

# PUBLIC AND PROFESSIONAL ATTITUDES TO A SCREENING PROGRAMME FOR THE PREVENTION OF CANCER OF THE UTERINE CERVIX A PRELIMINARY STUDY

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Exfoliative cytology has been widely used over the past decade as an aid to diagnosis of cancer of the uterine cervix. More recently it has been used increasingly in various centres in Great Britain for the discovery of precancerous conditions of the cervix, with the aim of preventing progression to invasive cancer (see Freeling, 1964). The accumulated experience justified consideration by the Ministry of Health of the possibilities of providing facilities for the screening of healthy women within certain age limits. As a necessary preparation for a general programme, the need was also felt for an investigation of public and professional attitudes to such a screening programme.

A pilot scheme for the screening of women between the ages of 25 and 60 years was therefore introduced in the Manchester area in 1963 (*Coll. gen. Practit. N.W. Fac. J.*, 1963). This was followed in January, 1964, by a pilot survey of public and professional attitudes, conducted by the newly-formed Department of Social Research at the Christie Hospital and Holt Radium Institute. The lines of this survey were dictated largely by reports of cytological screening programmes already carried out in other countries.

These earlier findings concern two main aspects: organization, and the attendance of women for cytological examination. The problems of organization turn upon who should take the smears and where they should be taken. Studies in the USA and Canada all point to the general practitioner as the key man for taking smears, whether he takes them in his surgery or in a special clinic (Read, 1964; Day, 1964; Breslow and Hochstim, 1964; Bryans, Boyes, and Fidler, 1964). He requires a well-organized laboratory service for reading the smears. A recent

study in one area of England (Wolfendale and Handfield-Jones, 1964) suggested that the number of general practitioners would be sufficient to carry out a general screening programme, though many respondents complained about lack of time or inadequate facilities. Freeling (1964) also found that laboratory facilities are generally inadequate, owing to the lack of trained cytotechnicians.

Experience in most countries has shown a certain pattern in the response of women invited to attend for screening (Bryans and others, 1964; Breslow and Hochstim, 1964; Gallup, 1964; Macgregor and Baird, 1963). Some women (possibly around 10 per cent.) will respond without any special invitation when they become aware that the service is available. A greater number (about 40 per cent.) need some additional stimulus, such as publicity or educational efforts, to be persuaded to respond. Lastly, an even larger group (which is about 50 per cent. in the studies quoted) will not respond to such measures of persuasion, and represent the hard core of resistance to the programme. Within this pattern of response, there are certain characteristics which throw light on where the main pockets of resistance can be expected. It appears that the women who are least likely to participate are predominantly those in the lower social classes (Class III, IV, V), of lower educational levels, or of lower income levels, depending on how the sample is stratified. They are also, unfortunately, the ones most at risk. Nevertheless, it should not be forgotten that the resistant group includes women of all socio-economic levels.

## METHODS AND SOURCES

In the Manchester research project into professional and public attitudes, data of two kinds were used: the records maintained by the Cytodiagnostic Laboratory at the Christie Hospital, and the results

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of a series of intensive interviews with members of the medical profession and the general public.

A first analysis was made of the records of smears taken from July, 1963, until October, 1964 (18,446). For several reasons these records could not be taken as offering a reliable guide to the future pattern of distribution in the area: they include smears screened for a number of Family Planning Association clinics before the general programme began; cytology sessions at local authority clinics did not start until some time after the project began; most of the smears were from women who had come in for some other examination (family planning, pre- or post-natal) involving a vaginal examination. A subsequent analysis was therefore made of the records for 3-monthly periods from May, 1964, to January, 1965, in an attempt to identify more accurately the trends in distribution.

The aim of our interviews was to discover something of the range and scope of the problems likely to be faced in a general screening programme and to compare the information so obtained with that derived from other similar programmes. Since this was a pilot project to provide the bases for a series of studies over the next few years, the informants were not intended as a representative sample: they were chosen for specific characteristics which promised useful information. The data must therefore be regarded as indicative rather than definitive.

Open-ended interviews were conducted with three doctors involved in organizing the laboratory services; with five medical officers of health; with doctors undertaking cytological smears at three Family Planning Association clinics; with nineteen general practitioners (representing 33 partners serving 94,000 patients); with six doctors concerned in public education on the subject; and with the heads of two large gynaecological departments, whose information was supplemented by the results of a postal survey of the 43 gynaecologists in the Manchester Hospital Region (Morris, personal communication). We also obtained information from twelve women who had had a smear taken in FPA or LA clinics, or by their family doctor.

