

Cost-effectiveness of a primary care based physical activity intervention in 45-74 year old men and women: a randomised controlled trial

W Stevens, M Hillsdon, M Thorogood, D McArdle

Abstract

Objective—To assess the cost-effectiveness of a primary care based intervention aimed at increasing levels of physical activity in inactive people aged 45-74.

Methods—A total of 714 inactive people aged 45-74, taken from two west London general practices, were randomised into two groups. Intervention subjects were invited to a consultation with an exercise development officer, and offered a personalised 10 week programme to increase their level of regular physical activity, combining leisure centre and home based activities. Control subjects were sent information on local leisure centres. All subjects were followed up at eight months.

Results—There was a net 10.6% (95% confidence interval 4.5 to 16.9%) reduction in the proportion of people classified as sedentary in the intervention group compared with the control group, eight months after the intervention. The intervention group also reported an increase in the mean number of episodes of physical activity per week, as compared with the control group (an additional 1.52 episodes (95% confidence interval 1.14 to 1.95)). The cost of moving a person out of the sedentary group was shown to be less than £650. The cost of moving someone to the now commonly recommended level was estimated at almost £2500.

Conclusions—Moderate physical activity can be successfully encouraged in previously sedentary men and women aged 45-74 through a primary care based intervention. The process of recruitment was the most important variable cost. A high uptake rate would maximise cost-effectiveness, and sensitivity analysis suggests that unit costs could be halved with a more effective recruitment strategy.

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Keywords: physical activity promotion; primary care; middle aged

A recent report on physical activity and health by the US Surgeon General¹ highlighted the main effects of physical activity on health and disease: lower total mortality rates and decreased risk of cardiovascular mortality, colon cancer, and non-insulin dependent diabetes. In addition, regular physical activity prevents or delays high blood pressure, reduces blood pressure in those with hypertension, and relieves the symptoms of depression and anxiety. A meta-analysis relating to physical activity

in the prevention of coronary heart disease concluded that the relative risk of developing coronary heart disease in the least active compared with the most active was 1.9,² similar to that of other risk factors such as smoking and hypertension.

It has been estimated that seven out of 10 men and eight out of 10 women take insufficient exercise to derive health benefits.³ Current recommendations⁴ are that adults should undertake either vigorous exercise three days a week for at least 20 minutes on each occasion or moderate intensity exercise five days a week for at least 30 minutes on each occasion. The first of these recommendations was derived mainly from the effect on cardiorespiratory endurance, but recently the benefits of less vigorous activity has become recognised, particularly for those who take little or no exercise. The recommendation of moderate activity is not meant to replace that for vigorous activity, but rather to complement it.

We report a randomised controlled trial of the effectiveness and cost effectiveness of a "Prescription for Exercise" scheme, based in primary care. The aim of the scheme was to increase levels of physical activity in inactive people aged 45-74.

Primary care was chosen as the base for the scheme to ensure recruitment of a wide range of participants, as representative as possible of the British population. It has been estimated that almost 80% of people visit their doctor's surgery at least once a year.⁵

Methods

RECRUITMENT TO THE TRIAL

To identify currently inactive people, a self assessment questionnaire was sent to everyone on the surgery list aged 45-74. The three page questionnaire asked for basic demographic data (education, ethnicity, marital status, and economic activity) and a self assessment of the number of episodes of moderate and vigorous exercise, undertaken for at least 20 minutes, in the last four weeks. A list of activities was included to describe typically moderate and vigorous activity in terms of the activities of everyday life (see table 1). The questionnaire was adapted from a self administered seven day recall questionnaire used in other community

Table 1 Classification of moderate and vigorous activities

Moderate	Vigorous
Brisk walking	Jogging/running
Heavy gardening	Competitive sports
Cycling for pleasure	Swimming lengths briskly
Heavy DIY	Climbing stairs
Swimming leisurely	Fast cycling

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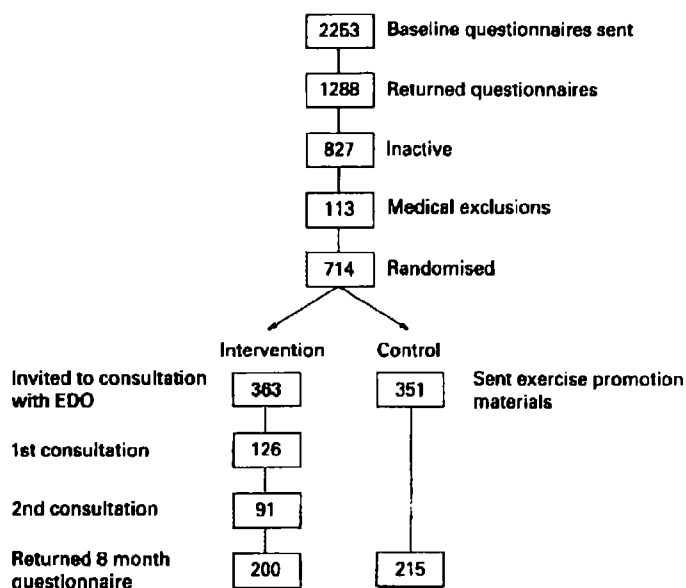


Figure 1 Study design. EDO, exercise development officer.

interventions.⁶ People who returned the completed physical activity questionnaires were classified into four levels of activity:

- sedentary—fewer than four 20 minute episodes of moderate or vigorous intensity activity in the previous four weeks;
- low intermediate—between four and eleven 20 minute episodes of moderate or vigorous intensity activity in the previous four weeks;
- high intermediate—12 or more 20 minute episodes of moderate or vigorous intensity activity in the previous four weeks, but less than either of the current recommendations;
- active—a minimum of either 20 30 minute episodes of moderate intensity exercise or 12 20 minute episodes of vigorous intensity exercise.

Subjects in the first three groups were regarded as inactive and eligible for randomisation into the trial, unless there was a medical reason for excluding them—for example, being registered disabled or having a diagnosis of heart disease. Eligible subjects were randomised using a random number generator to either the intervention or the control group.

NATURE OF THE INTERVENTION

The intervention subjects were sent a letter from their general practitioner inviting them to attend a consultation with an exercise development officer at a local leisure centre, which was centrally located within the ward. The consultation consisted of:

- a full explanation of the scheme;
- a medical/lifestyle questionnaire/consent form;
- physical measurements (height/weight/body mass index);
- assessment of present activity level;

(e) options available to be more physically active;

(f) introduction to the physical activity diary.

An important aspect of the intervention was the lack of any preset goals or minimum achievements. Participants were made aware of the existing recommendations on physical activity and health, but they were neither expected nor pressured into achieving these standards. The options to become more physically active were designed to increase what the participants already did, rather than to try to force major changes to lifestyle.

The exercise programme lasted for 10 weeks, after which subjects were invited to return for a second consultation to discuss their progress.

Control subjects were sent information in the post on local leisure centres and health clubs along with information on physical activity and health. Figure 1 shows a summary of the trial.

OUTCOME EVALUATION

Eight months after randomisation, all subjects received a follow up questionnaire on self assessment of physical activity levels. The primary outcome of the trial was the change in reported levels of physical activity in the eight months between the completion of the baseline and follow up questionnaires. Subjects who did not complete the second questionnaire were assumed not to have changed their activity level.

STATISTICAL ANALYSIS

Statistical analysis was carried out using SPSS for Windows version 6.1. Differences between the intervention and control groups were tested using the comparison of means test and the *t* test of significance. Unless otherwise stated, results are described on an "intention to treat" basis, with those subjects for whom there was no outcome measure being assigned to the activity level they reported at the start of the study.

ETHICS

Ethical approval was given by the Ealing, Hammersmith and Hounslow Health Authority Ethics Committee.

Results

RECRUITMENT

The baseline questionnaire was sent to 2253 people, and 1288 returned completed questionnaires, a response rate of 57%. A comparison of the original general practice lists with the population returning the questionnaire showed that 63% of women returned a questionnaire compared with 46% of men. The response rate for subjects aged 65–74 years was 64%, while that for those aged 55–64 years was 54%, and the youngest age group (45–54 years) had a response rate of 37%. Of those who returned the questionnaire, 827 (64%) were classified as not active—that is, in the lower three activity categories—but 113 of them were excluded from the study on medical grounds. A total of 714 subjects were randomised into the two trial groups.

Table 2 Demographic and health related characteristics of the sample

	Intervention group (n=363)	Control group (n=351)
Percentage men	40	44
Mean age (years)	59.1	59.2
Age band (%)		
45-54	37	36
55-64	26	28
65-74	37	36
Body mass index (%)		
<20	4	5
20-25	50	53
>25	46	42
Current smokers (% of total)	18	17
Demographics		
Economically active (%)	55	52
Ethnicity (%)		
White	87	83
Black	5	4
Asian	4	8
Other	4	5
Education (%)		
Degree/teaching	28	30
A level	12	12
O level/GCSE	11	15
Other	9	13
None	36	32
Physical activity level group (%)		
Sedentary	55	51
Low intermediate	42	45
High intermediate	3	4
Active	0	0

Table 3 Mean number of occasions of physical activity in the four weeks before follow up

	Intervention	Control	Difference	95% Confidence interval
Moderate physical activity	5.09	3.64	1.45	1.03 to 1.74
Vigorous physical activity	0.86	0.78	0.08	0.01 to 0.30
All episodes	5.95	4.43	1.52	1.14 to 1.95

RANDOMISATION

There were 363 subjects randomised to receive an invitation for a consultation with an exercise development officer (the intervention group) and 351 subjects randomised to receive an information pack on leisure centre facilities in the post (the control group). Table 2 gives details on baseline characteristics of the intervention and control groups, and shows that the groups were broadly similar, with no significant differences.

UPTAKE OF THE INTERVENTION EXERCISE PROGRAMME

Of the 363 subjects randomised to the intervention group, only 126 (35%) attended the first consultation with the exercise development officer. Ninety one subjects (25%) returned for the second consultation at the end of the 10 week exercise programme.

PHYSICAL ACTIVITY LEVELS AT FOLLOW UP

Table 3 shows the mean number of occasions of physical activity in the previous four weeks reported by the intervention and control groups at eight months follow up. It must be

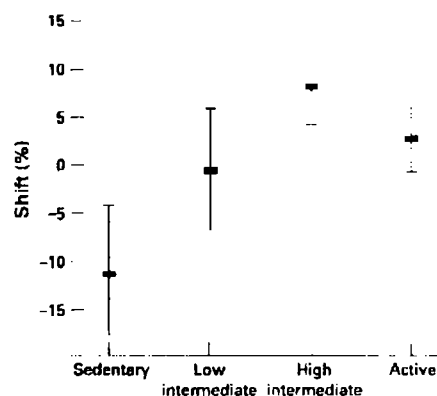


Figure 2 Change in the proportion of subjects in each physical activity level group, relative to the control, between baseline and eight month follow up, with 95% confidence intervals.

noted that all measures of physical activity are self reported and as such must be open to the usual levels of scrutiny. Both moderate and total occasions of physical activity were significantly greater in the intervention group. Vigorous activity was also higher in the intervention group but did not reach significance.

