Costs and cost effectiveness of cardiovascular screening and intervention: the British family heart study

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Abstract

***Objective*—To measure costs and cost effectiveness of the British family heart study cardiovascular screening and intervention programme.**

***Design*—Cost effectiveness analysis of randomised controlled trial. Clinical and resource use data taken from trial and unit cost data from external estimates.**

***Setting*—13 general practices across Britain.**

***Subjects*—4185 men aged 40-59 and their 2827 partners.**

***Intervention*—Nurse led programme using a family centred approach, with follow up according to degree of risk.**

***Main outcome measures*—Cost of the programme itself; overall short term cost to NHS; cost per 1% reduction in coronary risk at one year.**

***Results*—Estimated cost of putting the programme into practice for one year was £63 per person (95% confidence interval £60 to £65). The overall short term cost to the health service was £77 per man (£29 to £124) but only £13 per woman (−£48 to £74), owing to differences in utilisation of other health service resources. The cost per 1% reduction in risk was £5.08 per man (£5.92 including broader health service costs) and £5.78 per woman (£1.28 taking into account wider health service savings).**

***Conclusions*—The direct cost of the programme to a four partner practice of 7500 patients would be approximately £58 000. Annually, £8300 would currently be paid to a practice of this size working to the maximum target on the health promotion bands, plus any additional reimbursement of practice staff salaries for which the practice qualified. The broader short term costs to the NHS may augment these costs for men but offset them considerably for women.**

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Introduction

A reduction of 12% in coronary risk was obtained by the British family heart study, a cardiovascular screening and intervention programme led by practice nurses.[1 2] Without knowing the scale of the cost burden needed to achieve this effect, it is not possible to judge whether the programme is worth implementing or whether resources could be deployed more effectively elsewhere.

The objective of this study was to measure the costs and cost effectiveness of the programme from a health service perspective. In addition to the direct costs of the programme, the wider but short term net costs to the health service were estimated by using individual data on resource use collected during the trial.

Methods

In each of 13 towns across Great Britain a matched pair of willing practices was selected for the trial.[1 2] In each town one practice was randomly allocated to the intervention while the other served as the external comparison arm. Within each intervention practice, all men aged 40-59 years (and their families) were randomised to either the intervention arm or an internal comparison arm. At baseline, families within the intervention arm were invited for screening and appropriate lifestyle advice. The screening involved the assessment of smoking and previous medical history and the measurement of body mass index, blood pressure, cholesterol concentration, and glucose concentration. An overall coronary risk score[3] was calculated for each subject, and the subject was informed which 10th of the risk score distribution they were in. Each man and his partner were followed up individually over a year, with frequency of follow up dependent on their risk score at the initial screen: those in the top two tenths were invited for follow up appointments every two months, whereas those in the bottom two tenths were invited back at one year only. Subjects were also invited for follow up of individual high risk factors according to the protocol. At one year the subjects in the intervention group were invited for rescreening and the comparison group was screened for the first time.

The subjects were the 2011 men aged 40-59 years and their 1425 partners who attended the initial screen of the intervention practices, of whom 1767 men and 1217 women returned at one year. While the primary comparison for the clinical effect was with the external comparison group, the internal comparison group is believed to be more appropriate for comparisons of costs. This is because in terms of clinical outcomes, there was no evidence of any spillover of the intervention to the internal comparison group; also, comparison with the internal comparison group will not be subject to interpractice variability in referring and prescribing. Hence, all analyses in this paper compare subjects in the intervention group with those in the internal comparison group (2174 men and 1402 women) at one year.

The primary outcome measures of this economic study are the mean cost and the mean cost per 1% reduction in coronary risk. This risk reduction was derived from the observed reduction in Dundee risk score,[3] which was adjusted to account for bias and then converted from an individual to a population risk.[2] For each cost comparison, a difference in mean cost between the intervention and comparison groups together with a standard error was calculated for each practice. An overall difference in mean cost was calculated by pooling together the differences across the 13 practices, using a random effects meta-analysis.[4] Such an analysis takes into account any observed heterogeneity between practices and so the standard error of the difference is larger than if the comparison assumed no differences between practices.

PROGRAMME COSTS

Unit costs were estimated from external sources and are detailed in the footnotes to the tables. Complete details of unit costs and sources are available on request. These unit costs were applied to those resources used in the trial which would be necessary in a service setting, where tasks relating only to the conduct of the trial would not be included.

