, is certainly that which has excited so much attention in Europe and America during the last four months—THE EMPLOYMENT OF THE VAPOUR OF ETHER AS A MEANS OF ABOLISHING PAIN in the practice of Surgery, Midwifery and Medicine. And the results hitherto obtained seem to justify us in regarding the event as no less beneficial than remarkable. It is assuredly true, that by means of the new process, not a little of that dreadful suffering, hitherto inseparable from the performance of most surgical operations, has been abolished in the practice of the most eminent surgeons in Europe and America, during the three or four months just elapsed; and there seems every reason for believing that the benefits already experienced are likely to be perpetuated, perhaps greatly enhanced in amount, through all future time. It has been the ardent desire of philanthropists in all ages to save humanity from PAIN, in all its forms. . . . That a means should be discovered, and discovered in our own day, calculated not merely to furnish positive relief in many of these terrible infliction, but almost to exceed in its practical working, the wildest dreams of the philanthropic enthusiast, is a matter so much within the domain of the marvellous, almost of the supernatural, that it is no wonder we should not be yet prepared to consider it, in all its bearings, with the cool blood of philosophy. Even in this era of steam and electricity, of macroscopes and microscopes, the discovery is one that arrests more universal attention, and excites a deeper interest, than any mere physical fact whatever—not even excepting the magnificent achievement of Adams and Leverrier,* which "yields the lyre of Heaven another string." (Review of: Robinson J, *A Treatise on the Inhalation of the Vapour of Ether, for the Prevention of Pain in Surgical Operations etc.* London, 1847 and Simpson JY, *Notes on the Inhalation of Sulphuric Ether in the Practice of Midwifery*. Edinburgh, 1847 in: *British and Foreign Medical Review*, 1847;**23**:547-63). *The discovery of the planet Neptune based on the mathematical calculations of Adams and Leverrier in 1846.

The GP and the Specialist

Obstetrics

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The close working relationship between the general practitioner and the obstetrician has developed from the practise of shared antenatal care. This co-operation will hopefully continue, enabling both partners to better understand the problems and needs of the pregnant patient and so further improve maternity services.

Advances in the investigative techniques that are available only in hospital may appear to have left the general practitioner behind. The reality is that there are many problems with the application and interpretation of modern tests of fetal growth and well-being. Thus personal assessment and clinical examination are still the essential features of antenatal care. So the general practitioner has lost nothing in the service he can offer his antenatal patients.

Diagnosis of pregnancy and hospital referral

A pregnancy test is an effective method of diagnosing pregnancy in its early stages, but it is both uneconomical and inefficient to perform such a test when the pregnant uterus is palpable abdominally. An examination at this time reassures the patient, gives immediate confirmation of pregnancy, and provides the best clinical correlation with dates.

Once pregnancy is confirmed, early referral to a consultant antenatal booking clinic is desirable. The referral letter is vital because the general practitioner is the first to see the patient and can make unique observations. His records may contain information unknown to the hospital. The menstrual history is important as details of this are soon forgotten. A pregnancy test result should be accompanied by the date on which it was performed. Such information may help assess the accuracy of the patient's dates. Notes on the past medical and obstetric history are essential, especially if the patient has not been to the referral hospital before. A record of the blood pressure and also the prepregnancy level, if it is known, may help to determine whether a rise in blood pressure in later pregnancy is due to pre-eclampsia or to an underlying hypertensive state.

Routine screening tests are performed at the hospital and need not usually be carried out by the general practitioner. If a cervical smear is taken this should be indicated to prevent it being repeated at the booking clinic. Finally, the general practitioner should indicate his attitude to sharing antenatal care if misunderstanding is to be avoided.