Table 4 shows leisure centre usage and total physical activity in subjects classified as sedentary and low intermediate at baseline (no high intermediate subjects completed all parts of the trial). Subjects who were more active at baseline were more likely to have used the leisure centre at some time during the four weeks before the first consultation while both groups increased their usage during the eight months. Table 4 also shows that at follow up both groups were exercising away from the leisure centre at least as often as they were exercising at it.

Figure 2 shows the percentage change in activity categories at eight months in both intervention and control subjects. There is a reduction in the number of subjects in the lowest two activity categories and an increase in the highest two categories in the intervention group, with similar but smaller changes in the control group. Figure 3 shows the eight month activity level of subjects by their baseline level of physical activity. Subjects not available at follow up (n = 163) were assumed not to have changed. Overall, 79 subjects moved into a higher level of physical activity with only 17 moving down. The biggest changes were from sedentary to low intermediate (14%) and low intermediate to high intermediate (14%). Few subjects moved into the active group.

COSTS

Recruitment costs were calculated using a top down approach. All resources were costed unless

Table 4 Leisure centre usage and total activity by baseline level of physical activity in intervention subjects completing all stages of the study

Baseline activity status	Percentage of patients reporting using a leisure centre at 1st consultation	Mean number of visits to leisure centre in 4 weeks before baseline	Percentage of patients reporting using a leisure centre at 8 month follow up	Mean number of visits to leisure centre in 4 weeks before follow up	Mean occasions of physical activity in 4 weeks before follow up
Sedentary (n=55)	4	2.5	16	4.1	7.9
Low intermediate (n=36)	25	2.2	33	4.6	9.6

Promotion of physical activity

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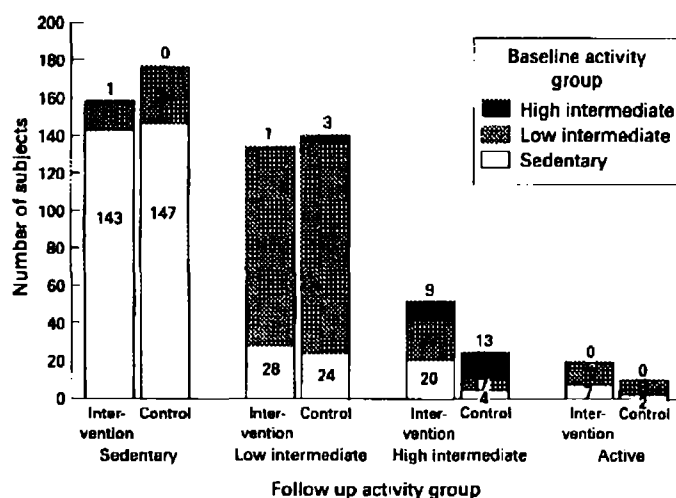


Figure 3 Number of subjects in each physical group at follow up by baseline group (intervention $n = 363$; control $n = 351$).

Table 5 Costs of recruitment by stage

	Stage 1 (identification as inactive)	Stage 2 (invited for consultation)	Stage 3 (completed programme)
Population	2253	363	363
Response	1288	126	91
Response rate (%)	57	35	25
Postage	£985	£227	£30
Stationery	£380	£145	£315
Labour*			
Administration	£952	£224	£840
EDO	—	£984	£18 040
Equipment	—	—	£4 819
Total costs	£2517	£1580	£24 044

*Labour costs include institution costs as well as wage costs; EDO, Exercise Development Officer.

they were deemed to be used for research purposes only. For costing of the baseline recruitment (stage 1), the costs of questionnaire design and production, mailing, and follow up of those people who did not reply first time were included. However, only one third of the cost of processing the data from the questionnaires was included, as about two thirds of the data were collected for research purposes, unrelated to carrying out the intervention.

Table 5 shows the participation and completion rates at each stage together with the costs of each stage. Stage 1 was the recruitment stage, involving the mailing, completion, and analysis of the baseline questionnaires, stage 2 was the process of invitation to an exercise consultation, and stage 3 was the intervention itself.

COST-EFFECTIVENESS

We used three measures of effectiveness in calculating cost-effectiveness. Firstly, we considered the cost of inducing one sedentary person to undertake more physical activity, the main intended outcome of the trial. This is measured by the net decrease in the proportion of sedentary people after the intervention net of the same decrease seen in the control group and gives a cost per person of £623. Secondly, we considered the cost of moving someone who is active, but below the minimum required level, to that minimum level. This is calculated as the

Table 6 Cost-effectiveness of the intervention

	Reduction in no of sedentary people	Increase in no of people who are active	Movement into higher level of physical activity
Total cost	£24 043	£24 043	£24 043
Gross shift (%)	11.2	5.8	21
Net shift (%)	10.6	2.7	20
People equivalent*	38	10	73
Cost per person	£623	£2498	£327

* $n = 363$.

proportionate increase net of the control group for the number attaining the top group classification. This was achieved at a cost of just under £2500 per person. Thirdly, we considered the cost of achieving any increase in an individual's level of physical activity. The cost of this was £327 for movement into a higher activity group or less than £200 for an absolute increase in physical activity. Table 6 gives a summary of the results.

SENSITIVITY ANALYSIS

Table 7 shows the breakdown of medium term fixed and variable costs for the intervention by stage. Most costs, such as the salary of the exercise development officer and the equipment, were fixed. The main factor that would affect the cost-effectiveness of the intervention is the take up rate. In this trial, there was a planned capacity of up to 363 attendees in the exercise programme, but a response of just 35%, leaving underused resources. Because this was a relatively small scale trial, the administrative work (posting, data entry, and appointment management) was carried out by the exercise development officer. On a larger scale, this work could be performed by a clerk at lower cost. The equipment costed for the project was underutilised, but also has a working life beyond the duration of the trial. Most of the equipment has a capital life of between five and 10 years and therefore annual equivalent cost was used to ensure a more realistic programme cost.

Sensitivity analysis shows no sizeable change to unit costs from the changes in definition of capital and administration costs, but table 8 gives details of the effect on unit costs when the stage one and two response rates are changed. The range of testing took the stage 1 response rate up to 74% and the stage 2 response rate up to 68%, rates that have actually been achieved in another continuing trial by one of us (M H). Variation in recruitment rates had a profound effect on unit cost. With a combination of a 74% response rate in stage 1 and a 68% response rate in stage 2, unit costs were less than half of that recorded during this intervention, assuming similar levels of adherence to the programme in all subjects. The response rate at stage 2 had the biggest effect on this. Recruitment strategy will be an important aspect of the cost-effectiveness of any exercise promotion intervention.

Table 7 Costs of intervention by stage

	Stage 1 (identification as inactive)	Stage 2 (made available for consultation)	Stage 3 (completed programme)
Total costs (£)	2517	1579	24 043
Fixed costs (£)	952	1208	23 698
Variable costs (£)	1565	371	345

Table 8 Sensitivity analysis and cost consequences (£)

	Cost per complete programme attendee	Cost per sedentary person reduced	Cost per person classified as active	Cost per person moved up a group
Current programme	279	623	2198	327
Response rate at stage 1				
60%	252	588	2295	310
65%	236	550	2145	290
70%	222	517	2018	273
74%	212	494	1928	260
Response rate at stage 2				
40%	236	550	2145	290
50%	197	460	1793	242
60%	172	402	1566	212
68%	158	368	1437	194
With stage 1 response rate at 74%, response rate at stage 2				
40%	182	424	1652	223
50%	152	354	1381	187
60%	133	309	1206	163
68%	122	284	1107	150

Discussion

This study is the largest United Kingdom based randomised controlled trial to date evaluating physical activity promotion in primary care. It provides encouragement for the continuing development of a primary care based physical activity strategy.

One difference between this study and other "Prescription for Exercise" trials reported in the literature is that in this trial general practitioners were not directly involved in either the recruitment of subjects or the intervention itself. An exercise specialist was used at both stages. Other trials have found it difficult to recruit using general practitioners, because the competing demands on the general practitioner's time lead to the activity intervention taking a low priority, with low levels of recruitment and a focus on patients at lower risk of health problems (mainly younger women who want to lose weight).⁷⁻⁹ If physical activity promotion is going to make an impact on population health, then the intervention needs to be made available and attractive to those with the most health benefit to gain.⁹ This study also showed a higher proportion of women attending the first stage of the intervention. Different methods for recruiting men to such interventions need to be identified.

One possible method of increasing the priority of physical activity promotion is to have a dedicated member of staff. The person used in this study was an exercise specialist with relevant qualifications. What remains unclear is whether or not this level of expertise would necessarily be required in a non-research intervention. Also, this study only used one exercise development officer and therefore it is unclear as to whether any particular characteristics of this person influenced the outcomes of the study, limiting the generalisability of the results. It is difficult to assess the impact of this "therapist effect", because of the lack of similar trials for comparison. Future interventions could be run by existing primary care staff such as a community physiotherapist or a practice nurse. This would involve additional training, and its associated costs, but this may be offset by lower overall wage costs.

Although the proportion of subjects who made use of the leisure centre increased during the course of the study, most physical activity

was undertaken away from the centre. Environmental efforts focused on increasing opportunities for activities not requiring attendance at a leisure centre, such as walking, may have a greater impact on the prevalence of inactivity.

The cost-effectiveness analysis showed the importance of the success in recruitment. A high take up of the offered advice enables better management of the expensive resources, particularly the personnel, and even a small difference in take up rates at each stage could have sizeable effects on the cost of achieving outcomes.

We identified two areas where a change in the organisation of the trial might have improved response.

- (1) The letter of invitation specifically mentioned exercise and could have been interpreted as being critical of the patient's current less than active lifestyle. A copy of the letter is shown in the appendix. People are usually reluctant to come to any consultation if they expect to be "told off". The method of invitation should be designed to be as non-judgemental as possible. We have experienced more success in recruiting in another continuing trial with a more neutral invitation letter.
- (2) The letter of invitation to a consultation did not include a set consultation time. It asked for the recipient of the letter to take the initiative in arranging an appointment. Again, a higher response has been achieved when an appointment time is given and the recipient is asked to cancel or rearrange it if not convenient.