The final screen of the trial at one year was excluded from the analysis on the grounds that it constituted the first screening of a second year of the programme. It may have had some motivating influence that contributed to

the clinical effect observed in the intervention group; however, there is evidence to suggest that rescreens do not contribute to risk factor reduction.[5]

It was estimated by the trial coordinator that, on average, the initial screening took an hour and a quarter (1.5 hours being the average duration minus 15 minutes required for research tasks) for a couple, amounting to 37.5 minutes per subject. The other two types of follow up appointments were both estimated to be 25 minutes long (30 minutes minus 5 minutes research time), utilising consumables according to the protocol. It was assumed that in practice, 45 minute and 30 minute appointments respectively would be booked per person for an initial screen and follow ups, implying downtime (a period for changeover or overrun) of 7.5 minutes per person for an initial screen and 5 minutes for the follow ups. Rates of "did not attends" (those who failed to attend a booked appointment rather than those who did not respond to an invitation) were not available from the British family heart study dataset. Unpublished audit data from the Oxcheck trial found non-attendance rates of 6.1% for initial appointments and 20.3% for follow ups,[5] which we have used. It was assumed that whereas a cancelled appointment slot could be redeployed, an unattended appointment would be wasted.

During the trial, nurses spent on average about 7.5 hours a week on administration (searching records, inviting subjects and recording information), amounting to 1.14 hours per subject per year. We assumed that two thirds of this administration time could be reallocated to a secretary. Included in our costs are this secretarial time, plus the stationery and telephone calls required to make the appointments.

The cost of training a nurse was based on the trial training comprising 17 full days (including five days' induction in the practice and two refresher days a year). In practice, it was assumed, on the basis of the trial, that a nurse would spend two days a year with a nurse adviser from the family health services authority (nurse grade H) for support, with the cost including transport and travelling time.

We estimated that in a service setting and based on average trial attendances, a practice nurse working 37.5 hours a week, 45 weeks a year, could screen and follow up 526 people annually. This estimate is greater than the 296 individuals screened and followed up on average by the trial nurses[2] because we have removed the time required for research purposes and excluded the final screens while still allowing time for quality assurance and support. We have also averaged the training time over five years and not included the time spent on the 255 (about 20 per nurse) other family members, mostly young children, who also attended at the initial screen but for whom data are incomplete. Potentially, more than 526 people could be seen if time made available by non-attenders was redeployed or if time savings were achieved when concurrent follow ups were combined into one appointment.

An average sized four partner practice of 7500 patients would have 11.8% eligible men.[6] If, as in the trial, 67% had partners, there would be 1500 eligible people per practice. With a response rate of 61%,[2] 915 people would need to be seen per practice; this would require 1.75 full time nurses a year to implement the programme.

In order to calculate confidence intervals, a programme cost was determined for each individual, consisting of the mean fixed cost of the intervention (equipment, room, training, recruitment, supervision, and wasted appointments) plus a cost for the initial screen and a cost for each of the follow ups attended.

ADDITIONAL HEALTH SERVICE COSTS AND SAVINGS

All subjects were asked at one year what drugs prescribed by the general practitioner they were currently taking. Each drug was weighted by a mean prescription cost[7] according to its category in the British National Formulary. It was assumed that by multiplying each prescription by 12 we could estimate a drug cost over the previous year for each individual, recognising that this would be a better approximation for the group than for the individual.

Subjects in five of the 13 practices at one year were asked how many health service visits they had made over the past year, excluding those pertaining to the intervention. Each visit was weighted by an externally estimated mean cost.

To estimate the incremental cost of the programme (that is, the additional cost of implementing the programme to the health service as a whole in comparison with it not being instituted), we calculated an overall cost for each individual (in the five practices), comprising their programme cost, drug cost, and the cost of their other health service visits. The intervention and comparison groups were then compared.

