beds to become a form of "storage unit." It is, however, important to indicate that there may be a place for so-called "community hospitals" in large catchment areas, though their precise function, size, staffing, and siting remains to be defined.

We have maintained a policy of giving parallel service to the general medical department in cases of patients of pensionable age and over. Even when they suffer from acute medical conditions this category of patient is better managed by physicians who are already orientated to social medicine and rehabilitation. Our policy is reflected in table III, as fewer than six cases were referred for transfer from general medicine to our department in one year. As our performance becomes comparable with that of acute specialties, resources—particularly medical and nursing staff—will have to be adjusted. Consultants in other specialties must, in return for help with their potential long-stay cases, accord the geriatric department full support and encouragement, particularly with regard to resources. For instance, we agree with the recommendations laid down by the Council of the British Geriatric Society for a minimum of three full-time consultant physicians in geriatrics for a population of 200,000. It seems more practicable to create new consultant geriatricians in place of readvertising some existing consultant physician posts in general medicine.

It is common sense for every hospital group to centre its interest on the development of geriatric departments. The greatest single contribution which can be made to improve the working of acute resources and hence economic considerations is to reduce the incidence of long-stay cases in acute areas. This can best be done by encouraging the development of efficient geriatric management by effective geriatric resources.

Finally, education in geriatric care and recruitment to the specialty is influenced by the "image" created by our work. The

appropriate image is more likely to emanate from hospitals dealing with "total patient care" than "disposal" problems.

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Hospital Topics

Hospital Family Planning: Termination of Pregnancy and Contraceptive Use

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Summary

A review of termination of pregnancy in a district hospital catchment area for 1970 to 1972 shows how a decrease in total numbers of terminations and repeat terminations may be effected by the use of intensive family planning. In 1972 over 80% had first trimester abortions, but most

of the second trimester abortions came from the manual skilled, semi-skilled, and unskilled occupational groups. Over half those attending for termination had never used any method of contraception. Acceptance of family planning after termination was high but motivation poor, emphasizing the suitability of intrauterine devices inserted at the time of termination. The complication rate after termination was low.

Introduction

Much has been written since the introduction in England of the Abortion Act 1967 about methods and the complications of termination of pregnancy.^{1 2} The purpose of this study was to investigate the changes that have occurred in contraceptive practice, the implementation of effective contraception after termination of pregnancy, and family planning follow-up in relation to social class (by husband's occupation).³

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Patients and Clinic Structure

Patients may be referred to the Abortion Counselling Clinic at King's College Hospital from the hospital maternity catchment area. This is fairly stable with little population shift at present and consists of a dormitory area in South London. About 8-10% of the population are immigrant residents, mostly from the West Indies and Africa. Patients are referred mainly from the general practitioners to the hospital counselling clinic, though a small proportion are referred from local family planning clinics.

The clinics are held three times a week and appointments are made either by the general practitioner on the telephone or by a letter given to the patient. An appointment is always given within five days. The counselling interview staff consists of a nurse, trained in abortion counselling, and a doctor. A full medical and reproductive history is taken together with a record of previous contraception, side effects of previous methods, and reasons for discontinuing previous methods. Inquiry is made into the housing situation, the number of children in the family unit, and other social factors. This builds up a detailed picture of the stress brought about by the unwanted pregnancy and helps to determine the future policy of the patient towards control of her fertility.

To complete the picture the patient must know the alternatives to abortion: continuing with the pregnancy and then arranging adoption or fostering, or keeping the child. Also the method of termination likely to be carried out needs to be explained as some patients decide to continue with the pregnancy when they realise what is involved.

In most cases this interview confirms the original recommendation of the general practitioner and whether the patient is booked for antenatal care or for a therapeutic termination. In a small proportion of patients there is still some doubt as to what is the correct course of action, and further information and assessment are required. A detailed social interview obtained by a trained medical social worker is of great help in providing this. It may take two to seven days to gain this information, during which time the patient has time to think and to discuss the situation with her partner and relatives. Usually within a week a rational and sensible decision can be reached.

After deciding on termination of pregnancy the patient is admitted to hospital for a method determined by her period of gestation. If she is 12 weeks' pregnant or less the admission is always within seven days of the interview. In the second trimester, when an intra-amniotic injection is used, the waiting time may be two to three weeks until the uterus is the optimum size for this procedure.