The interviewers used an *aide memoire* to introduce a number of standard topics. They also invited each informant to discuss any problems that had been encountered or foreseen, to offer opinions on any aspect of the cytology programme, and to name others who might hold interesting views. Of those selected for interview none failed to respond.

#### RESULTS OF THE INVESTIGATION

By combining the findings of our interviews and the analysis of records, it was possible to envisage

the main problems likely to arise in any wider programme of cytological screening. The findings which follow have been grouped according to three different phases of a screening programme:

(i) The smears have to be taken, which means that women must attend, and that a person and a place must be provided for taking smears;

(ii) The smears have to be screened, which means adequate laboratory facilities and cytotechnicians;

(iii) The smears have to be repeated, which means keeping proper records and a decision on who is to be responsible for the recall of women.

#### (i) Taking of Smears

The attendance of women depends both on the amount of information made available to them and on their willingness to take advantage of it. In the Manchester pilot scheme, the pattern of attendance was not the same as in screening programmes carried out elsewhere. Most women had the smear taken when they came in for some condition that called for a vaginal examination. A minority asked for the smear to be taken, and they were mainly younger women of a higher educational level. The fact that the educational aspect of the programme has been deliberately limited by the need to avoid overburdening laboratory facilities has probably meant that only those in the 10 per cent. who respond immediately information becomes available have come voluntarily for a smear.

Data from the census figures for Great Britain (1 per cent. sample) for 1951 (which, when compared with the limited data so far available from the 1961 census, show negligible differences) give the age distribution of the female population in the area of the Manchester pilot scheme shown in Table I.

TABLE I  
FEMALE POPULATION IN THE MANCHESTER AREA\*  
BY AGE AND MARITAL STATUS  
Registrar General Census (1951) 1 per cent. sample

Age	Per cent.	Total	Single	Married	Divorced
25-29	14.5	92,500	19,800	72,000	700
30-34	13.5	86,900	11,900	73,100	1,900
35-39	15.3	98,600	13,000	83,500	2,100
40-44	15.7	101,300	15,000	80,100	6,200
45-49	13.9	89,500	14,600	68,400	6,500
50-54	14.3	91,900	15,200	65,800	10,900
55-59	12.8	82,400	11,000	53,600	17,800
Total	100	643,100	100,500	496,500	46,100

Total Population, all ages, 2,421,000.

Total Female Population, all ages, 1,276,200.

\*Manchester contains parts of Lancashire and Cheshire that gravitate to and are known as the Christie Hospital catchment area.

The proportion of women between the ages of 25 and 60 years in the total population (26.5 per cent.) is similar to the proportion found in other parts of the world where screening has been attempted. It gives some idea of the size of the problem to be tackled if full-scale coverage is ever to be achieved.

Fig. 1 compares the age group distribution of all women at risk in the area with the age group distribution of women who had a smear during the first year of the programme.

It was not possible to make a similar comparison according to social class, since data of this kind were not kept on the screening records. However, our interviews and experience in Scotland (Macgregor and Baird, 1963) suggest that the pattern would be similar to those which have emerged from other studies. This was the general impression of members of the medical profession interviewed and was supported by the experience of one local authority cytology clinic in a working-class area, which was in danger of being closed because so few women were attending.

We found differences of opinion about where women would prefer to have the examination done. It had been assumed when the pilot scheme was planned that preference would be for it to be done by the general practitioner (preferably a woman doctor),

and the possible importance of other centres was largely disregarded. Our analysis of the sources of the smears revealed a different picture, one which contradicted the consensus of opinions expressed in our interviews with members of the medical profession.

However, a comparison of the pattern over the first year with the pattern emerging during 3-monthly periods from May, 1964, to January, 1965, shows the growing importance of the general practitioner in taking smears (Table II), though more smears are

TABLE II  
PERCENTAGE DISTRIBUTION OF SMEARS TAKEN, BY SOURCE, COMPARING THE PATTERN OF THE DATA FOR THE PERIOD 1963-64 WITH THOSE OF THREE RECENT 3-MONTHLY PERIODS.