Two sets of cost effectiveness ratios were estimated using firstly the mean programme cost and secondly the overall cost, each divided by the estimated mean reductions in coronary risk.[2]

Table 1—*Fixed costs (£) of British family heart study programme implemented over one year*

Item	Total cost*	Annual equivalent cost†	No screened‡	Cost per person screened
Equipment:				
Reflotron (including accessories)	4 670.34	1045.97	915	1.14
Other§	1 878.62	420.73	526	0.80
Quality assurance:				
Reflotron	146.41	146.41	915	0.16
Other	97.64	97.64	526	0.19
Overheads¶	2 000.00	2000.00	526	3.80
Recruitment	363.95	81.49	526	0.15
Training:				
Initial course plus induction week	2 605.58	583.54	526	1.11
Refresher days	687.40	687.40	526	1.31
Nurse support or supervision†	422.01	422.01	526	0.80
30 Minutes daily of nurse time for quality assurance	1 419.00	1419.00	526	2.70
Subtotal	14 017.35	6842.93		12.05
Administration costs**††				9.34
Nurse's time wasted owing to non-attenders††				4.34
All fixed costs				25.84

*1994-5 Prices (£ sterling) including VAT at 17.5% on all equipment, quality assurance, and consumables.
†Equipment and training costs were discounted to give an annual equivalent cost using the Treasury discount rate (6%) with an assumed life expectancy of five years.
‡Reflotron desktop analyser (assumed to be a practice cost) is divided by the total number of patients in the practice receiving the intervention while all the other costs (assumed to be fixed to the nurse) are divided by the number of patients that a full time nurse could screen and follow up in one year.
§Uniform, scales, height stick, sphygmomanometer, Smokerlyzer, and computer terminal.
¶Cost of a dedicated, serviced room of 10 m^2 as estimated by district valuation officer.
**Includes practice nurse time. Practice nurses were costed at the midpoint of the Whitley Council grade G scale, including 11.2% on costs.
††Although these costs vary with the numbers screened, data at individual level were not available; hence these items are treated as fixed costs in the analyses.

Results

PROGRAMME COSTS

The fixed costs came to £25.84 for every subject receiving the intervention (table 1). The cost of screening and follow up came to £37.30 per subject (table 2). This gives an average cost per individual screened of £63.14. Of this, practice nurse time made up 66%, consumables 17%, equipment 10%, secretarial time 5%, and nurse support 2%.

SENSITIVITY ANALYSIS

With nurse time making up the largest cost element of the programme, we would expect the results to be sensitive to the assumptions about the time spent on each individual. If, as occurred in the research context of the

Table 2—*Cost of initial screen and follow up appointments*

	Unit cost (£)*	Attenders as proportion of all individuals screened† (attenders as proportion of those invited to appointment)			Mean cost per person screened (£)
		Men	Women	All	
Initial screen	13.31	1.00	1.00	1.00	13.31
Follow up for overall risk:					
Appointment 1	9.43	0.65 (0.84)	0.55 (0.79)	0.61 (0.82)	5.75
Appointment 2	9.43	0.38 (0.64)	0.29 (0.56)	0.34 (0.61)	3.20
Appointment 3	9.43	0.20 (0.42)	0.12 (0.33)	0.17 (0.39)	1.60
Appointment 4	9.43	0.08 (0.22)	0.05 (0.17)	0.07 (0.20)	0.66
Appointment 5	9.43	0.04 (0.22)	0.03 (0.17)	0.03 (0.20)	0.27
All appointments	1.35	1.04	1.22	11.48	
Follow up for individual high risk factors:					
Body mass index at 1 month	6.45	0.46 (0.62)	0.31 (0.44)	0.40 (0.54)	2.58
Body mass index at 2 months	6.45	0.33 (0.46)	0.21 (0.31)	0.28 (0.40)	1.81
Blood pressure at 1 month	6.45	0.32 (0.39)	0.18 (0.23)	0.26 (0.32)	1.68
Blood pressure at 2 months	6.45	0.06 (0.07)	0.02 (0.03)	0.05 (0.06)	0.32
Blood pressure at 3 months	6.45	0.02 (0.03)	0.01(0.01)	0.02 (0.02)	0.13
Cholesterol at 1 month	8.07	0.20 (0.22)	0.16 (0.18)	0.18 (0.21)	1.45
Cholesterol at 2 months	8.07	0.10 (0.11)	0.09 (0.10)	0.09 (0.10)	0.73
Cholesterol at 3 months	29.07‡	0.06 (0.07)	0.06 (0.07)	0.06 (0.07)	1.74
Glucose at 1 month	7.78	0.08 (0.10)	0.05 (0.06)	0.07 (0.08)	0.55
Smoking at 1 month	6.53	0.15 (0.25)	0.13 (0.22)	0.14 (0.24)	0.92
Smoking at 2 months	6.53	0.10 (0.15)	0.07 (0.13)	0.09 (0.14)	0.59
All appointments		1.88	1.30	1.64	12.50
Mean cost of initial screen and all follow up appointments					37.30

*Includes nurse time (45 minutes for initial screen and 30 minutes for follow ups), consumables, and laboratory testing, according to the protocol.
†Baseline intervention group of 2011 men and 1425 women.
‡Figure is higher as according to the protocol patients received a further battery of tests for their continued high cholesterol concentration.

