Problems of cervical cancer screening programmes

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SUMMARY. The feasibility of using an age–sex register as a basis for a cervical cancer screening programme was investigated in a London practice serving both inner city and suburban populations. Only about 25% of 810 women aged 35–59 years who had not recently been screened responded to an invitation to attend a practice well woman clinic for a cervical smear. Nearly 30% of the invitations were returned 'not known at this address' and there was no reply from the remaining 45%. A high proportion of incorrect addresses considerably reduces the effectiveness of a cancer screening programme based on an age–sex register covering an area with a mobile population and also makes it difficult to follow up women with abnormal smears adequately. Opportunistic screening remains essential and every effort should be made to encourage women to be responsible for their own cancer screening programmes.

Introduction

THE Department of Health and Social Security[1] has asked all district health authorities to set up local cervical cancer screening programmes for women aged 20–65 years. It is suggested that the generation of call and recall lists should be undertaken by family practitioner committees from computerized age–sex registers and that the recall of women with abnormal smears should be centred on the cytology laboratory computer. It is also suggested that a designated community physician should be responsible for the implementation, monitoring and evaluation of the system.

The difficulty of keeping age–sex registers updated, especially in inner city areas where the population is very mobile, has been well documented.[2-4] This factor, plus the reluctance of some women[5-7] to attend for cervical smears, has made many professionals sceptical about the effectiveness of such programmes. In order to explore these problems a study of a cervical screening programme for women aged 35–59 years based on a practice age–sex register was undertaken in a London practice.

Method

The practice has about 10 000 patients divided among three surgeries, each with its own age–sex register set up in 1984. Although the four doctors have a main base they all do some sessions at the other surgeries. Surgery A is situated in a middle class area of an outer London borough, while surgeries B and C serve a mainly working class population in an inner London borough where about 20% of the population is from ethnic minority groups. A weekly well woman clinic by appointment is held at each surgery by the same practice nurse and the evening clinic held at surgery C and staffed by the same nurse, is available to women from other surgeries.

Women aged 35–59 years were identified from the age–sex registers at each surgery and their records were examined for details of previous cervical smears and gynaecological operations as well as for changes of address. Of the 1451 women identifed, 119 (8.2%) had had a hysterectomy or were under treatment for a gynaecological condition and were excluded, together with seven women (0.5%) who were known by their doctor to have a terminal or severely disabling condition which would prevent them from attending the surgery. This left 1325 women eligible for screening, of whom 515 (38.9%) were recorded as having had a smear within the previous five years (including 10 women who had had a recent smear at a hospital or health authority clinic). The 810 eligible women who were overdue for a smear, of whom 497 (61.4%) had never had a smear, were sent a letter inviting them to phone or write for a specific appointment to attend the practice well woman clinic for a cervical smear. One follow-up letter was sent to those who did not reply. For administrative purposes the survey was carried out for each surgery separately over a period of 18 months from October 1985 to March 1987.

The chi-square test was used to compare differences in response rates and uptake between surgeries and age groups.

Results

Two hundred and eight (25.7%) of the 810 overdue women responded to the invitation and attended for a smear, 21.5% to the first letter and 4.2% to the follow-up letter. This raised the proportion of eligible women who had been screened to 54.6%. Two hundred and thirty eight (29.4%) letters were returned 'not known at this address' by the Post Office or new occupant and there was no reply from the remaining 364 women (44.9%) (Table 1). One-third of the women who did not reply but had not apparently moved away had not attended the surgery in the last five years.

Table 1. Responses of 810 overdue women to letters offering cervical cancer screening by surgery.

	Number (%) of overdue women			
	Surgery A (*n* = 214)	Surgery B (*n* = 229)	Surgery C (*n* = 367)	Total (*n* = 810)
Responders				
Responded to 1st letter	42 (*19.6*)	57 (*24.9*)	75 (*20.4*)	174 (*21.5*)
Responded to 2nd letter	12 (*5.6*)	9 (*3.9*)	13 (*3.5*)	34 (*4.2*)
Total	54 (*25.2*)	66 (*28.8*)	88 (*24.0*)	208 (*25.7*)
Non-responders				
Letter returned 'not known'	81 (*37.9*)	67 (*29.3*)	90 (*24.5*)	238 (*29.4*)
No reply: Attended surgery in last 5 years	34 (*15.9*)	71 (*31.0*)	136 (*37.1*)	241 (*29.8*)
Not attended in last 5 years	45 (*21.0*)	25 (*10.9*)	53 (*14.4*)	123 (*15.2*)
Total	160 (*74.8*)	163 (*71.2*)	279 (*76.0*)	602 (*74.3*)

n = total number of overdue women.