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Serum alpha-fetoprotein

Measuring serum alpha-fetoprotein is a screening test for neural tube defects and is carried out in many, but not all, regions of Britain. It is often most easily performed by the general practitioner. The blood has to be taken at a fairly precise time—between 17 and 19 weeks—and if samples are withdrawn at inappropriate times or when the dates are in doubt the results may be falsely interpreted. Patients who report their pregnancies late may have only seen their family practitioner at the appropriate time for this test, and others will find it easier to attend their local surgeries for the sample to be taken than to travel back to the hospital. Therefore, general practitioners should be aware of the availability of this service in their area and be prepared to take the blood specimen in certain instances. The test is, of course, not diagnostic, and it is important that the patient understands all the implications of alpha-fetoprotein screening. This may take a considerable amount of time and counselling.

Shared care

Antenatal care given at the local health centre or surgery is often favoured by the patient. It is easier to reach, it is more friendly and familiar, it requires less waiting, and it often provides better continuity of care. Such advantages may encourage improved attendances among those women who default from hospital clinic appointments.

Unfortunately, the general practitioner, seeing small numbers of patients often interspersed into a routine surgery without the support of hospital facilities, may occasionally overlook the routine procedures that are rigidly applied in hospital. Experience has shown that effective screening requires strict rules and a tight regimen, otherwise essential procedures may be forgotten. Clinical assessment, blood pressure measurement, and urine analysis are rarely omitted; it is the routine blood analyses that are sometimes overlooked. At 28 weeks, when many patients will still be attending only their general practitioner, a repeat haemoglobin test in all women and a repeat antibody check in all rhesus-negative women are essential.

Antenatal care is very much a clinical process, an art based on experience. Occasionally too great an emphasis is placed on one aspect of the patient's condition. Mild oedema is a normal feature of pregnancy and can be recorded in 80% of patients, so if no other problems exist it is not a cause for concern. Likewise, variations in weight gain are common and rarely important. Overall weight change is probably more important than fluctuations week by week, though persistent failure to gain weight justifies investigation.

Clinical estimation of fetal size and gestational age in the late stages of pregnancy are exceedingly inaccurate. It is wrong, therefore, to suggest that the baby is due sooner on account of an apparently bigger uterus than expected. With proper assessment of the menstrual history, an early clinical examination, and an early ultrasound scan the estimated date of delivery may be reliably calculated and should not be changed without very sound evidence.

Planning appointments

Hospital antenatal attendances can be exhausting and time-consuming for patients. Interspersing assessment by the general practitioner with hospital visits is helpful to patients, provided of course that a sensible pattern of attendance can be arranged. Too often patients attend one clinic only to visit the other after an inappropriately short interval. Unfortunately, hospital schedules are inflexible owing to the many demands on the outpatient department, so it is usually easier for the general practitioner to see that appointments are arranged reasonably.

Ultrasound examination

Ultrasound assessment of pregnancy has revolutionised the study of the fetus in utero. The technique can assess gestation and fetal growth, identify multiple pregnancy, detect some fetal abnormalities, and outline the placenta. With regard to its most widely used application—the assessment of gestational age by measuring the fetal biparietal diameter—there is one important limitation. A reliable date of delivery can only be calculated if the biparietal diameter is measured before 20 weeks of pregnancy. After this it becomes increasingly unreliable because normal variation in the biparietal diameter increases. Thus, early referral to a hospital clinic is essential when the dates are in doubt and referral for a scan to confirm the dates once the fundus is well past the umbilicus is of little value.

Small portable Doppler ultrasound devices are available that will detect the fetal heart beat and even fetal movement as early as the beginning of the second trimester. The devices are easy to use and will reassure the patient as well as diagnose pregnancy. They cost little, so all practices where antenatal care is a serious business should have one.

Prescribing in pregnancy

There is little to say about prescribing as all doctors are aware of the need to assess very carefully the indications for prescribing in pregnancy. Occasionally treatment is given inadvertently in early pregnancy. Such accidents could be avoided if the possibility of pregnancy was discussed with all young women likely to be at risk before writing a prescription. Some antibiotics and anticonvulsants diminish the effectiveness of oral contraceptives and so in appropriate circumstances the patient should be warned.