Table 3—*Numbers of drugs prescribed one year after health check*

	Intervention group (1767 men, 1217 women)		Internal comparison group (2124 men, 1402 women)		Increase in No of drugs per subject	Annual cost weighting (£)*
	No of drugs	No per subject	No of drugs	No per subject		
Antihypertensive drugs	397	0.133	434	0.123	0.010	82.80
Lipid lowering drugs	33	0.011	21	0.006	0.005	291.96
Drugs for diabetes	57	0.019	49	0.014	0.005	121.08
Hormone replacement therapy†	107	0.088	105	0.075	0.013	179.04
Other drugs	1411	0.473	1577	0.447	0.026	‡
All drugs	2005	0.672	2186	0.620	0.052	

*Mean net ingredient cost by British National Formulary category plus on costs and inflated to 1994/5 prices[7] multiplied by an assumed number of prescriptions of 12.
†Averaged over women only.
‡Various.

trial, a nurse sees on average only 296 people a year[2] the cost of the programme rises to £100.59 per person.

An alternative scenario could be that not only can the nurse see 526 patients as we have calculated, but also that spare space and equipment capacity exist within the practice to implement the programme. Removing these costs and the training and support cost reduces the cost per person from £63.14 to £53.78.

A third scenario might assume that all time made available by non-attenders is redeployed usefully. This would decrease the cost from £63.14 to £57.56.

Fourthly, given its potentially motivating influence, it might be appropriate to include the cost of the final screen. Assuming 30 minutes for a final screen, the cost of the programme increases from £63.14 to £81.10 with the nurse able to see 401 people a year.

ADDITIONAL HEALTH SERVICE COSTS AND SAVINGS

Subjects in the intervention group had been prescribed five more drugs per 100 subjects than those in the comparison group (table 3). Prescriptions for antihypertensive drugs, drugs for use in diabetes, lipid lowering drugs, and hormone replacement therapy, which might have been expected to increase, accounted for less than half of this difference.

On average the intervention group received fewer non-intervention health checks and consultations from their general practitioner and from their practice nurse than did the comparison group (table 4). However, other health checks (those not carried out by the general practitioner) and other consultations were more frequent for the intervention group. Outpatient visits were slightly more frequent in the intervention group, whereas inpatient visits were more frequent in the comparison group.

The cost of the additional drug prescriptions for the intervention group was estimated to be approximately £7 per person (table 5 and fig 1), offset in part by the lower costs of the other health service visits. For both comparisons, however, the confidence intervals are large and include zero. The overall cost of the intervention was estimated to be £51.63 per person initially screened.

COST EFFECTIVENESS

In terms of the direct programme costs for a year, a 1% reduction in coronary risk will cost on average £5.26 per person (table 6). After the broader costs to the NHS are included, the cost effectiveness was estimated at £4.30 per 1% reduction in coronary risk (table 6).

Discussion

PROGRAMME COSTS

Although the direct programme costs may be fairly easily estimated in a trial context, they need to be adjusted to reflect the likely use of resources in routine service situations. The cost per individual depends on assumptions concerning nurse time and numbers screened, as shown by the sensitivity analysis. The mean cost and cost effectiveness also depend on the precise package of care and the unit cost assumptions. If nurses were employed on a lower grade, programme costs would be substantially reduced, but we have no evidence for the impact this would have on the clinical effectiveness of the programme. Similarly, if any other component of the programme is removed then the effectiveness and cost effectiveness are less certain.

In the trial, much of the inviting and screening of individuals by the nurse occurred out of office hours to maximise coverage, implying that additional payments for antisocial hours may be necessary in practice. Moreover, the clinical effect attained by these well resourced trial teams may not be achievable in practice, where surgery staff are likely to be busier and less motivated with respect to this intervention.[2]

For a four partner practice with a list size of 7500 the programme's resource use would amount to approxi-