Methods

The following methods of termination are used. Up to eight weeks pregnancy a Karman catheter outpatient termination,⁴ requiring a three-hour stay in hospital. From eight to 12 weeks, a Bierer catheter is used with a light general anaesthetic; patients usually stay in hospital for 12 to 24 hours after this procedure. Second trimester abortion is carried out with intra-amniotic hypertonic saline with the method described by Gilmour *et al.*,⁵ or intra-amniotic urea.⁶ A simultaneous intravenous oxytocin infusion is used to decrease the injection-abortion interval. This procedure is usually carried out for gestations of 16 to 20 weeks. Because of the time taken to abort after intra-amniotic injections the usual length of hospital stay is two to three days.

In 1971 a policy of active family planning was implemented where the decision on the method was taken at the time of the abortion counselling visit. During the patient's stay in hospital she was again counselled by the nursing staff of the ward, who were trained in methods of contraception and understood the necessity for follow-up. The method of family planning was initiated at the time of termination—immediate insertion of the intrauterine device (I.U.C.D.) at the completion of the pro-

cedure, or oral contraceptives (O.C.) started the day after. Female sterilization was carried out by laparoscopy at the termination. If the man was to have a vasectomy, this was arranged at the time of the initial interview.

After the initiation of family planning, the patient was sent to a general practitioner, a local family planning clinic, or the hospital family planning clinic for her first follow-up visit within three weeks of the termination. In addition, an open clinic was held once a week for patients to attend if they had any problems after their abortion the previous week. This has been found to be an important link between the initial operation and the follow-up of patients for family planning. If a patient defaults at her local clinic or general practitioner the local authority domiciliary family planning teams are asked to visit her to give further advice if possible.

Results

The yearly number of births fell in the King's College Hospital catchment area from 3,695 in 1970 to 3,319 in 1972. This accords with the figures for Britain as a whole. The total number of terminations referred and accepted and the method used for termination is shown in table I. About the same acceptance rate is seen through the three years 1970-2, though in 1972 the total acceptance rate was 92% (excluding 3% that were not pregnant making the overall acceptance rate equivalent to the other years). The pattern of early referral shows a distinct change through the three years. In 1970 only 42.5% were less than 12 weeks at the time of referral; this rose to 85.4% in 1972.

TABLE I—Methods used in Termination of Pregnancy in Years Studied

	1970	1971	1972
Total patients referred ..	907	1,287	1,216*
Total terminations performed ..	870 (96%)	1,254 (97%)	1,111 (95%)
≤12 weeks	42.5%	62.8%	85.4%
>12 weeks	57.5%	37.2%	14.5%
Method (% of total terminations):			
Karman	—	369 (29.4%)	346 (31.1%)
Vacuum	374 (43%)	465 (37%)	604 (54.3%)
Saline	360 (41.3%)	350 (28%)	161 (14.5%)
Hysterotomy	85	55	6
Prostaglandins	71	24	—

*Including 43 patients not pregnant.

In 1970 the two methods primarily used were vacuum aspiration with the Bierer catheter and second trimester intra-amniotic saline. Several hysterotomies were also carried out, usually indicated by intercurrent uterine disease. In 1971 the Karman catheter outpatient technique was introduced and at this time 29.6% were between eight and 10 weeks pregnant at the time of referral. In 1972 31.1% were less than eight weeks and were suitable for the Karman catheter technique, 54.3% were between eight and 12 weeks and were suitable for Bierer catheter aspiration, and 14.5% were suitable for a saline termination.

The effect of terminations on gynaecological practice is shown in table II. In the years 1970, 1971, and 1972 the total gynaecological operations increased, including major surgery. This was not entirely due to terminations, which were 25.6% of all gynaecological procedures in 1970, 30.8% in 1971, and 22.9% in 1972. About 10-15% of patients in these years were sterilized at the time of termination.

In 1972 a detailed analysis of the terminations was carried out. The incidence of side effects in relation to the method used is shown in table III. Often the readmission of the patient was to evaluate the symptoms, rather than for a definitive serious complication. There were no uterine perforations and repeat evacuation of the uterus for the Karman method was 3.2%, for Bierer suction 1.3%, and for intra-amniotic saline 30.4%. This increased incidence of evacuation after saline termination is well known and has been described elsewhere.⁶ Other compli-

TABLE II—Termination of Pregnancy in relation to Gynaecological Procedures in Years Studied

	1970	1971	1972
Gynaecological operations:			
Total	3,398	4,079	4,860
Major	698	766	906
Minor	2,700	3,313	3,954
Termination of Pregnancy (% of gynaecological operations) ..	870 (25.6%)	1,254 (30.8%)	1,111 (22.9%)
Total sterilizations	347	358	465
Terminations of Pregnancy + sterilization (% of total terminations) ..	133 (15%)	142 (11.3%)	153 (13.8%)

cations—pyrexia requiring treatment with antibiotics, bleeding requiring transfusion—are extremely low.

