

Inaccuracy of FHSA registers: help from electoral registers

Graham Bickler, Stephen Sutton

South East London Health Authority, London SE1 9RY

Graham Bickler, consultant in public health medicine

ICRF Health Behaviour Unit, Institute of Psychiatry, London SE5 8AF

Stephen Sutton, senior scientist

Correspondence to: Dr Bickler.

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The inaccuracy of family health services authority (FHSA) registers has important implications for the breast and cervical screening programmes.¹⁻³ For example, 35% of breast screening invitations in south east London did not reach the women they were intended for.¹ Although the problem is widely recognised, there has been little discussion on how the registers can be used more effectively, though one approach is to use them in combination with the electoral register.⁴

Methods and results

In the context of a research programme on uptake of breast screening, we checked screening batch lists from Lambeth, Southwark, and Lewisham FSAs for women aged 50-64 against the relevant electoral registers. The women were divided into "matches" and "non-matches." An interviewer went to random samples of the addresses listed to establish whether the woman lived there and if so to obtain information on sociodemographic characteristics and health beliefs. This visit was preceded by a letter and the number of letters returned undelivered by the Post Office (Post Office returns) was recorded.

The table shows that an estimated 73.3% of women on the FHSA lists were living at the address listed. This is a measure of the accuracy of the FHSA register as assessed by comparison with information obtained by visiting the address. The "matches" column shows that of those women whose names appeared on both registers, 91.9% were living at the address listed. Thus, using the two registers in combination yielded a much better "hit rate." By contrast, only 12.7% of the non-matches were residing at the address listed. Analysis of the interview data did not show any substantive differences between the matches and non-matches.

Checking the FHSA register (for women age 50-64) against the electoral register and targeting only those whose names appeared on both registers raised the accuracy of the addresses obtained from 73.3% to 91.9%. Only 4.1% of those actually living at the FHSA

register address would be missed, but 23.5% of the original addresses would not need to be visited. No significant biases were introduced. The number of Post Office returns underestimated the number of wrong addresses by 66.1%.

Comment

Given the simplicity and benefits of checking one register against another, what are the implications? For population based research—particularly where it involves personal interviews—such a checking procedure would increase efficiency. Costs would decrease as interviewers would go to fewer addresses to obtain the same sample size. Put another way, it would be possible to have larger sample sizes for the same cost without introducing important biases.

For the breast and cervical screening programmes which rely on the FHSA register, crude uptake rates could be adjusted by checking a sample of the FHSA register against the electoral register, making assumptions about the probabilities of matches and non-matches actually living at the addresses listed, and altering the denominator appropriately. A correction could also be done by making assumptions about the relation between the Post Office return rate and the true inaccuracy rate: it seems from this and other studies that a ratio of between 2:1 and 3:1 is reasonable.¹⁵ This would be far cheaper than checking against the electoral register, but less accurate. FHSA lists could be updated more efficiently by asking general practitioners and their practice staff to focus on the non-matches, thus lightening their administrative load.

We recommend that researchers consider using this technique to improve the efficiency of research that uses FHSA registers as a sampling frame, and that the national breast screening programme use this technique—along with the Post Office return rate—to provide more valid information for comparing uptake rates.

- McEwen J, King E, Bickler G. Attendance and non-attendance for breast screening at the south east London breast screening service. *BMJ* 1989;299:104-6.
- National Audit Office. *Cervical and breast screening in England*. London: HMSO, 1992.
- Bowling A, Jacobson B. Screening: the inadequacy of population registers. *BMJ* 1989;298:545-6.
- Bowling A, Hart D, Silman A. Accuracy of electoral registers and family practitioner committee lists for population studies of the very elderly. *J Epidemiol Community Health* 1989;43:391-4.
- Silman AJ. Age-sex registers as a screening tool for general practice: size of the wrong address problem. *BMJ* 1984;289:415-6.

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Summary of information obtained from interviewers' visits to 1691 addresses on FHSA lists matching and not matching those on electoral register. Values are numbers (percentages)

	Matches	Non-matches*	Full sample†
Original sample	1293 (76.5)	398 (23.5)	1691 (100)
Addresses visited	977 (75.6)	189 (47.5)	
Outcome:			
Address did not exist	0	10 (5.3)	21 (1.2)
Address visited but no information obtained	20 (2.0)	15 (7.9)	58 (3.4)
Target person alive and living at the address‡	898 (91.9)	24 (12.7)	1239 (73.3)
Target person not known at the address or had moved	55 (5.6)	136 (72.0)	359 (21.2)
Post Office returns§	14 (25.5)	49 (36.0)	122 (33.9)
Other	4 (0.4)	4 (2.1)	14 (0.8)
Total	977 (100)	189 (100)	1691 (100)

*Screening batch address not found on electoral register, or address found but no one with same first or last name was listed.

†Estimates for full sample derived by combining frequencies for matches and non-matches using appropriate weights, rounding to nearest integer, and then converting to percentage.

‡The 4.1% decrease in coverage that would be incurred by targeting only matches and omitting non-matches can be estimated from figures in this row as $100a/(a+b)$, where $a=(12.7)(398)$ and $b=(91.9)(1293)$.

§Person not known at address or had moved. There were also five Post Office returns from 10 non-existent addresses among non-matches.