There were different distributions of non-responders between the three surgeries (Table 1). At surgery A significantly more women were reported to have moved away and fewer to be regular surgery attenders than at the other two surgeries ($P<0.001$); indeed, in the younger age group (35–44 years) at surgery A 47.7% of letters were undelivered.

Younger women in general were more mobile: of 379 invitations to younger women 32.5% were returned by the Post Office compared with 26.7% of 431 letters to older women. More older women, however, failed to respond to the letter (45.9%) than younger women (43.8%) and overall the difference in response rate between the two age groups was not significant (27.4% for older women versus 23.7% for younger women).

Table 2 shows that, since fewer older women had been screened before the study started, the final level of screening achieved for the older age group (51.8%) remained low compared with younger women (57.2%), but there was no significant difference in screening levels between the age groups or between the surgeries.

Of the 364 women who did not reply to the invitation but had not apparently moved, 248 (68.1%) had no record of ever having had a smear.

Cytology results

Of the 208 initial smears from women who responded to the screening invitation, 171 (82.2%) were normal, 23 showed inflammatory changes only, eight mild dysplasia and two moderate dysplasia. Smears from four women showed marked dysplasia (or cervical intra-epithelial neoplasia grade 3) and these women were referred immediately for colposcopy. Three of these women had had smears showing inflammatory changes five or six years earlier and one had had a normal smear nine years earlier. Two women whose initial smears showed inflammatory changes were retested a year later when progression had occurred to moderate dysplasia. Women attending surgery A provided seven abnormal smears, those attending surgery B nine, while those attending surgery C provided 21, including three of the four severely dysplastic smears. This difference was not significant.

Table 2. Proportions of eligible women screened in last five years before and after the study by age group and surgery.

	Number of women (% of eligible women)			
	Surgery A	Surgery B	Surgery C	Total
Age 35–44 years				
Eligible for screening	202	168	305	675
Already screened in last 5 years	105 (*52.0*)	67 (*39.9*)	124 (*40.7*)	296 (*43.9*)
Responded to invitation	20	28	42	90
Total screened in last 5 years	125 (*61.9*)	95 (*56.5*)	166 (*54.4*)	386 (*57.2*)
Age 45–59 years				
Eligible for screening	193	199	258	650
Already screened in last 5 years	76 (*39.4*)	71 (*35.7*)	72 (*27.9*)	219 (*33.7*)
Responded to invitation	34	38	46	118
Total screened in last 5 years	110 (*57.0*)	109 (*54.8*)	118 (*45.7*)	337 (*51.8*)
All ages				
Total screened in last 5 years	235 (*59.5*)	204 (*55.6*)	284 (*50.4*)	723 (*54.6*)

Discussion

One of the major uses of age–sex registers is to provide target lists of eligible people for screening purposes, but there has been relatively little investigation of the feasibility of using family practitioner committee registers for cervical cytology programmes. Reported error rates in addresses, based on letters returned by the Post Office or new occupants, range from 8.2% for practice registers to 17.1% for family practitioner committee registers.[2-4]

Nearly 30% of the letters sent out in this survey were returned undelivered and no reply was obtained from a further 45%. The low response rate for women registered at surgery A reflected the high mobility of this middle class group, as shown by the 48% of undelivered letters in the younger age group. The population of surgery B was less mobile, but relatively more women who had received the letter failed to attend for a smear, and for surgery C this problem was even more apparent. The high error rate in addresses needs to be taken into account when a screening programme is being evaluated. As both Elkind[6] and Sansom[8] point out, the response rate should perhaps be calculated using a denominator of letters received rather than those sent.