More research into optimal methods of recruiting participants for all primary care based health promotion initiatives is needed.

This study has shown that it is possible to reduce the proportion of sedentary people in this population, but it is more difficult to achieve the current recommended levels of activity. We have seen an increase in the level of physical activity for subjects in each of the baseline activity levels. Small gradual changes in activity behaviour seem to be more achievable than major ones, and an increase in moderate intensity physical activity has proved easier to achieve than an increase in vigorous intensity activity. The lack of objective measures to corroborate self reported physical activity in this study should be considered when interpreting these findings.

Some commentators have argued that any increase in the level of physical activity among older people, especially those who are sedentary, will be of benefit to their health.¹⁻¹⁰ The definition of positive outcomes in physical activity interventions should be broad enough to include small gains in those at greatest risk, rather than setting a threshold below which any activity is seen as being of no value. We should concentrate on changes in lifestyle that are achievable, because a small gain for a lot of people can represent a large gain for the health of the population.

CONCLUSIONS

This study has shown that it is possible to increase levels of physical activity at a moderate intensity in men and women aged 45-74 through a primary care based intervention. The results of the cost-effectiveness analysis show that the recruitment process was the most important aspect of the intervention. To maximise cost-effectiveness it is important to have a high take up rate. Sensitivity analysis suggests that unit costs can be halved with a better recruitment strategy.

We would like to thank Pat Mahoney for the original idea, the doctors and patients at both the Avenue Crescent Practice and Southfields Medical Centre as well as Ealing Leisure Services for their cooperation and assistance with this project. This trial was supported by West London Health Promotion Agency through a grant awarded by North Thames NHS Executive Responsive Funding Programme (RFG013). W.S.M.H. and M.T. are all supported by the Health Gain Project, funded jointly by North Thames NHS Executive and the Health Education Authority.

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Appendix: Invitation to meet with exercise specialist

Dear Sir/madam,

Thank you for taking the time to return your Physical Activity Questionnaire. The information has been invaluable in helping to provide a picture of the health needs of our local population.

It has been well established that physical inactivity is a major factor contributing to coronary heart disease.

I have arranged a consultation with an exercise specialist for you. He will advise you on how to incorporate a greater degree of physical activity, helping you to maintain an active and enjoyable lifestyle. The consultation will look at what kind of physical activity you would get the most benefit from. It will take into account your personal circumstances and what facilities and activities are available to you.

To fix an appointment please fill in the enclosed card and post it in the reply paid envelope.

Yours sincerely

Dr X

Commentary

This paper shows the modest effectiveness of a prescription for exercise scheme based in primary care. In two urban practices, 2253 patients were sent questionnaires, based on a response rate of 57%, and 64% were found to be sedentary. After randomisation to consultation with an exercise development officer, eight months later 204/363 = 56% were active in the exercise prescription group compared with 174/351 = 49% in the control group (odds ratio = 1.30; 95% confidence interval = 1.27 to 1.34). While this improvement is encouraging, the fact that only 12% of the sedentary individuals at risk actually would have benefitted from such a programme limits its effectiveness as a useful strategy. This limited penetration of physical activity to the at risk population is especially important since disabled patients and those with coronary heart disease, who would both benefit from increased physical activity, were excluded from this study.

The principal advantage of addressing physical activity in the primary care setting is to build on the continuity of care over time that primary care practitioners provide and the ability of the primary care provider to motivate patients at teachable moments. The strategy presented in this report does not incorporate these aspects of primary care. The cost analysis is revealing and demonstrates the high cost of making people active and relatively low cost of increasing activity levels to higher levels in those with intermediate levels of physical activity. The lessons learned from this trial and others^{1,2} in primary care will in time lead to effective physical activity counselling. Ultimately, I am confident that a cost-effective method that utilises both physician and health care team members and appropriate social and economic reinforcements will be found.

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A Health Promotion Program: Staying Healthy After Fifty

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In this article, a description of how a comprehensive health promotion program for older adults was developed, tested with a quasi-experimental study design, and then revised to become a nationwide AARP and Red Cross program is presented. Teaching and learning methods used in the course are described with supporting education and behavioral theory. The course content for instructors, facilitators, and course participants is outlined. The key elements in the preparation of instructors and facilitators are identified. Results of the implementation of the program are given.

INTRODUCTION

The fastest growing age group in the United-States is the population over 65; it accounts for the major increase in health care expenditures. While only 25% of the U.S. population in 1900 lived beyond 65, in 1985 approximately 70% survived age 65, 30% lived to be 80 or more, and 20% die after age 85.¹ Surveys of older adults report that the major concern expressed by this group is that they will lose their capacity for independent living.² These factors offer the health field a rationale for developing programs that will help the older person achieve and maintain better physical and mental health, make judicious use of the health and social systems, and maintain capacity for independent living.

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In response to this opportunity and challenge, the Dartmouth Institute for Better Health joined with the American Association of Retired Persons (AARP) and the American Red Cross (Red Cross) in 1985 to develop the Health Promotion for Older Americans (HPOA) program. The collaborative effort was designed to develop, deliver, and evaluate an educational course to socially active, relatively healthy older adults on a nationwide basis in a cost-effective manner. The overview presented in this article focuses on the implementation of a community course, Staying Healthy After Fifty (SHAF), during the demonstration period 1985-1987. Articles appearing in this issue of the *Health Education Quarterly*³⁻⁶ detail how various aspects of the Health Promotion for Older Americans program were planned, implemented, and evaluated.

ORIGINS

The predecessor to SHAF was the Self-Care for Senior Citizens (SCSC) program developed in the late 1970s by the Department of Community and Family Medicine, Dartmouth Medical School. It started as part of the self-care movement in the seventies.^{7,8}

The first Director of the National Institute on Aging, Dr. Robert Butler, saw the self-care, self-help development as the convergence of the consumer movement in general, and demands for improved health care in particular. He described the self-care, self-help development as having enormous possibilities and urged that the older population be a part of this new experiment in self-sufficiency. He pointed to a need to answer philosophical and policy questions and to undertake studies to determine how these programs could best meet the needs of the older population and sustain their interest.⁹

In response to these possibilities and needs, Dartmouth developed a self-care course for older persons. The Dartmouth program, Self-Care for Senior Citizens (SCSC), focused on medical self-care, lifestyle enhancement, and appropriate use of health and human services. Its goal was designed to enable older persons to maximize personal independence and to minimize institutionalization. Similar programs developed at this time were Wallingford Wellness,¹⁰ the Healthwise Program: Growing Younger,¹¹ Arthritis Self-Management,¹² and The Tenderloin Senior Outreach Project.¹³

The SCSC course content and methods for program delivery evolved from formative evaluation procedures with persons over age 60 in New Hampshire and Maine. The process was initiated with a review of the literature on self-care, risk factors associated with chronic illnesses of the elderly, and promotion of lifestyle change. These findings were used to create a curriculum for a 13-session community program to be taught by trained volunteers.

The initial curriculum was pretested with older persons at senior centers, nutrition sites, and senior clubs in New Hampshire and Maine. Trained volunteers conducted the 13-session course and professional staff from Dartmouth served as observers through a series of four modifications of the program before arriving at the final curriculum for SCSC. Observers used an evaluation form with categories specific to the material covered in each session to record their judgment of how appropriate, interesting, and effective the content and methods were for the participants. The observers met with team teachers of the course to evaluate the observations and determine what changes should be made prior to the next group test.

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The information obtained from the pretests included identifying the vocabulary used by this age group as they described health conditions and lifestyle actions, the questions they had, their attitudes toward health, and health professionals and their response to ideas presented in the sessions about managing their health and initiating self-change behavior. Key changes made from these pretests were the sequential ordering of topics and the timing for introducing teaching/learning methods. For example, the participants were most responsive to starting the course with discussions on how to manage specific acute and chronic illness problem they choose and to then focus on skills relevant to the emergencies they face, e.g., choking and home accident prevention.

The participants' interest in lifestyle changes had to be stimulated through discussions of the relevance of specific health behaviors to the management of health problems. Small group discussions were accepted in the first session, however, participants did not volunteer for role playing skits until the third or fourth session or whenever they had established a comfortable and trusting relationship among themselves and with the instructors. Many specific changes in vocabulary and different approaches to session topics were made.

These findings are consistent with the learning theory which states that you "start where the people are" in presenting educational material.¹⁴ The findings are also congruent with Knowles¹⁵ adult education principles that adults draw on prior experience to determine the relevance of new information and to decide what actions they will take.

Subsequent to the two years of data collection and continual refinements of the SCSC course, a grant was obtained to test the outcomes achieved through this program using a quasi-experimental study design. Participants in SCSC made substantial, statistically significant gains in health knowledge, performances of self-care skills, use of a home treatment book,¹⁶ confidence in skills performance, and the belief that communications with one's personal physician had improved. The gains were sustained for one year after participants completed the course. They made a greater number of attempts to change health habits related to physical fitness, nutrition, weight control, and stress management than in the control group. Detailed results of this study are reported in the *American Journal of Public Health*.¹⁷

The favorable outcomes of the study and continued interest in SCSC by agency sponsors created interest with other groups. In response, DIBH developed and conducted training workshops to prepare persons to conduct SCSC. Three workshops trained 24 professionals and volunteers from New Hampshire, Vermont, Maine, New York, and North Carolina.

When interest in SCSC grew beyond the resources of DIBH, a collaborative arrangement was sought with a national organization that had programmatic interest in health promotion for older adults and had the resources needed for nationwide dissemination of the program. After exploratory discussions with several organizations, a decision was made to work with two, the American Association of Retired Persons and the American Red Cross. A grant to fund the collaborative efforts for three years was obtained from The W. K. Kellogg Foundation. The proposal was approved with the expectation that the community course developed during the Health Promotion for Older Americans (HPOA) funded project would continue under AARP and Red Cross sponsorship after the grant period.

The proposal identified five components as essential to a successful HPOA program,

which included collaboration among the three organizations, preparation of persons to deliver the consumer course, dissemination of the program to all sections of the U.S., and documentation of the benefits realized by consumers. This review focuses on the result of the revision of SCSC, the Staying Healthy After Fifty (SHAF) course. Articles describing the implementation and evaluation of the other community components appear in this issue of the *Health Educational Quarterly*.³⁻⁶

STAYING HEALTHY AFTER FIFTY COURSE

Purpose of the Program

SHAF is a comprehensive community health promotion program designed by DIBH, AARP, and the Red Cross to help older adults acquire confidence necessary to assume more direct responsibility for maintaining and improving their own health. It is directed primarily toward older persons who are living independently, with the aim of helping them remain self-reliant.