Date	Total Number of Smears	Source (per cent.)		
		GP	Clinics	
			FPA	LHA
1963-64 .. ..	18,446	36.5	42.9	20.6
May to July, 1964	3,685	41.3	37.8	20.9
August to October, 1964 .. ..	3,799	44.9	34.4	20.7
November, 1964, to January, 1965	3,688	47.5	30.6	21.9

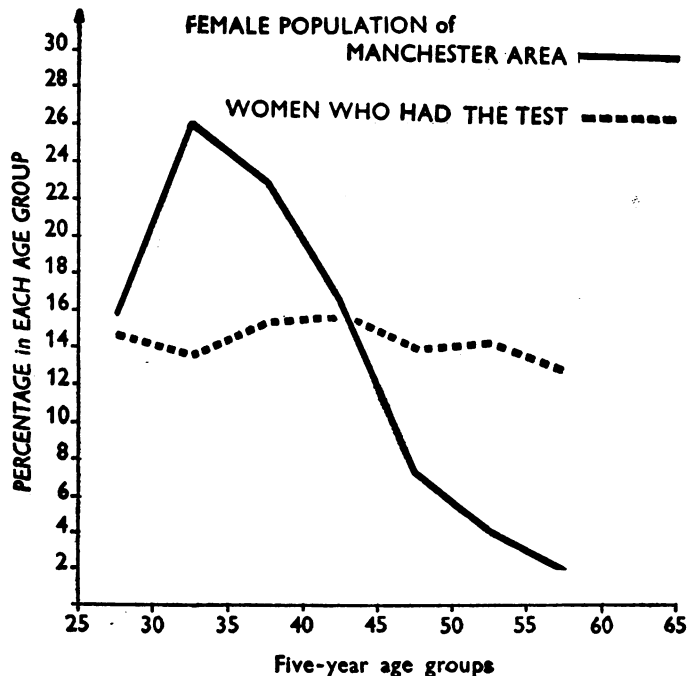


Fig. 1.—Age distribution of the female population of the Manchester area compared with that of women who had a smear test.

still received from clinics. Nevertheless, the true pattern of preference will not be established until a full-scale educational programme persuades large numbers of healthy women to attend for a smear alone and not simply as an adjunct to some other examination. It is sometimes argued that if a cytological smear is taken whenever a vaginal examination is necessary, whether in a clinic or in the surgery, a considerable proportion of the women at risk will be screened. This is true, but it is in dealing with the remaining healthy women who have no reason to attend a clinic that the general practitioner assumes a role of special importance. This came out clearly in the study of Breslow and Hochstim (1964) in Alameda County, California, where 90 per cent. of the women who had had a smear were persuaded to do so by their own doctors. The general practitioner has a vital part to play, whether he takes the smear himself, or acts rather as a persuader and refers the woman to a clinic. Our survey showed, however, that whatever the eventual pattern of preference may be, there are substantial numbers of women who prefer the anonymity of a clinic, where everyone goes for the same purpose; these women would not be prepared to ask their family doctor to take a smear.

A further analysis of possible differences in the ages of women according to where they went for the test gave some support to the hypothesis that women of a younger age range would be found to have attended FPA clinics, whereas local authority cytology clinics and family doctors would attract the older women. However, the differences in the age ranges involved were by no means so marked as had been expected (Fig. 2).

The median age for the whole sample was 35.26 years (interquartile range  $Q_1=30.89$  and  $Q_3=41.71$ ). For the general practitioner's surgery the median age was 37.21 years ( $Q_1=30.85$  and  $Q_3=44.07$ ); for the local authority clinics the median age was 39.83 years ( $Q_1=32.50$  and  $Q_3=47.76$ ); for the FPA clinics the median age was 34.51 years ( $Q_1=30.63$  and  $Q_3=39.14$ ).

Information from gynaecologists at the main hospitals in the area of the pilot scheme threw further light on the question where smears should be taken. They showed a marked initial preference for smears to be taken in clinics (post-natal, gynaecological, VD, and FPA) where "services are good and smears reliable". It was also said that "enthusiasm for cytological screening depends more on the gynaecologists in charge than on the pathologists", and in this respect there is particular interest in an exploratory survey of opinion (Morris, personal communication) among the 43 consultant gynaecologists in the Manchester Regional Hospital Area shortly before the pilot scheme began. They were asked if they would be prepared to make cytological studies as a routine in their gynaecological out-patient department and in their post-natal clinic. Four out of the 43 said they would not be prepared to use cytology in either place. Of the remaining 39, six said they would use it in their gynaecological, but not their post-natal clinic. The remaining 33 were eager to use cytology in both clinics, but four had reservations. One of the four was concerned about accommodation in his post-natal clinic; one was sceptical about cytology but open to be convinced; the other two were unhappy about references to a large number of false positives. The four who said they would *not* make use of cytology were prepared to use it in selected cases but not as a routine procedure. One thought it financially impractical to provide a routine reporting service; two were concerned about "the ambiguity of reports" and one was worried about "the production of neurosis in patients and their husbands by false positive or equivocal reports." It would be interesting to see if these views undergo any modification as the pilot scheme progresses.