Over two-thirds of the women whose letters were not returned but who did not respond, had no record of ever having had a cervical smear. Although some of these women will have moved and others have had a smear elsewhere that was not reported to the general practitioners, a significant proportion will be too frightened or unwilling or too busy to attend at the times and the venues suggested.[5-7]

Wilson and Leeming[9] found they had a better response to their invitation if they included a definite date and time in their letter. In our survey women were invited to phone or write for an appointment and were offered several alternative dates for an afternoon or evening clinic. The follow-up letter resulted in an increase of 4.2% in the response rate (34 responses). Wilson and Leeming increased their response rate by 7% with the first reminder and another 3.7% with a second reminder. However, the cost of sending out an additional 364 letters for perhaps 15–20 additional responses did not seem worthwhile. The appreciable proportion of patients in this practice without a telephone and the difficulties of reaching the right person precluded follow-up by telephone.

As in other reported surveys[6,7] many of the non-responders were rarely seen in the surgery and for these women opportunistic screening by the general practitioner may be worthwhile. The case for continuing opportunistic screening of women attending gynaecological and genitourinary medical clinics also remains strong, as the incidence of cervical cancer in women attending these clinics is high and they may otherwise slip through the screening net. It is essential, however, that the results of smears taken in all outside clinics are sent to the appropriate general practitioners and the district hospital and community clinics have links with the local screening programme through the cytology laboratory computer. Care must be taken to see that the programmes are regularly updated with the results.

Even with the opportunistic screening a large number of wrong addresses creates problems in following up women with abnormal smears. The fact that several women in this survey had had abnormalities previously detected which had apparently progressed underlines the importance of careful follow up of women with any kind of abnormal smear.[10-12] This lack of follow up

is not only poor medical care, it also makes it impossible to assess the true incidence and prevalence of cervical cancer in the screened population.

Every effort, therefore, should be made to keep both the family practitioner committee and general practice registers up to date. Silman[4] found that 20% of patients with an incorrect address were still attending the practice. Therefore, it may be necessary to check the address of all patients who attend the surgery, particularly if they are rarely seen. In addition, the records of women who require urgent recall must be tagged so that the women can be reminded of the need for a repeat smear should they contact the surgery.

Finally, women should be encouraged to take responsibility for their own screening. A woman should receive a written report of the result of her smear, together with a date for the next smear, which could be presented to a new general practitioner if she moves. This is important since it can take months for a new patient to get onto a family practitioner committee or general practice register. In order to try to reach women who would not otherwise respond to screening invitations, health education programmes, through local voluntary organizations, chemist shops and local radio, should inform women of the importance of having regular cervical smears and encourage women to accept invitations to screening programmes.

References

1. Department of Health and Social Security. *Circular DA (85) 8. Cervical cancer screening.* London: DHSS, 1985.
2. Fraser RC, Clayton DG. The accuracy of age–sex registers, practice medical records and family practitioner committee registers. *J R Coll Gen Pract* 1981; **31:** 410-419.
3. Sheldon MG, Rector AL, Barnes PA. The accuracy of age–sex registers in general practice. *J R Coll Gen Pract* 1984; **34:** 269-271.
4. Silman AJ. Age–sex registers as a screening tool for general practice: size of the wrong address problem. *Br Med J* 1984; **289:** 415-416.
5. Duguid HLD, Duncan ID, Currie J. Screening for cervical intra-epithelial neoplasia in Dundee and Angus 1962–81 and its relation with invasive cervical cancer. *Lancet* 1985; **2:** 1053-1056.
6. Elkind AK, Haran D, Eardley A, Spencer B. Computer-managed cervical cytology screening: a pilot study of non-attenders. *Public Health* 1987; **101:** 253-266.
7. Standing P, Mercer S. Quinquennial cervical smears: every woman's right and every general practitioner's responsibility. *Br Med J* 1984; **289:** 883-885.
8. Sanson CD, MacInery J, Oliver V, *et al.* Recall of women in a cervical cytology screening programme. An estimate of the true response rate. *Br J Prev Soc Med* 1975; **29:** 40-47.
9. Wilson A, Leeming A. Cervical cytology screening: a comparison of two call systems. *Br Med J* 1987; **295:** 181-182.
10. Singer A. The abnormal cervical smear. *Br Med J* 1986; **293:** 1551-1556.
11. Elwood J, Cotton RE, Johnson J, *et al.* Are patients with abnormal cervical smears being adequately managed? *Br Med J* 1984; **249:** 891-898.
12. Fox H. Cervical smears: new terminology and new demands. *Br Med J* 1987; **294:** 1307-1308.

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