The specific objectives are to impart information, develop skills, change attitudes, and modify health behaviors that are particular to the participants' health status, lifestyle, and use of the health and human service system.

Staying Healthy After Fifty Course Content

The SHAF course represents a revision of SCSC, with changes and additions that make the content consistent with AARP and Red Cross programs, publications, and policies. Content changes include addition of a consumer health session to cover AARP's focus on health care costs and consumer rights and a Red Cross home safety unit directed to the prevention of falls that are a major health problem for older people. Self-assessment and observation forms were added to the participant's workbook as well as guidelines for performing health skills and comparing health insurance plans.

The SHAF course consists of 11 two-hour sessions divided into three content blocks: Health concerns and emergency situations, lifestyle, and consumer planning. These blocks are sequentially ordered to start with the topics found to be of most concern to older adults. When these topics are discussed the participants become aware of the influence that lifestyles have on their health and related consumer actions.

The instructor's manual for SHAF provides the educators with teaching objectives along with the strategies that support the participatory learning. The instructors use this resource to plan and guide their teaching efforts. An outline of the eleven sessions is presented in Figure 1. In summary, the curriculum is designed to: assure that the content of each session will help the participant become more responsible for his/her own health care; allow for maximum member participation through a variety of educational methods in every session; include the planning of content, format and sequence of learning activities so that the mind, the emotions and the bodily senses (sight, hearing, touch, smell and taste) are all involved.

A key benefit for course participants occurs when they successfully institute a self-change plan. Guidance for this process begins with seven steps to follow when

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Figure 1. SHAF course session outline.

Session 1	HEALTH CARE: WHOSE RESPONSIBILITY? Skill: Read a thermometer
Session 2	SELECTED HEALTH SITUATIONS: HOW TO IDENTIFY AND MANAGE Skill: First aid for choking
Session 3	MEDICATIONS: WHAT YOU NEED TO KNOW Skill: Fill out a medication record
Session 4	COMMON HEALTH PROBLEMS: CAUSES, SYMPTOMS AND TREATMENTS Skill: Take a resting pulse
Session 5	COMMON HEALTH PROBLEMS: CAUSES, SYMPTOMS AND TREATMENTS: A CONTINUATION Skill: Blood pressure review
Session 6	LIFESTYLES: TAKING ACTION TO PROMOTE HEALTH Skill: Blood pressure review
Session 7	EXERCISE: GETTING FIT AND FEELING FINE Skill: Take an exercise heart rate or pulse
Session 8	NUTRITION: EATING TO STAY HEALTHY Skill: Nutritious meal planning
Session 9	EMOTIONAL WELL-BEING: IT'S YOUR WORLD Skill: Progressive Muscle Relaxation Technique
Session 10	CONSUMER ISSUES IN HEALTH CARE Skill: Use the directory of local human and social service agencies
Session 11	SELF-CHANGE PLAN: PLANNING A BETTER TOMORROW Skill: Design a self-change plan

designing a self-change plan: decide on an achievable long-term goal, a realistic short-term goal, list the benefits of achieving the goals and the barriers that could prevent achievement, specify responsibilities for carrying out the plan, choose a friend to help with achieving the goals, and review the plan after one month and, if needed, revise it. This process was developed from the work of Farquhar¹⁸ and is supported by Bandura's concepts on self-efficacy.¹⁹

Educational Materials

The SHAF course uses a variety of teaching and learning methods and techniques during every session. Throughout each session, participants are encouraged to express opinions, ask questions, and make decisions and commitments regarding their health-related behaviors. The methods used to foster active participation include total group discussion, small group discussion, individual and pair participation, role-playing and/or skits, skill practice, and exercise breaks. Material or concepts that are relatively unfamiliar to the group are introduced in 10-15 minute presentations and supported by an outline of the main points on a flip chart and/or chalk board.

Sessions open with participants discussing, listing, and/or analyzing their knowledge, beliefs, and behaviors relevant to their interest and concerns about a topic. This is often initiated through homework assignments to collect observational information about a problem, activity or behavior. The participants engage in structured problem-solving tasks where they consider the effectiveness of alternate strategies and determine the appropriate solution for them. Guidelines also include how to conduct exercise breaks midway through the two-hour sessions. This break alters the pace in the learning activities.

The educational methods and techniques used in the course are consistent with ones specified for older adults by Knowles²⁰ and Whitbourne's fundamentals of the learning process.²¹ They correlate with Morimoto's description of creating a context for learning in which the individual is provided with opportunities to explore and make meaning out of past experiences and to consider alternative possibilities that lead to new understanding.²²

Class enrollment is limited to 15-20 participants to ensure that everyone will have an opportunity to ask questions, offer ideas, and receive individual attention in their skill learning. The various educational methods provide ways for the group to be further divided so the level of interest and ability can be appropriately distributed among participants.

Accommodations are made for persons with physical limitations to ensure that they can participate at their level of ability in the skills practice and exercise breaks. Seating arrangements are adjusted for participants who have hearing or vision loss. The desired arrangement for the classroom to be conducive to group interaction is a circle of chairs with arms for writing and minimal distance between instructor and participant.

Staying Healthy After Fifty Materials

The set of educational materials developed for use during the demonstration period provided the instructors with well formulated, soundly based content that is organized into systematic, semistructured learning experiences for participants. Materials for the educators include: SHAF instructor's manual, Health Planner (workbook for participants), Medical and Health Guide for People Over Fifty, SHAF course flip charts/transparencies.

*Instructor's Manual*²³

Content and methods of presentation in the manual are arranged by the objectives for the session with a suggested length of time for each activity; a list of specific ways to prepare for the session; the materials needed and where to obtain them; and cross-references to materials in the participants' Health Planner and Medical and Health Guide. The different functions of the instructor and facilitator are identified for each session.

The Manual also includes information on the philosophy and purpose of SHAF, characteristics of adult learners, guidelines for using the educational methods, sample exercise breaks, and a participant course evaluation questionnaire. Instructors and facilitators become thoroughly familiar with this manual during the Educational Team Training.⁴

*Health Planner*²⁴

The planner serves as the participant's personal notebook where they enter personal health data, make notes of things they want to remember from each session and decide what they want to try to apply. The content includes: key points about a topic, forms

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for keeping a personal health history, a medication record, a daily eating pattern, and a self-change plan. The planner also serves as a participant's reference guide to health maintenance activities and implementation of a self-change plan after completing the course.

*Medical and Health Guide for People Over Fifty*²⁵

This reference book provides background information on the health and medical care topics included in SHAF. It has a section describing the causes and symptoms of 60 common medical problems of older adults that lend themselves to self-care techniques.

Other Course Materials

Relevant pamphlets, booklets, and posters that can supplement the contents of SHAF are supplied by AARP and Red Cross. Instructors and facilitators select additional materials that are appropriate for the participants enrolled in their SHAF course.

Teaching Staying Healthy After Fifty

The teaching of SHAF is designed as an educational team effort by instructors and facilitators who conduct each session jointly. They receive the same training and can therefore exchange roles when their background and experience is relevant for the content and/or skill activity. They work closely together to plan and structure the session in order to create an atmosphere that encourages participants to determine their own needs, identify a number of possible solutions, achieve their own goals, and generally assume responsibility for their own learning process.

Responsibilities for the facilitator and instructor roles vary depending upon the interests and abilities of the individuals. The facilitator maintains a supportive learning environment through establishing patterns of informal communication in the opening of each session, assisting participants in recording relevant information in their Health Planner, using the Medical and Health guide, practicing skills within their abilities, and carrying out their homework assignments. The facilitator also assumes responsibility for facility arrangements, assures that supplies and equipment are available for use at each session and provides administrative support as necessary. The instructor is primarily responsible for conducting the teaching/learning experiences relevant for each session topic.

Resource persons are invited to participate in sessions when the instructor decides that he/she needs the knowledge and skills of an expert for a topic (e.g., a local pharmacist for the session on medications). The local Red Cross Chapter provides the skill instructors certified to teach course content related to clinical and emergency care skills. When a resource person is invited to co-instruct a session, the material for the session from the instructor's manual is provided. The instructor discusses with the resource person the teaching style used in SHAF (participatory versus lecture) and information about the background and interests of the course participants.

A Perspective on Teaching Staying Healthy After Fifty

Instructors and facilitators need to be able to understand and respond appropriately to different demographic and personal characteristics of SHAF enrollees. SHAF was designed to respond to this need through the development of a section in the instructor's manual and in the training workshop that addresses the concepts of teaching and learning relevant to older adults with different backgrounds of education, experience, and culture. The material is presented to instructors and facilitators as a philosophical orientation to teaching SHAF. The ideas discussed include an integration of concepts developed from the works of Knowles, Foster, Polgar, Paul, and Zola.^{15,26-29} Since this perspective is deemed a key to the successful delivery of SHAF, some excerpts from the instructor's manual are presented below.

The SHAF program was designed with the socially active, relatively healthy older adult in mind. These persons tend to see themselves as responsible, independent personalities who are able to care for themselves, make decisions and satisfy their own needs. They want to be treated with respect and to be perceived as having the ability to make their own decisions.

Older adults come to the course with considerable life experience behind them, especially about their health care. They usually know what ails them and which health services and remedies have been useful or useless for them. Many are frustrated with the health care system. Some have settled into health habits that need changing since their lifestyle and resources have changed over the years.

Older adults engage in learning largely in response to pressures they feel from current life situations and health problems. They tend to enter the program in a problem-centered frame of mind. They have specific, concrete and immediate needs that usually center around medical concerns. Thus, the program begins with a focus on common health problems.

Any group of participants in the program will undoubtedly include persons with different levels of formal education, health knowledge and skill, contact with health and social service professionals, and experience with informal group education. In addition, the members of a group may be from different cultural backgrounds. These characteristics will greatly affect what the participants know, believe, and do regarding all aspects of health and how they relate to others. It is important to keep in mind throughout discussions in the sessions that individuals have developed rationales (explanations) for what has happened to them. Ill health occurs in all groups, and every society has developed ways of coping with it. The practices they develop are closely interrelated with their beliefs about life and nature and with the way they engage in daily activities and social relationships.