Table IV shows the 1972 terminations broken down by social class (Registrar-General's classification) and the method of contraception used before the termination. This shows that 45% had used nothing before termination, 19% had used the sheath, only 5.7% had used oral contraceptives, and 4% had used intrauterine devices. It also shows that the proportion using any method of contraception declined from social classes I to V.

The number of terminations by social class and the method of contraception accepted at the time of termination is given in table V. Female sterilization was accepted more readily by social classes IIIa, IV, and V. More than half of the patients accepted contraceptive methods that were initiated at the time of termi-

nation. For non-manual classes I, II, and IIIa there was equal division between the intrauterine device and oral contraception whereas for social class V more favoured the intrauterine device (ratio of I.U.C.D. to O.C., 3:1). Those referred to their general practitioner or local family planning clinic were less than 37% in each of the groups, being lower for social classes IV (11%) and V (4%).

Of the 112 patients who were refused termination in 1972 43 were not pregnant. Fifty-two patients are known to have been pregnant but 17 case records are missing. Forty-six were booked for antenatal care and have been followed through their pregnancy in our clinic. Of these 46 patients 12 pregnancies were too large for a termination, 26 did not want a termination, and eight had no grounds for a termination.

The number of repeat terminations from the years before 1969 to 1972 with regard to their social class and the method of family planning used at the time of the procedure is shown in table VI. The repeat terminations expressed as a percentage of total terminations drops after a peak in 1970 of 3.1% to 0.5% in 1972. These patients come mainly from the manual working class groups.

The family planning method being used at the time of repeat terminations is shown in table VII. Regardless of the method of family planning used after the first termination, by the time the patient presents with her repeat termination over half (54%) are using either the sheath or nothing. This further suggests the greater effectiveness in the long term of intrauterine devices as

TABLE III—Side Effects after Termination of Pregnancy in 1972

No. of Terminations	Method	Readmissions	Side Effect					All Side Effects as % of Terminations
			Bleeding	Pyrexia	Evacuation	Perforation	Other	
346	Karman	14	2 (0.6)	—	11 (3.2)	—	10	6.7%
604	Suction	16	4 (0.7)	2	8 (1.3)	—	20	5.6%
161	Saline	—	—	—	49 (30.4)	—	2	31.7%
6	Hysterotomy	—	—	—	—	—	—	—

TABLE IV—Number of Terminations, Social Groups, and Contraception used before Operation in 1972

No. of Terminations (n = 988)	Social Class	Contraceptive Method							
		None	Sheath	Spermicides	O.C.	I.U.C.D.	Cap	Withdrawal	Other
22	I	4	4	0	0	2	7	1	4
101	II	36	18	5	4	3	11	2	22
85	IIIa	24	28	3	5	6	3	6	10
293	IIIb	133	65	6	22	10	9	14	34
208	IV	95	39	9	6	11	5	5	30
74	V	40	9	3	5	2	0	4	11
93	Student	50	15	3	7	1	5	2	10
23	Unknown	7	4	0	1	2	1	1	7
63	Unemployed	38	5	5	6	1	1	0	0
26	Housewife	17	3	1	0	1	0	0	4
Total (% of all terminations)		444 (45%)	190 (19%)	35 (3.5%)	56 (5.7%)	39 (4.0%)	42 (4.3%)	35 (3.5%)	147 (15%)

TABLE V—Acceptance of Contraception after Termination of Pregnancy, 1972

Social Class	No. of Terminations	No. Who Refused Contraception	No. Sterilized		Contraception Started after Operation		Referred for Contraception
			Female	Male	I.U.C.D.	O.C.	
I	22	1	4	0	4	5	8 (36%)
II	101	3	7	0	28	29	34 (34%)
IIIa	85	2	15	0	21	24	21 (25%)
IIIb	293	4	28	5	71	96	80 (27%)
IV	208	3	59	1	60	40	22 (11%)
V	74	1	22	1	27	9	3 (4%)
Student	93	3	2	0	24	30	34 (37%)
Unknown	23	0	11	0	4	6	1
Housewife	25	1	9	0	6	2	0
Unemployed	63	3	3	0	26	14	2