Progestogens are occasionally still used in early pregnancy to treat threatened or recurrent abortions, though their value has never been proved. It may even turn out that they are harmful; the problems caused by oestrogens given in early pregnancy were not recognised until 20 years after they were first used.

Finally, the use of diuretics in pregnancy must be discouraged. Pregnant women are more susceptible to the side effects of diuretics, and the rare but often fatal combination of pancreatitis and pregnancy is almost always associated with the administration of diuretics. Furthermore, diuretics are positively harmful if given to women with pre-eclampsia, for this condition, despite the oedema, is associated with intravascular hypovolaemia.

Final comment

The observations made in this article have been chosen to show how the general practitioner can help and inform his hospital colleagues and also to undermine some of the old practices and beliefs that are now known to be unnecessary or erroneous. A proper understanding between the general practitioner and the hospital is essential if sharing antenatal care is to benefit the patient.

Diary of Urban Marks: 1880-1949

Leapingwell took my place and handed the clairvoyant a gold watch-chain. This had belonged to his father for a number of years, and, incidentally, every three weeks went to the pawnbrokers for a week. He received his money monthly but at the end of three weeks was spent out, and this particular chain was the only means by which he could keep his head above water. The consequence of this was that she told him many things about his father and very little about himself. But two things stand out in my memory. She told him that his brother was in the army overseas and that the brother had been invalided to the coast and was coming home. A letter to this effect was on its way to Leapingwell and he would receive it shortly. [This turned out to be correct]. The other thing was that during recent vacation he had become attached to a young woman—a widow with one child. She warned him to cut adrift from her and on no account to marry her. The only reason was that she could foresee disaster. (Even I did not know of this although we had no secrets from each other. Leapingwell afterwards admitted to me that what the clairvoyant had said was true.)

Even after all these years the memory of that clairvoyant is crystal clear and as my narrative proceeds you will see how true she was. She did not know us in the slightest degree, and we gave her no replies except those necessary for her own interpretations.

As a young man I used to sneer at palmistry—clairvoyancy—spiritualism—and all those things which may be classed as "occult sciences," but this experience broadened my outlook. Since then I have listened to other people's opinions on such matters while conserving my own, and am not in my older age prepared to sneer at things I do not know of. I am not now dogmatic, recognising with Shakespeare that there are more things in heaven and earth than we dream of in our philosophy.

When we left the clairvoyant's flat we went home but did no work. We had our usual pie and rum earlier than usual and then went to bed and forgot about our experience until 14 days or so before the examination. Then on returning home in time for dinner I found that the postman had brought us the schedule of the examination and the cards bearing the number by which we should be known throughout until the final scene arrived. My card bore the number 123 [as mentioned by the clairvoyant] and Leapingwell was 121. His initial was L, mine was M. So that there was a number in between. It was good to know that we should be in the same batch of examinees. I put Leaper's card in front and stuck them in front of an imitation grandfather's clock of mine on the mantelpiece. Leaper, who had been visiting his mother, came into the room in time for dinner. He looked at his own card and then mine. With the ejaculation "I'll be damned" he sank into an armchair.

At that time [1905] the examination took three weeks. First there were two papers to be written, and after that a week later came the clinical examination. I knew that I had done well in both of these. Then elapsed a fortnight, and in the afternoon we had to answer a short question in writing. My question was "Give the treatment of diphtheria in a child of 10 years of age." We were allowed only 10 minutes for the answer and all that was wanted could have been epitomised in this: "2000 units of antitoxin repeated if necessary. Tracheotomy if required." Instead of doing this I wrote gaily of a room facing west—nurses—gargles—steam kettles, etc and never mentioned antitoxin. As we came down the stairs talking to one another Leaper said, "Of course antitoxin was all that was wanted. Easy." Well I could have kicked myself, but that would have done no good. We were then allowed out to get tea and had to return at 8 pm. In the meantime we went home and I looked up how to make antitoxin and everything about it.