The cultural beliefs and behaviors of a group or an individual do not remain static, but rather undergo changes as interactions with other cultural groups occur. You can learn about the health beliefs and practices of different ethnic and religious groups from persons in the community who have worked successfully with these groups, (e.g. clergy, health and social service professionals, sociologists). This background of information can alert you to the points of view that may be given in a session and the resistance participants may have to some suggestions on what to do about a health problem, for instance, how

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and respond appropriately to SHAF enrollees. SHAF was part of a section in the instructional concepts of teaching and needs of education, experience, facilitators as a philosophical integration of concepts (Paul, and Zola.^{15,26-29} Since the very of SHAF, some excerpts

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to communicate with a doctor, manage interpersonal relationships, or select a balanced diet.

The Educational Team Members should accept the right of each participant to retain a point of view based on his/her cultural beliefs and practices. Participants should know that the program provides information based on scientific data; each person will decide how to accept and interpret this information. In fact, the solutions of different cultures to health problems often reconcile with scientific answers when fully explored. The key is to avoid creating conflict within an individual. Emphasis should be placed on what actions are acceptable rather than on what should be done. To relate effectively to members of a group, one needs to be able to "put oneself in the learner's shoes" - to be empathetic; that is to be socially sensitive to what others think and feel and to use this insight as another way of looking at a problem or its solution.²³

SHAF Program Delivery

The implementation of SHAF requires community action by AARP and Red Cross chapters that co-sponsored the program. They are encouraged to enlist persons from local agencies who share an interest and concern in health promotion for older people to form a local steering committee.

This committee provides assistance recruiting and supporting instructors and facilitators, marketing the program to enroll course participants, managing the course logistics, and providing program oversight. The HPOA steering committee is provided guidelines for the development and functioning of the community program.

Results of Staying Healthy After Fifty Program Implementation

A key to the delivery of SHAF was the preparation of the educational team members. HPOA conducted 26 workshops and prepared 390 educational team members during the project. The planning, implementation, and evaluation of educational teams is described in a separate report in this issue of the *Health Education Quarterly*.⁴ In addition, 38 persons in four workshops were trained to be instructor-trainers. These trainers conduct training workshops for instructors and facilitators and thus make possible the expansion of SHAF to other communities.

During the three years of HPOA over 2,600 older adults enrolled in SHAF. A typical SHAF enrollee was a 66-year-old married female with a high school education. Most course participants (70%) were national members of the AARP. Two-thirds of SHAF enrollees reported that they had chronic medical problems that required continuing care by a physician, and one-third considered themselves to be physically limited by a medical condition. Course participants ranged in age from 35 to 81 years, and had education levels from grades 4 to 6 to a college degree or more.

A pre/postevaluation study of the impact of SHAF on participants ($N=161$) was conducted using friends or neighbors of participants ($N=164$) as the comparison group.⁶ Data for this study were obtained from 20 SHAF courses held in 16 different communities between August and December, 1986.

In the evaluation study, the responses from the postcourse questionnaires revealed

that 97% of the participants indicated they were satisfied with the course and 98% would recommend the course to friends. The overall completion rate for the program (attendance at a minimum of 9 of the 11 course sessions) was high, 92.5%. The percentage of course participants reporting the following benefits were:

- | | |
|--|-----|
| • Know more how to take care of health problems | 96% |
| • Learn more on their own about health | 93% |
| • Take specific actions to keep their spirits up | 87% |
| • Know better how to stay mentally healthy | 84% |
| • Have a better idea of when to contact their doctor | 81% |
| • Can communicate better with their doctor | 81% |
| • Learned new ways to save money on health care | 74% |
| • Changed the kinds or amounts of food they eat | 73% |
| • Get more physical exercise | 65% |
| • Changed a habit they wanted to change | 34% |
| • Started another health-related program | 24% |

Course participants scored significantly higher than comparison group members on their perceived ability to perform the following health skills after completion of the SHAF course: take temperature, blood pressure and pulse, perform first aid for choking (e.g. Heimlich maneuver), understand food labels, reduce stress level, develop written plan to improve health, use medical/health reference book, check home for safety hazards, and frequency in using medical/health reference book.

There was also a significant between-group difference concerning health actions. Course participants reported a greater degree of improvement following course completion in the following areas: use seat belt, do vigorous exercise, reduce stress level, eat foods rich in calcium, and do stretching/strengthening exercises. Differences were also found between the two groups regarding gains in understanding health care costs. Course participants scored higher than friendship group members in these areas: try to save money on health care, compare prices and services for health care items, and compare health insurance policies.

No significant differences were found between the two groups regarding the "indirect effects" of participation in the SHAF course (i.e., health perceptions, health status, and utilization of medical care). There continued to be "direct effect" differences (i.e., health skills, health actions, and health care costs) between course participants and friendship group members six months after the course took place. The degree of improvement made by participants in some of these direct effect areas decreased somewhat at the third measurement interval, but overall, the improvements realized by participants continued for at least six months after completion of the SHAF course.

SUMMARY

The American Association of Retired Persons and the American Red Cross have made a commitment to continue supporting the national dissemination of the Staying Healthy After Fifty Program as a jointly sponsored program. Data gathered throughout the project from process evaluation and the impact study were used in making

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ied with the course and 98% completion rate for the program (95%) was high, 92.5%. The perceived benefits were:

96%
93%
87%
84%
81%
81%
74%
73%
65%
34%
24%

Comparison group members on skills after completion of the course, perform first aid for choking, reduce stress level, develop writing book, check home for safety book.

Concerning health actions, improvement following course completion: exercise, reduce stress level, doing exercises. Differences were in understanding health care costs. Members in these areas: try to save for health care items, and

Two groups regarding the "indirect" effect, health perceptions, health status to be "direct effect" differences (costs) between course participants and the course took place. The results of these direct effect areas but overall, the improvements were significant after completion of the

The American Red Cross have disseminated the Staying Healthy program. Data gathered throughout the study were used in making

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decisions about the final content of SHAF and its implementation as an AARP and Red Cross program. A decision was made to reduce the SHAF course from 11 to 10 two-hour sessions, which would cover the same content and be held twice per week. This change was in response to difficulties local communities had in scheduling the course for a six-week continuous period and in recruiting course participants. The content was reorganized with this reduction to embody exercise concepts and skills into each session as part of the scheduled fitness breaks.

The enrollment of older persons in an extensive course was more difficult than expected; however, once enrolled they become advocates for the program. The enrollees suggested that difficulties in recruitment may have related to a lack of experience older adults have with a comprehensive, participatory health program. Hence, they are unable to envision the benefits of a 22-hour course on staying healthy. It also became apparent that the older adults who are most likely to enroll in SHAF are those persons who have many opportunities for social and educational activities that keep them fully scheduled. AARP and Red Cross have developed promotional strategies to assist chapters in the recruitment of SHAF participants.

The SHAF experience has demonstrated that a large portion of talented volunteers are ready to become instructors and facilitators for SHAF. They have served in these roles longer than the two years projected as their "life expectancy" and they are enthusiastic about sharing their experience with others.

The impact study found that a substantial number of SHAF enrollees did acquire the confidence necessary to assume more direct responsibility for maintaining and improving their own health. However, still unanswered is what effect, if any, these added capacities will have over five years on the ability of these persons to live independently and remain self-reliant. It is also unclear whether the gains SHAF enrollees make in understanding health maintenance and appropriate use of health resources will make a difference in the utilization of medical care. Long-term intensive studies in controlled populations are needed to answer these questions.

Staying Healthy After Fifty has been demonstrated to be a positive influence on what older people know, think, and do to maintain their health. Moreover, the program has been shown to be adaptable to persons with varied backgrounds. It was also successful in small rural towns as well as large urban centers. This model program has been "packaged" into a system that enables educational teams, and educational team trainers, to be thoroughly prepared to conduct high quality courses in a manner that makes efficient use of local resources.

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Interorganizational Collaboration and Dissemination of Health Promotion for Older Americans

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This article describes how a successful health promotion program for older adults was adapted and disseminated through collaboration of the American Association of Retired Persons, the American Red Cross, and the Dartmouth Institute for Better Health. The details of this effort are presented in three sections: the conceptual framework used to build the collaborative relationship, the outcomes, and an analysis of these experiences as they relate to the diffusion of innovations in organizations. The problems encountered are discussed as well as the need for more time to elapse before judging the ultimate success of the diffusion of the program.

INTRODUCTION

The gap between research findings and their application is a frequently expressed concern in health education. The breakdown occurs with the difficulties of translating the content and implementation process of a field study into intervention measures that can be adapted to the realities of a natural setting. This article describes how a successful health promotion program for older adults was adapted and disseminated nationwide. The Dartmouth Institute for Better Health (DIBH) designed and conducted a study of the effectiveness of the original program, Self-Care for Senior Citizens.¹ This program was used as a base for a collaborative effort with two national organizations to implement the program in communities throughout the United States.

Support for the Health Promotion for Older Americans project was provided in part by a grant from the W. K. Kellogg Foundation to Dartmouth College.

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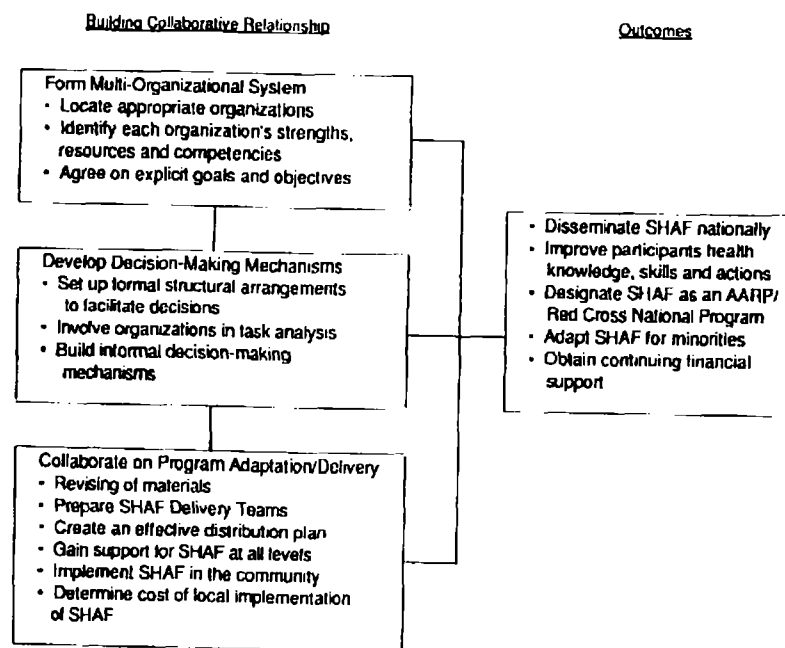


Figure 1. National dissemination of HPOA conceptual framework.