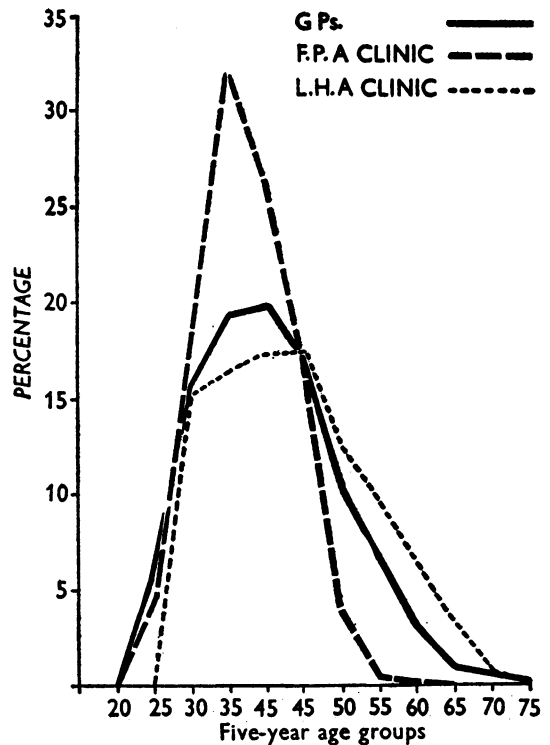


FIG. 2.—Comparative distribution of smears in each 5-year age group as percentage of total from each source.

Other opinions voiced by gynaecologists in our interviews were of special interest in view of the fact that the pilot scheme was based largely on smears taken by general practitioners. It must be borne in mind, we were told, that in one medical school at least the training of medical undergraduates did not include practical instruction in the use of a speculum until 10 years ago. Some older general practitioners may therefore be unfamiliar with the technique and reluctant to do it without instruction and practice to enable them to take a proper smear. Some simply never carry out a vaginal examination and have neither the facilities nor the inclination to do so. Provision should therefore be made for such doctors to refer their patients to a clinic. For those who want to take smears but who have no proper facilities in their surgeries, it was suggested that provision should be made for them to book time at a clinic, where they could examine their patients under favourable conditions.

From the interviews with general practitioners, it was clear that few were fully aware of the importance of their role in the screening programme. During the summer of 1963, general practitioners in the area were invited to participate in the pilot scheme, and some 400 returned postcards indicating their interest. Later, 250 attended special week-end briefing sessions at the Christie Hospital. Interest gradually spread among the general practitioners, and by the end of the year about 500 had applied for the free cytology kits. This gave rise to cautious optimism, tempered by some alarm in the screening laboratory, since according to the estimate published in the *NW Faculty Journal of the College of General Practitioners*, each doctor could screen all the women at risk in his practice by taking a little over 150 smears a year. (This estimate assumed a practice of 2,000 patients, of which some 470 would be women between the ages of 25 and 60.) However, the records show that, although 500 doctors had applied for kits, they had submitted only 2,377 smears during the year.

This contrast between the actual and potential, together with views expressed in the interviews, pointed to many obstacles to the achievement of the estimated three or so smears a week needed to screen 150 in a year. In fact, the number of smears taken by individual doctors ranged from two or three to fifty or sixty over the year. The fact that a doctor had applied for a kit did not mean he had taken smears. Several simply wanted to have a kit on hand in case a patient should ask for a smear; some applied for a kit only when asked by a patient and used it on that occasion only; others took smears simply as an

additional diagnostic measure when performing a vaginal examination.

Very few general practitioners had tried to persuade their patients to have a cytostest as a preventive measure, and the few who had tried said they had met apathy or resistance. The reasons they offered for this lack of success were: lack of time on the doctor's part to devote to persuasion, and the unwillingness of women to submit to a vaginal examination when unprepared and visiting the doctor for some other ailment. These failures of persuasion raise the more general question of the role of the family doctor in preventive medicine. With rare exceptions, his contact with his patients is when they are sick, and this creates obvious difficulties for his participation in the screening of healthy women.