TABLE VI—Repeat Terminations of Pregnancy by Year and Social Class

Year of Previous Termination	No. of Repeat Terminations (% of total)	Social Class									
		I	II	IIIa	IIIb	IV	V	Student	Un-employed	Unknown	House-wife
Before 1969	6 (N.R.)	—	—	—	1	3	—	—	—	—	1
1969	10 (2.5)	—	1	—	3	4	—	—	1	—	1
1970	27 (3.1)	—	1	4	7	5	4	3	1	—	2
1971	24 (1.8)	—	3	3	7	6	1	1	—	—	—
1972	4 (0.5)	—	—	—	1	2	—	1	—	—	—

N.R. = Not recovered.

TABLE VII—Method of Contraception being used at Time of Repeat Termination of Pregnancy

	No. of Terminations	Contraceptive Method				
		None	Sheath	I.U.C.D.	O.C.	Others
Before 1969	6	2	2	0	0	2
1969	10	5	1	1	0	2
1970	27	9	7	1	3	7
1971	24	10	2	4	1	7
1972	4	1	1	2	0	0

opposed to oral contraception in the prevention of repeat terminations.

Discussion

The increase in legal terminations per year in England was to be expected and has been shown previously in countries such as Japan, Yugoslavia, and Hungary.^{2,7} Nevertheless, unless a policy of effective contraception after termination is adopted the number continues to rise drastically, as occurred in some of the Eastern European countries that had legal abortion without contraception.

For abortion to have meaning it must be integrated with the policy of the gynaecological and obstetric departments of a district hospital and the family planning services available in that area. Over the past three years an adequate referral system for our catchment area has been developed which allows the rapid referral of patients for abortion counselling, as described above. The general practitioner plays a major part in this abortion counselling, providing details of the patient's social, medical, and economic background and, in most cases, a sensible decision to continue the pregnancy or to carry out a termination can be reached.⁸ A dramatic increase in the total numbers of patients suitable for first trimester terminations—now over 82%—has been brought about by special outpatient sessions for abortion counselling held three times a week. There is no delay in appointments, all patients being seen within three days of the request, and general practitioners have been fully informed of this system. Though second trimester terminations now amount to only 14.5% of all, three-quarters of these patients come from social classes IIIb, IV, and V. They may well have poorer access and a poorer understanding of the services available. In certain cases difficulties of pregnancy diagnosis and denial or concealment of pregnancy by patients indicate that there is still a need for a safe method for second trimester termination.

The high acceptance rate by the hospital is not abortion on demand but rather the confirmation of the referring doctor's opinion in most cases. Nearly all patients have good grounds for abortion under paragraphs 2 or 3 of the 1967 Act.

In this group of patients in 1972 spontaneous abortion occurred in less than 1% before the terminations were carried out. The complication rates encountered with the various methods were low—less than 7% for first trimester abortions, which is similar to the series of Buckle and Anderson⁹ and Collins *et al.*,¹⁰ and differs from the rates shown by Stallworthy *et al.*,¹¹ and Sood¹² in that perforation and infection rates were lower. A few patients (1.7%) required a second method for abortion. These were mainly failed saline procedures.

Over half (54.5%) of the women undergoing termination were not using contraception at the time of conception. About one-third had never used any method of birth control, and may reflect the proportion of manual workers living in the catchment area. This pattern accords with that found by Frazer and Watson¹³ but differs from that shown by other workers such as Morton Williams and Hindell.¹⁴

Many reasons were given for this failure to use contraception. They included no reason at all, unplanned intercourse, ignorance, dissatisfaction with a previously tried method, belief in their inability to conceive, and the expense of contraception. Over 75% who had tried oral contraception stopped without medical advice and without substituting any other method either for no stated reason or for minor side effects. Of the few who used contraception at the time of conception the sheath was more commonly used (20%) than medical methods (14%). A small proportion of women were unlucky in that a previously reliable method of contraception was started too late after childbirth or else had failed and no substitute method was offered by the doctor concerned.