The national organizations enlisted by the Dartmouth Institute for Better Health for this effort were the American Association of Retired Persons (AARP) and the American Red Cross (Red Cross). The three organizations obtained a grant from the W. K. Kellogg Foundation to create the Health Promotion for Older Americans program (HPOA), with the goal of developing an ongoing distribution system to deliver the program in a cost-effective manner.

A conceptual framework was developed that outlined the strategies needed for organizational collaboration and program dissemination that could achieve the desired outcomes. The strategies embody concepts from Shelden et al.² on the development and management of multiorganizational collaboration, Rogers' "Diffusion of Innovations in Organizations,"³ and Bandura's ingredients for social diffusion and innovation.⁴ The conceptual framework is displayed in Figure 1. DIBH staff had experience in applying these strategies at community and regional levels.^{5,6}

This article will describe how each of the components in the framework were implemented, where difficulties were encountered, and the outcomes of these efforts. An analysis of how this experience relates to Rogers'³ and Bandura's⁴ concepts and to other studies of diffusion of innovations in organizations will be presented. The terms diffusion and dissemination are used in this article interchangeably as Rogers does in his writing.

BUILDING COLLABORATIVE RELATIONSHIP

Formation of the Multiorganization System

The first box on the left side of Figure 1 lists three steps the DIBH staff undertook to form a multiorganizational system to implement HPOA. A description on what occurred in this development during the three-year period, 1985-1988 is presented.

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Locating Appropriate Organizations

Prior to seeking foundation funding, DIBH conducted a search for national organizations that could provide the resources and competencies needed to disseminate the Self-Care for Senior Citizens program nationwide. In 1983 the AARP and Red Cross announced their agreement to cooperate on health promotion services for older persons. A follow-up inquiry was made by DIBH with these organizations to determine what actions had occurred in response to this agreement. The organizations reported they had conducted a survey in 1984 of their local units and chapters to determine the level of knowledge and interest they had in such cooperative ventures. The survey found a general level of awareness and interest but subsequent action was very limited.⁷ On the basis of this information, DIBH suggested that AARP and Red Cross consider the dissemination of the Self-Care for Senior Citizens program as a collaborative effort that could provide an example of a cooperative venture by the two organizations.

Identify Each Organization's Strengths, Resources and Competencies

The strengths, resources, and competencies needed to deliver a health promotion program nationwide in a cost-effective manner included: content expertise, resources to train staff and volunteers, existing channels of communication from national to community level, organizational capacity to deliver an educational program at the local level, and the capability to continue delivering, improving, and expanding the program at the end of the three-year grant.

Characteristics of AARP, Red Cross, and DIBH that combined to provide a strong foundation on which to build an efficient, effective multi-organizational system are described below.

The American Association of Retired Persons has its national headquarters in Washington, DC with 10 regional geographic areas to coordinate planning and implementation of AARP activities. Each state has a director and several assistant directors whose duties include serving as liaisons between the national organization and approximately 3,200 chapters and 2,400 independent retired teacher units and the national organization. Over 40,000 volunteers work on a variety of service and educational programs such as Health Advocacy, Tax Aide, Institute for Lifelong Learning, and other consumer programs.

Health Advocacy Services (HAS) is an AARP program designed to promote good health habits among older adults and encourage effective use of the health care system. For example, to assist older adults with understanding Medicare provisions and claims procedures, and related problems, over 700 volunteer health advocates have been trained.

The American Red Cross is a multipurpose, nonprofit health and human service organization with a national headquarters in Washington DC, three operations headquarters (regional offices), and chapters in almost 3,000 communities. Services range from providing emergency food and shelter during disaster situations and managing half the nations supply of voluntary donated blood, to conducting courses that help people make informed decisions about their own health.

At the Red Cross centennial convention in 1981, the Red Cross announced a new health services initiative and assigned priority to collaboration with appropriate government and voluntary agencies and private health care institutions to expand educational

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courses and services that encourage preventive health care, help individuals and families improve their health and safety, and increase self-reliance.

The nationwide Red Cross educational system is built on a network of volunteer instructor preparation. The national headquarters provides support for the development, evaluation, and continuation of the training and materials for health programs. Extensive chapter participation is involved in all phases of program development and implementation.

The Dartmouth Institute for Better Health (DIBH) is an organization based at the Dartmouth Medical School that encompasses specialists from the fields of internal medicine, behavioral medicine, health services research, health education, and evaluation. DIBH's mission is to improve health by fostering positive lifestyles and individual responsibility for health management. Self-care education is used to advance health through focusing on prevention and disease management. The Institute works with community-based health and social service providers in developing, implementing, evaluating, and marketing health promotion programs for special target groups.

The Self-Care for Senior Citizens (SCSC) program was developed as a research and demonstration program under a grant from the Administration on Aging. After completion of the research phase of this program, DIBH staff developed a training workshop and educational materials to prepare individuals for the delivery of the SCSC program. The resulting success in establishing ongoing SCSC programs in communities in New Hampshire, Maine, and North Carolina formed the basis for the HPOA proposal.

In summary, the structure of AARP and Red Cross provided nationwide geographic coverage, content expertise, staff and volunteer leadership at all levels in program delivery and training. DIBH brought a proven effective consumer health promotion program and expertise in program evaluation and cost analysis and experience in program implementation.

Agree on Explicit Objectives and Tasks

DIBH staff held three meetings, numerous telephone calls, and exchanged three drafts of the grant proposal with AARP and Red Cross staff responsible for health promotion programs over a nine-month period to develop explicit objectives and tasks for the achievement of the goal. Many key decision-makers throughout these organizations were involved in formulating the final content of a proposal submitted to the W. K. Kellogg Foundation for funding. The proposal described how each organization would function, the outcomes to be achieved, how the specific tasks would be implemented, and the way the requested funds would be distributed.

The discussions and proposal writing revisions provided the three organizations insights with regard to the strengths and competencies each could bring to the project as well as explicitly clarifying the purpose of the collaboration. Special core staff were to be employed by each organization to provide overall direction for program implementation.

The five objectives for HPOA outlined in the proposal were:

- to establish cooperative relationships among AARP, Red Cross and DIBH, and utilize appropriate organizational structure and communication channels to disseminate HPOA;

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- to develop and deliver training programs for staff and volunteers, preparing them to plan and conduct the HPOA program. In the three-year period it was projected that 19 educational team workshops would be held to prepare 300 course instructors/facilitators;
- to incorporate an ongoing training and implementation mechanism to ensure continued dissemination of the HPOA program at completion of the project;
- to refine measurement tools to monitor the distribution process and evaluate the knowledge, attitudes and skills attained by program participants;
- to deliver the HPOA program to more than 3300 participants during the funding period and conduct a cost analysis of different delivery patterns.

Development of Decision-Making Mechanisms

The formation of a multiorganizational system to diffuse the innovation includes creating conditions for collaboration. Figure 1 lists three actions necessary for the development of an effective decision-making mechanism for a collaborative relationship.

Formal Structure

The proposal specified the establishment of a Health Promotion for Older Americans (HPOA) Advisory Committee at the national level to advise the staff of DIBH, AARP, and Red Cross on matters pertaining to their collaborative efforts regarding the dissemination, evaluation, and continuation of the HPOA Project. AARP and Red Cross selected national board members and persons active in their health programs at the national and local levels. DIBH named its medical director and a person with national experience in the evaluation and administration of programs for older adults. The special concerns identified for the committee were (1) facilitate effective, ongoing organizational communication; (2) advise on marketing and implementation strategies; (3) provide counsel on program developments; (4) recommend long-range planning strategies; (5) add special expertise to the project's delivery, evaluation, and continuation.

The very different organization and management structures, goals, and policies of the three organizations had direct effects on the management and implementation of the community program. The advisory committee served as the forum for examining these problems and initiating organizational actions to resolve them. For example, they discussed policy issues that included determining criteria for selection of sites for the program; deciding on the program name; resolving the organizational differences on cost recovery, course fees, recruitment criteria for course instructors, and training standards. The committee also recommended ways the national, regional, and local communication channels would be used as well as how to effectively establish inter-organizational channels. To obtain broad-based community sponsorship of the program, the Committee advised staff to develop community steering committees. These steering committees would consist of AARP and Red Cross as sponsors with representatives invited from other relevant community health, social service and older-adult organizations. Steering committees would be responsible for selection of educational

team members to deliver the program, recruit program participants, promote the program, and send reports on the course to the national level.

Evaluation issues were also discussed. The evaluation plans in this proposal included evaluation of educational team workshops and a study for in-depth analysis of program impact on participants in the health promotion course. The committee suggested that information be gathered in selected communities where the program either flourished or floundered. This information would be used to determine which factors facilitate program growth and which impede it as well as identify strategies for maximizing program success.

Members of the advisory committee discussed the possibility of adapting course materials for use with minority populations. They indicated this was a priority within the two organizations and an unmet need throughout the country. If these target populations were to be added, an evaluation of the adaptations and benefits for the minority populations should be included. To strengthen the evaluation component of the project, the committee recommended that DIBH submit a proposal for additional funds. These were awarded in year two of the project.

The national advisory committee met four times during the three years of the project. Between meetings, the committee members' advice was sought through periodic telephone calls and mail consultations with regard to program development and implementation. The committee provided an excellent forum for open discussions of differences among the three organizations and the problems encountered by HPOA core staff. Suggestions made and actions taken by committee members to resolve these problems within their organizations greatly contributed to a successful collaborative effort.

Involve Organizations in Task Analysis

The decision-making mechanisms set forth in the proposal covered the initial expectations of how the project implementation would be undertaken. This included the employment of a full-time core staff person by AARP and Red Cross, part-time project director and evaluation staff by DIBH, as well as supporting secretarial assistance in all organizations. The roles and tasks each organization would assume to attain the objectives of HPOA were also set forth in the proposal. Further specification of these roles were made at the first meeting of the core staff when primary and secondary responsibilities for tasks were designated for each organization. A great deal of shared responsibility was required for conducting and evaluating training workshops, course delivery, and to study the impact of the program on consumers. By the third year of the project, most of the responsibilities became part of AARP's and Red Cross's planned takeover of the program.

Build Informed Decision-Making

The translation of these responsibilities into program implementation was facilitated by HPOA core staff meetings, regular conference telephone calls, and joint program delivery. There was open questioning and critiquing of all materials and dissemination activities. Because the mission, policies, and organizational structure differed

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markedly among the three organizations, the core staff had very different perspectives on how to pursue common objectives. However, in order to proceed with HPOA implementation, they had to find ways to accommodate these differences. For example, the core staff prepared six-month project status reports to describe their perceptions of accomplishments, expectations met, and factors that facilitate/hinder inter-organizational collaboration. Summaries of these were shared and provided core staff the opportunity for reflection on how progress and problems were viewed by project colleagues.