It was thought that the appearance of a positive in his series of smears might stimulate a general practitioner to persuade more of his patients to have smears taken. We investigated this in five practices where positives had been reported, but there was no evidence that the appearance of a positive led to a subsequent increase in the number of smears taken, either immediately or over a period of time. Nevertheless, the possible effect of reporting other conditions found by the screening laboratory needs to be investigated. For instance, in one local authority clinic where detailed records are kept, three positives had been reported from 280 smears, but in addition they had found twelve cases of *Trichomonas* infection, four erosions, and two cases of leukoplakia; and one general practice had the remarkable figure of four positives and ten *Trichomonas* infections in the first 51 smears taken. It may be that, as a way of creating greater interest for general practitioners and cytotechnicians, more emphasis should be placed on the possibility of finding other conditions that require attention, regarding cervical smears as a way of screening for more than simply precancerous and cancerous conditions. However, it should be borne in mind that it is not the positive findings, but the reassuringly large number of negatives, that attracts the general public.

It was particularly interesting to note the unwillingness of the medical profession to mention cancer. We found that most of the women who had had a smear taken as a part of a vaginal examination for some other reason, whether in a surgery or a clinic, were not told that the test was connected with the prevention of cervical cancer. Even more remarkably, a very large number of such women had not even been told that a smear had been taken. A similar reluctance to mention cancer was found among the women who

knew about the test. They tended to mention it to their husbands or friends only when they had received the results of the test. The period of 7 to 14 days before a report reached them was, for these women, filled with anxiety which they kept hidden from others. This factor will have to be taken into consideration if a general preventive programme is to be successful.

#### (ii) *Screening of Smears*

Laboratory facilities were inadequate for a general programme owing to the lack of trained cytotechnicians. However, the facilities had been geared to the gradual development of the pilot scheme and the position is constantly under review to ensure that expansion of the programme is not impeded. Difficulties that could not have been foreseen in the planning stage arose with the sudden tragic death of Dr Peter Smith, who had been responsible for organizing the Cytodiagnostic Laboratory, but the position is slowly improving as training progresses. Most of the smears from healthy women in the pilot area have been read at the Christie Hospital. They are sent in by post, and records of each are kept at the laboratory. Much help with the clerical work has come from members of a local voluntary organization. It has become clear that a postal cytodiagnostic service based on central laboratories is perfectly feasible.

Although the provision of technicians trained in cytology will remain a matter of concern for some time, there is another problem which awaits solution—the status of technicians employed on cytological work. It must be made clear that training in cytology will not lead them away from the main stream of laboratory work and, hence, from opportunities for advancement in the future.

#### (iii) *Repeat of Smears*

To be able to offer continuous protection from cancer of the cervix, a screening programme has to be so organized as to ensure that the smears are repeated at regular intervals (triennially in the Manchester pilot scheme).

Our survey showed that no adequate provisions were made for the recall of women. From the interviews no unique answer emerged to the question of on whom responsibility for recall should rest. One opinion commonly expressed was that responsibility should be left to the women themselves, but this is impractical, since many of them either had no idea why the doctor had taken a smear, or were unaware that it had been taken. Another frequent opinion was that responsibility should be centralized and that invitations for repeat smears should be sent to each

woman at appropriate intervals. Even if it were possible to cope with a correspondence of 215,000 invitations a year for this area, experience in this and other fields has shown that the response of women would be minimal, owing to the very small influence a letter has on making an action-oriented decision. Yet another opinion was that the responsibility should lie with the general practitioner, who has records of his patients and could add further information on the smear test to them. Under the present system, even this solution is impracticable, since most clinics inform the general practitioner only about suspicious or positive smears. In the long run, however, the family doctor seems to be best placed to undertake recall, though he would need more help and cooperation from other services. This would also fit in with the opinion very frequently advanced in our interviews that GPs should be paid separately (*i.e.* not from the pool) for taking smears, and that additional facilities should be made possible, such as receptionists, adequate premises, and time to devote to the women within this age group.

#### DISCUSSION

In this report, we have adopted the broad definition of "prevention" given by the recent WHO Expert Committee on Prevention of Cancer (1964):

Prevention may be considered as the elimination of, or protection against, factors known or believed to be involved in carcinogenesis, and the treatment of precancerous conditions.

The cytological test is regarded as a measure of prevention, demanding that the principles applicable to other preventive health procedures be applied to the conduct of a screening programme to detect precancerous conditions of the cervix. These call for measures to secure the full participation of healthy women and for an attitude of mind in the medical profession oriented towards the prevention rather than the treatment of disease.