At King's College Hospital there has been an acceptance of the need for family planning services integrated with a termination service. Adequate hospital family planning clinics are provided for youth advisory work¹⁵ and for general family planning. In addition, family planning visitors see most patients after delivery and termination to discuss methods of contraception. Nursing staff on the gynaecological and maternity wards are all trained in family planning methods, as are the house officers and other gynaecological staff. The emphasis is on the correct method for each patient and now, for most patients, is initiated in the hospital before her discharge. In 1968 to 1970 this system was not available and less than 30% attended for family planning follow-up. Only a very small proportion refused contraception after termination (table V) and sterilization was accepted more readily by the skilled and unskilled manual workers than by the professional and intermediate groups. Over the past 12 months there has been increasing acceptance of intrauterine devices with the advent of a new generation of devices, such as the Copper-7 and Dalkon Shield; and less than 30% of patients have been referred elsewhere for family planning advice. Despite initiation of contraception in hospital after the termination patients still fail to attend for follow-up. Over 70% of those referred to their local family planning clinic failed to attend for follow-up visits. This emphasizes the need for a method of contraception that does not require regular medical care. With intrauterine devices, though routine check-ups are preferred, they are not essential. Liaison between hospital, general practitioner, and the local health authority is also of the utmost importance, particularly with regard to domiciliary family planning, as most of those failing to attend came from more socially deprived groups. Such patients have inherent difficulties over fitting in with hospital and clinic routines. Information is lacking also on attitudes in the community towards the effective use of contraception, and knowledge of where best to obtain advice and supplies. Further investigations along these lines are needed to design the optimum follow-up service for the prevention of repeated terminations.

Repeat terminations have shown a dramatic drop over the past two years in our area due to the intensive family planning policy

after termination. Nevertheless, the patients who come for repeat terminations are mainly from social classes IIIb, IV, and V (table VI). Those started on a method of family planning other than intrauterine devices tend to revert to the sheath or no method at all by the time of their second unwanted conception (table VII). This emphasizes their failure to persist in effective contraceptive methods.

To prevent the further rise in the total numbers of terminations of pregnancy it is necessary to have a comprehensive system closely linking those carrying out the terminations and those providing the family planning services. Only in this way will contraception become effective in the prevention of recurrent abortion.

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Screening in Medicine

Screening for Abnormal Haemoglobins: A Pilot Study

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Summary

A pilot study has been made of the implications of screening for abnormal haemoglobins in immigrant schoolchildren. An abnormality was detected by capillary blood haemoglobin electrophoresis in 8.4% of 6,835 children and a haemoglobinopathy outpatient clinic had to be established to deal with the heavy work load which resulted. The clinic was also used to determine the value of investigating the remaining members of the family once an abnormality had been detected in one child.

Healthy siblings with normal haemoglobin electrophoretic patterns and normal iron and folate levels were studied to determine a normal range for haemoglobin in relation to age for adequately nourished immigrant children. The lower limit of the normal range was close to the mean value minus $1\frac{1}{2}$ S.D.; by using this definition 10.3% of 280 children were subsequently found to be anaemic.

Population screening of this type is desirable, but further pilot studies of patient education, genetic counselling, organization of specimen collection, data processing, and follow-up health care facilities are required before screening is extended more widely in the United Kingdom.

Introduction

The level of immigration to certain areas of the United Kingdom is resulting in changes in medical practice; at least 20% of new patients registered at this hospital are now of Asian or Negro descent. When an abnormal haemoglobin is detected by electrophoresis in a hospital patient it is logical to investigate also the siblings, parents, and other relatives. This requires one interview to collect the specimens and at least one follow-up interview to explain the results, to give genetic counselling and perhaps advice on diet, and to investigate unexplained anaemia and other abnormalities. The organizational effort and increase in work load within the hospital can be considerable.

This random contact with immigrants, occasioned by their need to attend hospital, can be supplemented by a screening programme extended to families who would not otherwise be referred for hospital investigation. This more extensive form of screening requires careful consideration of the social, medical, organizational, and ethical problems it would entail. The haemoglobinopathy screening programmes recently introduced in the United States have already illustrated some of the problems which arise^{1,5} and the value of routine screening of this type has been questioned. In the United Kingdom there are in addition very great difficulties of communication because of language differences.

A pilot study originating from this hospital was therefore introduced to define more clearly the value and implications of screening immigrant schoolchildren for abnormal haemoglobins, particularly in respect of the work load which would be generated. Screening of these children without simultaneous determination of, at least, the haemoglobin level is illogical. There is, however, a lack of information on the normal haemoglobin range in adequately nourished immigrant children, and this pilot study was therefore used to determine a lower level of normality in relation to age.

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