The HPOA core staff in AARP and Red Cross jointly planned and implemented all aspects of program development. They provided immediate response to questions, concerns, and suggestions that arose in the other organization's meetings. Flexibility and humor smoothed some situations. Commitment to the goals by HPOA individuals at the national and local levels in all three organizations provided the resolve to continue the program despite changes in organizational goals and priorities during the three-year period.

Collaboration for Program Adaptation/Delivery

Introduction of the HPOA program into AARP and Red Cross required approval by persons in each organization responsible for materials development and program operations. The methods by which the six program adaptation and delivery steps outlined in the conceptual framework in Figure 1 were carried out is presented below.

Revise Course Materials

The basic course materials for conducting the HPOA community program, named Staying Healthy After Fifty (SHAF), are the instructor Manual,⁸ the course participants' Health Planner,⁹ a flip chart or transparencies, and a reference text.¹⁰ During the first year of the project, AARP and Red Cross circulated the original SCSC materials throughout the appropriate sections of their organizations to determine what changes and additions were necessary to make content consistent with their other programs, publications and policies. When there were inconsistencies in the recommended changes made by AARP and Red Cross, core staff from each organization discussed how to reconcile the differences. For example, the procedures for teaching temperature taking, pulse and blood pressure had to be changed to conform to the standards set for other Red Cross programs.

To accommodate organizational interests, the revised SHAF course had a new topic added on consumer health, which addressed AARP's focus on health care costs and consumer rights under new health care initiatives for older adults. Red Cross added a home safety unit that focused on a major health problem, accident prevention, primarily concerning falls for older people. The number of sessions for the pilot course of Staying Healthy After Fifty was reduced from SCSC's 13 sessions to 11.

Added to the course participant's Health Planner were self-assessment and observation forms and specific procedures for carrying out health skills and for comparing health insurance plans.

The revised materials were then pretested at three sites by instructors and facilitators.

tors who were trained in the first educational team workshop. While teaching the SHAF course, these instructors used an observation form to record course participants' responses to the content and learning activities in each session. Core staff met with these educational teams to consider additional revisions.

Revision of the materials made at this time were used in the field implementation study, however, core staff continued to collect information on the use of these materials from instructors and facilitators and additional suggestions for improvement were obtained during subsequent workshops. Educational team members completed an after-course survey in which they rated how effective the educational materials were in meeting the teaching/learning needs of SHAF course participants and made suggestions for improvements. This information was discussed with selected course instructors to determine how applicable the proposed changes would be across communities. All of these sources were used to further adapt SHAF prior to its incorporation at the end of the project into the AARP/Red Cross jointly sponsored national program.

The final version of the SHAF course consists of 10 two-hour sessions. It is designed to encourage older adults to adopt and practice healthy lifestyles and is directed primarily toward older persons who are living independently, with the aim of helping them remain self-reliant. A description of the course content is presented elsewhere in this issue.¹¹

Prepare SHAF Delivery Teams

An essential component in the delivery of SHAF is the preparation of persons who will conduct the course in the community. The first three workshops conducted to prepare two instructors and one facilitator as an educational team for each community used the content and methodology of the initial DIBH program, Self-Care for Senior Citizens.⁶ The training process in these workshops was observed by national and regional staff of AARP and Red Cross who had responsibilities for program operations and training. The workshop content and teaching/learning methods were revised on the basis of this feedback and the results from participants' after-workshop surveys.

By the end of the project the length of the three-day workshop was shortened to two or two and one half-days. The content of the workshops was reduced through a requirement that participants obtain prior certification in the Red Cross Introduction to Health Service Education program. The other factor affecting the length of the workshop was that the amount of practice time scheduled varied with the number of enrollees. Twelve or fewer could be trained in two days; 15 to 24 in two and one-half days. The specific designation of persons as facilitators or instructors was dropped although the roles were maintained because most of the volunteers recruited were able to assume either role.

The core staff from AARP, Red Cross, and DIBH served as the faculty trainers for the first three pilot educational team workshops. To ensure continued dissemination of the SHAF course at the completion of the project, the core staff had to develop a cadre of instructor-trainers from different geographic locations who could conduct educational team workshops.

The sequential steps taken by core staff to accomplish this objective were to: identify persons at workshops who exhibit the best teaching/learning skills; monitor their performance as SHAF course instructors and as invited cofaculty at educational

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team workshops; train these persons in a two-day instructor-trainer workshop; and observe their performance as faculty when they conduct a local educational team workshop. Additional information on the training component in HPOA is reported elsewhere in this issue.¹²

Create an Effective Distribution Plan

The HPOA proposal did not include specific procedures for the initial selection of communities where SHAF would be conducted. The responsibility for carrying out this task was assigned to the AARP and Red Cross and they developed a series of actions consistent with their organizational structures and communication channels. The three major factors influencing the selection of the first demonstration site for the HPOA project follows.

First, it was necessary to elicit interest of both AARP local leadership and Red Cross at the community level. In a 1989 Red Cross/AARP survey, chapters in both organizations were asked to indicate if they would like more information about a new Health Promotion for Older Americans program. Those who responded (275) were sent a packet of descriptive materials and an application for consideration as a demonstration test site. A brief notice concerning the project was also included in the Red Cross newsletter, *Cue-In*, with an invitation for interested chapters to obtain more information. This notice resulted in inquiries from 135 chapters representing both large and small chapters from all sections of the country. The final round of consideration was completed through telephone calls to chapters.

Second, support was obtained through consultation with management staff in each of Red Cross' three operations headquarters concerning the feasibility of interested chapters becoming demonstration sites. Some interested chapters were removed from consideration for a variety of reasons, including changes in local management, competing priorities, or insufficient resources.

Third, for AARP to match Red Cross selected sites, they consulted their 10 area offices to determine the interest of chapters in their jurisdictions. This match was necessary because both organizations were to serve as cosponsors of HPOA in the community.

Efforts were made to maintain geographical and size variation in the selection process. In some cases, strong areas of interest and support for one organization were not an acceptable choice of the other, so in the final selection each organization had to compromise. The chapters that were accepted signed a memorandum of agreement with Red Cross, (national) which specified their responsibilities as demonstration sites. This process of selecting community sites for conducting SHAF was not used in the later stages of the project when HPOA had gained visibility and interest through a variety of communication channels.

Gain Support for SHAF at All Levels

Organizational channels of AARP and Red Cross were used in the implementation of the HPOA program at national, regional, and local levels during the three years of the project. Staff and volunteers in program operations in all regions of both organiza-

tions and in over 70 communities contributed to the development, interpretation, and promotion of HPOA. Support of the program from AARP and Red Cross nationally included staff, travel funds, materials to enhance the older adult's learning experiences, and development of promotional materials and events. Both organizations also supplemented HPOA funds through direct contributions for overhead, staff support, mailing of SHAF materials, publication of a promotional brochure and poster, volunteer travel, consultants, and training session expenses.

Each organization also made specific types of contributions. For example, AARP funded a Black minority adaptation study; provided volunteers and staff from the Health Advocacy Service and Leadership Development Department for educational workshops and promotion of SHAF; instituted a training program to prepare volunteers for adult learning session at workshops; presented information about SHAF in three national AARP publications and three nationwide regional conferences.

The Red Cross translated and printed Spanish language materials; produced the instructor-trainer's manual; convened a national advisory committee at Red Cross headquarters to provide guidance and direction for the implementation of SHAF; and made presentations at two national and regional Red Cross meetings. Local Red Cross volunteers and paid staff provided leadership and logistical support for the training workshops and local SHAF courses.

Implementation of SHAF in the Community

The ultimate success of national, regional, and state actions to develop and implement the SHAF program depended upon the response of local communities. During the demonstration period, a local steering committee was formed at each site to facilitate and implement SHAF. Steering committee guidelines were developed that identified the tasks necessary for local implementation of the program. The guidelines did not meet the needs of all steering committees on how to carry out their responsibilities. Response to needs expressed by steering committees were made through telephone calls, letters, and site visits by AARP and Red Cross core staff. At various times during the project demonstration period, the guidelines were clarified and updated.

In the last year of the project, information was collected in six communities to determine factors associated with more successful and less successful implementation of HPOA during this start-up phase of the project. Core staff selected the six communities for the study by rating all sites where the program had been in operation for 8 to 18 months. Multiple performance criteria used included the organization and function of the steering committee and educational team, marketing efforts, course enrollment and drop-out rate, scholarship funds raised, and quality assurance evaluations. Two communities from both the top and bottom of these ratings were selected. Two additional sites were chosen from the middle range of scores which would add to the geographic coverage. The sites represented both large and small cities with population ranging from 40,000 to almost one million, and were located in the Southwest, Midwest, and Northeast.

External consultants not associated with any of the three sponsors were retained to travel to the six selected sites to interview key people. Persons interviewed included the contact persons for AARP and Red Cross, steering committee members, educa-

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three sponsors were retained Persons interviewed included committee members, educa-

tional team members, and local health and aging network agency staff. The consultants spent one and one-half to two days in each community and interviewed a total of 90 persons.

Information was collected on how SHAF and the steering committee was perceived and functioned, the involvement of participating organizations, support and barriers to implementation of SHAF, and the changes that occurred over time. An attempt was made to identify the critical decisions in planning and implementation that had either a positive or negative effect and to identify factors of leadership that were crucial to the successful implementation and continuation of SHAF. Finally, the interviewers were asked to analyze the various organizational and individual communication processes for their impact on local planning and implementation.

Factors found to be related to more successful implementation included: a clear working relationship between the sponsoring organizations, an active steering committee with the chairperson assuming a leadership role, availability of Red Cross resources and staff, committed involvement of the educational team members, and targeting specific population subgroups to recruit participants.

Information obtained during the study was used to develop a SHAF community implementation guide to provide tips, strategies, and suggestions to aid in future community planning and management of the program. The SHAF Newsletter was used to share implementation ideas, policy information among sites, and suggestions for obtaining local resources. The roles and responsibilities of AARP and Red Cross identified as essential for community implementation were spelled out in a memorandum of agreement developed by both organizations and issued through official statements to their respective chapters.

Determine Cost of Local Implementation of SHAF

To gain specific information about the real costs of the SHAF program, how costs vary among communities, and what potential exists for cost recovery, a cost accounting study was conducted. The study was done in two phases: one in February-March of 1987 with six sites and the other in September-October of 1987. Thirteen community sites provided complete data for the analysis.