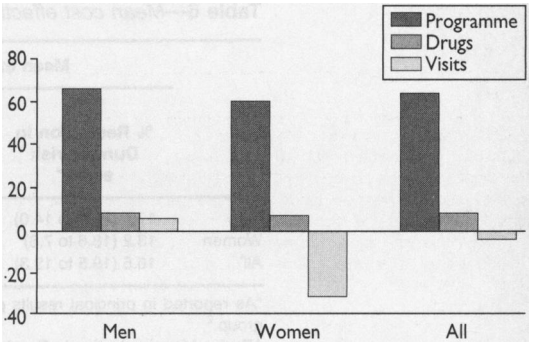

Fig 1—*Incremental cost per person screened, British family heart study*

Table 4—*Numbers of health service visits over the year of intervention**

	Intervention group (585 men, 422 women)		Internal comparison group (755 men, 552 women)		Difference in No of visits per subject	Cost weighting (£)
	No of visits	No per subject	No of visits	No per subject		
General practitioner health checks	30	0.03	105	0.08	−0.05	7.62†
Other health checks	40	0.04	26	0.02	0.02	3.72‡
Other general practitioner consultations	2014	2.00	3045	2.33	−0.33	7.62†
Practice nurse consultations	524	0.52	850	0.65	−0.13	3.72‡
Other consultations	1541	1.53	1516	1.16	0.37	3.72‡
Outpatient visits	1088	1.08	1281	0.98	0.10	26.00§
Inpatient visits	101	0.10	144	0.11	−0.01	923.40¶
All visits	5337	5.30	6966	5.33	−0.03	

*Excluding visits pertaining to the intervention itself. Subjects from five of the 13 practices.
†Based on a visit duration of 9.3 minutes.[8]
‡Whitley pay scales—mid-range of nurse grade G plus on costs and overheads for 9.3 minute visit.
§One consultant outpatient or nurse clinic or ward attendance.[9]
¶Acute average length of stay of 5.7 days at £162.00 per day.[9]

Table 5—*Mean cost (£) per individual screened*

	Intervention group	Internal comparison group	Difference (95% confidence interval)*
Programme costs†			
Men	66.50		66.01 (63.33 to 68.68)
Women	58.34		57.82 (54.69 to 60.95)
All	63.14	0.00	62.68 (59.92 to 65.44)
Drug costs‡			
Men	70.39	61.07	7.59 (−3.40 to 18.58)
Women	82.25	74.18	5.81 (−8.64 to 20.27)
All	75.23	66.21	7.02 (−2.90 to 16.96)
Other visit costs§			
Men	136.86	118.99	5.03 (−33.46 to 43.53)
Women	169.17	193.77	−31.83 (−87.72 to 24.05)
All	150.39	150.57	−4.67 (−38.47 to 29.14)
Overall costs§			
Men	260.20	171.54	76.89 (29.33 to 124.45)
Women	296.93	277.43	12.85 (−48.04 to 73.75)
All	275.58	216.26	51.63 (12.37 to 90.90)

*Differences were calculated for each practice separately and then pooled over practices. Pooled differences are therefore not exactly equal to differences in crude values.
†2011 men and 1425 women in intervention group.
‡1767 men and 1217 women in intervention group; 2124 men and 1402 women in internal comparison group.
§585 men and 422 women in intervention group; 755 men and 552 women in internal comparison group.

mately £58 000. Under current arrangements £8300 would be paid to a practice of this size working to the maximum target on the health promotion bands. Additionally, depending on individual circumstances and local family health services authority guidelines, the practice might be reimbursed for a proportion of the salary costs of the additional staff time (which constitute 71% of the £58 000 total), and the authority might meet the costs of the nurse support. When implemented over one year, as in the trial, the costs of the programme are not likely to be fully reimbursed.

ADDITIONAL HEALTH SERVICE COSTS AND SAVINGS

The net effect of the programme on other sectors of the health service could not easily be estimated from the data available but may have been considerable. These effects, though difficult to quantify, are crucial to any assessment of overall cost effectiveness.

There was some evidence that extra drug costs were associated with the intervention, although this was not statistically significant. The numbers of other health checks, other consultations, and outpatient visits seemed to increase, which may partly be due to onward referrals to health professionals, such as dietitians, according to the protocol. However, the nurse led intervention seemed to be replacing general practitioner health checks and other consultations with general practitioners and practice nurses. This suggests that the intervention costs may in part be offset by cost savings in other areas of the health service.

The non-returners, as well as biasing the clinical results,[2] may also have biased the data on additional drugs and health service visits. Non-returners were heavier and more likely to be smokers, but they had a lower prevalence of coronary disease; hence the direction of bias in this economic analysis is uncertain.