A certain amount of apathy or resistance is to be expected from women in the age groups at risk. Some of the studies cited earlier describe the pattern of attendance of women according to social classes. This represents a simplified version of the response pattern, since even in the higher classes by no means all women respond, although a greater proportion do so than in other classes. It would therefore appear that social class and educational level are not in themselves decisive factors. To make a decision to have a smear taken, and then to act on that decision, requires information on the subject, awareness of one's own susceptibility to the threat of disease, and

belief that the action recommended offers the possibility of relief from the threat (Hochbaum, 1958; Rosenstock, 1960). The uneven distribution of the response among women in various projects seems to reflect a lack of consideration of these requirements in the methods of public persuasion usually applied. This was shown in a demonstration programme carried out in Dade County, Florida (Fulghum and Klein, 1963), where special methods of approach were applied to women of the lowest socio-economic group, those receiving state aid for dependent children, who were said to be "functionally illiterate". That 57 per cent. responded in Dade County, and subsequently 74 per cent. in Palm Beach County, shows that techniques exist which have not as yet been properly utilized in the educational aspects of cancer prevention.

Our survey confirmed the opinion expressed in most studies that the general practitioner's is the key role. His opportunities for persuading women to have the examination can scarcely be overestimated, but nevertheless it is clear that clinics have a very important part to play too. A general programme has to allow for smears to be taken both as a diagnostic aid in every instance when a vaginal examination is normally made (family planning, pre- and post-natal examinations, etc.), and as a purely preventive measure.

It was a surprise to discover that so many of the women were not told that a smear had been taken. The reluctance of the medical profession to mention the word "cancer" drew attention to a general attitude to cancer that affects doctors almost as much as laymen, and this aspect of the problem needs to be explored further. Such an open manifestation of reluctance was not recorded in similar studies elsewhere.

Few of the studies mentioned seem to have given attention to the problem of record-keeping, yet this is of paramount importance to the ultimate success of a screening programme. A recall system will have to be worked out, backed up by a well-planned educational programme, since the number of women who fail to undergo repeat smears increases progressively on each occasion. A study of records and recall is now in an advanced stage of planning in the Manchester area.

#### CONCLUSIONS

Our pilot survey in connexion with the pilot scheme of cytological screening in the Manchester area revealed certain problems for the future.

(1) The attitude of the medical profession towards the preventive aspects of the programme will have

to be reviewed, if they are ever to fulfil their vital role in influencing well women to have a smear;

(2) Education designed for women in the risk age group will have to take into consideration socio-economic and educational levels to ensure that all have equally effective access to information. Health educational techniques for this purpose have already been devised in other preventive health programmes and must be used in cytological screening.

(3) The programme cannot be restricted only to the general practitioner's surgery. Other clinics must be included both to provide an alternative for those women who prefer them and to exploit any situation in which a vaginal examination is performed. This will call for further consideration of the part played in the programme by the Family Planning Association clinics, with regard to their status and remuneration.

(4) More emphasis needs to be given to the value of this test in revealing conditions other than cancer and precancerous lesions.

(5) The training of an adequate number of technicians to enable laboratories to cope with the probable intake of smears is a matter of urgency. It is also important that their status should be defined, so as to give them a feeling of permanence or an opportunity to turn to other work when the initial pressures have subsided, or if other tests replace cytology.

(6) Records should be kept with adequate data both to allow regular evaluation of the programme and to provide the basis of a competent recall service for repeat smears at regular intervals.

#### SUMMARY

A preliminary study has been made of public and professional attitudes to a pilot programme of mass screening by cervical cytology. The findings are based on an analysis of records kept in the Cyto-diagnostic Laboratory of the Christie Hospital combined with the results of a series of intensive interviews with members of the medical profession and the public.

It is clear that mass screening cannot be based exclusively on the surgeries of GPs: parallel facilities are also required in clinics, both because substantial numbers of women prefer the anonymity of a place where all go for the same purpose and because some GPs do not undertake or intend to begin cytological examinations. Few GPs realized the importance of their role in mass screening, whether solely as persuaders of their patients or as takers of cytological

smears. Most regarded the smear only as an additional diagnostic tool and not as a preventive measure.

Few women had come exclusively for a smear; the great majority had smears as an adjunct to some other procedure involving a vaginal examination. Of those who did ask for a smear, most were younger women of higher educational level. Few of the women who had had a smear taken during some other examination had been told that the test was connected with the prevention of cervical cancer. Even more surprisingly, a large number of these women did not even know that a smear had been taken. This poses obvious problems for future recall at regular intervals. How recall should eventually be organized was a matter on which there was no general agreement.

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