COST EFFECTIVENESS

Estimates of the broader cost to the health service are affected by large confidence intervals which, in combination with possible sensitivity of the results to unit cost and assumptions about nurses' time, imply uncertainty around the cost effectiveness figures.

There seem to be gender differences in terms of the costs and effects. With respect to the direct programme cost, costs for women were lower, reflecting fewer follow ups. Since the clinical effect in women was proportionately smaller still, the programme seemed to be more cost effective for men (£5.08) than for women (£5.78). If the broader NHS costs are included, while the drug utilisation between sexes is similar, women seem to have substantial cost savings in terms of their additional health service visits, whereas the men had additional costs—perhaps the nurses were providing some additional support for women such that other health service visits were reduced. The overall cost was much greater for men (£76.89) than it was for women (£12.85). Hence the intervention may be more cost effective for women—£1.28 per 1% reduction compared with £5.92 for the men. However, it may be inappropriate to disaggregate the cost effectiveness ratios: the programme took a family centred approach. A different clinical effect might be observed if men and women were invited and screened individually.

Attendances increased with age, and the programme cost per subject also increased. However, there was no

Table 6—*Mean cost effectiveness. Values in parentheses are 95% confidence intervals*

	Mean effect		Mean programme cost (£)		Mean overall cost (£)	
	% Reduction in Dundee risk score*	% Reduction in coronary risk†	Mean cost‡	Cost per 1% reduction in coronary risk	Mean cost‡	Cost per 1% reduction in coronary risk
Men	17.6 (21.1 to 14.0)	13	66.01 (63.33 to 68.68)	5.08	76.89 (29.33 to 124.45)	5.92
Women	13.2 (18.6 to 7.3)	10	57.82 (54.69 to 60.95)	5.78	12.85 (−48.04 to 73.75)	1.28
All	16.5 (19.5 to 13.3)	12*	63.14 (59.92 to 65.44)	5.26	51.63 (12.37 to 90.90)	4.30

*As reported in principal results paper; 1767 men and 1217 women in intervention group, 2124 men and 1402 women in internal comparison group.[2]
†Derived from reduction in Dundee risk score.
‡As reported in table 5.

Key messages

- The effect on coronary risk of a nurse led cardiovascular screening and intervention programme in general practice may not be sufficient to justify the costs involved
- Patient specific data from the British family heart study are used in this detailed cost effectiveness analysis
- The costs of the programme to general practitioners was estimated with reasonable precision: an average four partner practice of 7500 patients will require 1.75 nurse years to implement this programme, costing £58 000
- The direct costs of the programme may not be fully reimbursed under the current health promotion banding scheme
- The broader impact on drug costs and use of other health care resources is uncertain, and larger trials will be needed to estimate these important effects

clear trend in terms of clinical effect by age and subsequently no trend in cost effectiveness by age.

PRIVATE COSTS

In addition to the costs incurred by the health service, the intervention may impose costs on the individual. By combining average attendances with average earnings[10] and including previously estimated travel costs,[11] we estimated that the average cost to a person receiving the intervention for a year would be £42.00 for men and £26.00 for women. These costs would be expected to affect attendance and compliance as well the cost effectiveness, when judged from a societal perspective.

CONCLUSIONS

This economic evaluation has attempted to look at the broader health service costs of the British family heart study intervention, although, like the clinical study, it concentrated on impact only in the short term. These costs were shown to be potentially important—the data suggest that they may add to the programme costs for men but may act as a considerable offset for women—but confidence intervals were wide and included zero. As a result, although the direct programme costs can be estimated fairly easily with limited confidence intervals, the overall cost impact remains unclear and hence there is uncertainty about the overall cost effectiveness of the intervention. A much larger study would be needed to estimate these important effects reliably. In general, due to variability between practices and between subjects, economic evaluations using broader definitions of cost require much larger samples than studies measuring narrowly defined clinical effects. This study has provided an important lesson about the dangers of assuming that cost effectiveness can be easily and lightly estimated.

To assess the cost effectiveness of the intervention relative to other health care programmes, it is necessary to convert the reduction in coronary risk into a common unit of effectiveness such as life years gained. Such a conversion is attempted in the accompanying commentary paper,[12] in which the British family heart study intervention is compared with the broadly similar Oxcheck intervention, evaluated in this issue,[13] and with other health promotion programmes. It is unlikely that the direct cost of the programme to an average size practice would be fully reimbursed under the current health promotion banding scheme.

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