All data were obtained by a telephone interviewer with a local person who had agreed to collect information prior to and during a SHAF course using a data collection form sent to them by DIBH. An analysis of the data collected identified three major costs incurred in organizing and operating a SHAF course at the local level. These were: personnel time to plan the course, personnel time to teach the course, and course materials.

Table 1 shows the mean costs incurred at the local level and the revenues generated to recover costs in organizing and operating the SHAF courses as well as the range of costs across the sites analyzed. Data are presented by the course and by the individual consumer (e.g. "completer") who successfully completed nine of the eleven sessions in the course.

The costs for SHAF in each of the sites varied greatly. The most expensive site used regularly-employed Red Cross Staff extensively for the above three items. The sites that had lowest costs per course made heavy use of volunteer instructors, many of whom were paid staff of other agencies. In addition, supplies were contributed from local organizations.

Table 1. Summary of SHAF Program Costs (N=13)

Unit of Measurement	Average Direct Cost (\$)	Range (\$)	
		Low	High
Expenses/Course	1,106	422	2,173
Revenue/Course ^a	202	30	495
Net Cost/Course	904	224	1,936
Expenses/Completer ^b	87	25	216
Net Cost/Completer	71	11	196

^a Revenue varied from \$11 to \$15 per enrollee; additional funds donated by local groups.

^b Completer is a participant who attends nine of eleven sessions.

The program costs in the table were confined to direct costs based on resources reported as consumed specifically for SHAF course. The time Red Cross chapter staff spent in planning and administration activities with SHAF, their indirect costs, were omitted. Hence the costs presented are not a reflection of total costs. When teaching was done as part of a Red Cross employee's usual tasks, this time may not be considered a true cost. However this "opportunity cost" must be implicitly considered by a local chapter when it sets priorities among different programs it chooses to offer.

The information collected in the Cost Study identified at least four ways to effectively reduce the cost of offering the SHAF course. Volunteers could be used as facilitators and instructors and regular paid staff who are not working at capacity could be used to coordinate, facilitate, and instruct. Collaborative agreements with other community organizations who agree to teach and/or provide funding support under the auspices of AARP and Red Cross could be developed, and private or community sources of financial support for the course in general, or for specific items such as teaching materials or an instructor could be identified.

Several of the respondents suggested enlisting other community agencies in the delivery of SHAF as a viable method to reduce the cost of offering the program as well as strengthening ties in the community. This community agency could agree to have its staff trained to be SHAF instructors (e.g. hospitals, HMOs, nutrition sites) and assign them to conduct community SHAF courses. All SHAF instructors represent their own organization as well as AARP and Red Cross.

Cost was only a part of a community decision to offer the SHAF course. There were obvious benefits consistent with the mission of AARP and Red Cross. For each local chapter there were also more subtle benefits. These included: building bridges with other community agencies; improving visibility and image in the community; enhancing recruitment of volunteers; increasing organizational membership and participation and creating a more health conscious public.

HPOA OUTCOMES

Disseminate SHAF Nationally

The original objectives for the nationwide dissemination of HPOA listed in the grant proposal were met or exceeded during the three-year period of funding for all

Range (\$)	
Low	High
422	2,173
30	495
224	1,936
25	216
11	196

nal funds donated by local

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indicators except the number of persons enrolled in SHAF courses. The geographic dispersion of HPOA occurred in 24 states and the District of Columbia, which represented all sections of the United States. SHAF courses were conducted in over 70 communities; the projection in the proposal was 60. Twenty-six educational team workshops were conducted (19 projected) in which 390 educational team members (300 projected) were trained. Four instructor-trainer workshops were held and 38 instructor trainers (40 projected) were prepared; all had entered the program as educational team members. In addition, 12 persons who completed a SHAF course were later trained as educational team members.

The project was very successful in obtaining volunteers with exceptional abilities for the delivery of SHAF. They were very committed to the program; less than 10% were lost; these were due to illness of family members, death, employment changes, and a move to another community. The strategy of developing growth from within was realized through the preparation of SHAF instructors as instructor-trainers who were located in all areas of the country, and older adults who took the course and volunteered to become prepared as SHAF instructors.

The number of consumers completing a SHAF course was less than projected in the original grant proposal (2640 vs. 3300). A major factor was a delay of six months in training educational teams due to time spent on organizational and program adaptation tasks. Other factors associated with the unattained consumer goal were identified as the need for better guidelines for the local steering committee to function effectively in marketing SHAF and time needed by a community to prepare itself for introducing SHAF. The time factor was associated with organization of a steering committee and selection of educational team members prior to a workshop date. Advance notice of six months to a year was needed to have SHAF included in the schedule of activities at senior centers, nutrition sites, senior clubs, and other groups.

Other communities identified local program competition in health education for older adults as a factor affecting SHAF enrollment. In several of these instances, the competing organization (e.g. a hospital or nutrition site) was later invited and became involved in the delivery of SHAF courses. These organizations reported that this choice was made to take advantage of the benefits of a comprehensive health promotion program with well-prepared instructors and materials.

Improve Participants' Health Knowledge, Skills and Actions

Data were collected on all SHAF courses offered during the project to provide a description of participants and the gains they reported from their experience. A typical SHAF enrollee was a 66 year old married female with a high school education. Most course participants (70%) were national members of the AARP. Two-thirds of SHAF enrollees reported that they had chronic medical problems that required continuing care by a physician, and one-third considered themselves to be physically limited by a medical condition. Course participants ranged in age from 35 to 81 years, and had education levels from grades 4 to 6 to a college degree or more.

The SHAF course produced some favorable outcomes for consumers that contributed to AARP and Red Cross administrations' interest in continuation of the program. An evaluation study of the impact of SHAF participants, included elsewhere in this issue of the *Health Education Quarterly*,¹³ reported that 97% rated their overall

satisfaction with the course as excellent/very good; and 98% would recommend the course to their friends. The overall completion rate for the program (attendance at a minimum of nine of the eleven course sessions) was high, 92.5%. The study also reported that participants had an increase in their perceived abilities to perform health skills, use a medical/health reference text, and registered significant improvements in lifestyle actions and abilities to use consumer knowledge for health cost savings.

In addition, a high proportion of the participants reported they had changed their behavior specifically because of their participation in SHAF. For example, more than eight out of ten indicated that SHAF helped them to take specific actions to keep their spirits up, know better how to stay mentally healthy, communicate better with their doctor, and have a better idea of when they should or should not contact their doctor. In addition, over six out of ten SHAF graduates indicated that they learned new ways to save money on health care, changed the kinds or amounts of food they eat, and get more physical exercise.

Designate SHAF as an AARP/Red Cross National Program

The Memorandum of Agreement, which specifies how future use of SHAF will be controlled by the three organizations, was signed by officials of AARP, Red Cross, and DIBH. The differences in organizational structure and resources that are relevant to the continuation of SHAF under joint sponsorship of AARP and Red Cross were identified and formulated into policy decisions for this agreement. In addition, the specifications of copyright requirements for the use and revision of SHAF materials were set forth. A periodic review of program materials was set every three calendar years beginning in January, 1991.

Announcements about the terms of the agreement appeared through official channels of both organizations at national, regional, state, and community levels. In general terms, both organizations agreed to promote local steering committee involvement and support. AARP will continue to use its extensive networks with older adults to publicize the SHAF program, to attract educational team volunteers, and SHAF course participants. AARP's Health Advocacy Services and Development Leadership Training Department will contribute to the training of educational teams.

The management of SHAF in local communities will be done through Red Cross chapters with staff support. The community steering committees may change their name but the involvement of multiple agencies and groups will be continued. Red Cross will incorporate training for educational teams and instructor trainers into the "usual program operation plans" consistent with community needs and available resources. Meeting these standards will involve volunteers and staff at national, regional, and local levels.

Adapt SHAF for Minorities

Small pretest and pilot studies were undertaken to assess the acceptability of SHAF to older Asian-Americans, Blacks, and Hispanics when offered to them in exclusive groups. A description of the Asian-American study appears in this issue of the *Health Education Quarterly*.¹⁴ A pretest of SHAF was conducted in Tennessee with an older

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8% would recommend the program (attendance at a health fair, 92.5%). The study also found significant improvements in health cost savings. They had changed their behavior. For example, more than 50% took specific actions to keep their blood pressure under control, communicate better with their doctor, or should not contact their doctor if they learned they had high blood pressure or amounts of food they

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future use of SHAF will be determined by the findings of AARP, Red Cross, and other community resources that are relevant to the needs of AARP and Red Cross were in agreement. In addition, the dissemination of SHAF materials is set every three calendar

months through official channels at the community levels. In general, the advisory committee involvement and with older adults to publicize the program, and SHAF course materials. Leadership Training

will be done through Red Cross chapters. The advisory committees may change their behavior. Red Cross instructor trainers into the community needs and available resources and staff at national, re-

Black population, and in Texas with Hispanics using translated course materials and bilingual instructors. On the basis of favorable response and culturally specific findings in the preliminary studies by all three groups, the HPOA Advisory Committee recommended that efforts continue throughout both AARP and Red Cross to gain support for further study on adapting SHAF programs to these groups. They pointed out that an advocacy leadership role by the national organizations could make a valuable contribution to overcome the lack of program development for these populations.

Obtain Continuing Financial Support

The cost study results were presented to members of the HPOA Advisory Committee. They discussed the findings and suggested a number of ways to manage the major community costs, which included the management costs borne by Red Cross chapters and the expense of bringing instructor trainers to a community to prepare volunteers as education team members. In addition to the suggestions made from the cost study analysis results, the advisory committee offered the following ideas for covering course costs: (1) obtain funds from local groups (e.g. AARP chapters, medical society, or auxiliary) to pay the SHAF course fees for enrollees unable to pay and thus follow AARP and Red Cross policies of not restricting programs only to those able to pay, (2) use the "apprenticeship" method of preparing additional volunteers in a community as education team members, and (3) appoint some SHAF instructor-trainers as AARP Health Advocacy Services coordinators to provide training programs for new sites. Seventeen of these positions have been budgeted. Under this designation they have their volunteer travel paid when serving in the capacity of a SHAF instructor-trainer.

ANALYSIS OF HPOA EXPERIENCES

The strategies applied to organizational collaboration and dissemination of HPOA through a multiorganizational system are derived from social diffusion concepts. These include Bandura's four ingredients in the social diffusion process³ and Rogers' five stages in the innovation process in organizations.¹⁵ In this section, an analysis is presented on how these concepts were related to the strategies as well as the way the HPOA experience relates to that of other reports on diffusion of innovations in organizations. Bandura's four ingredients are used as headings for the discussion.

Select Optimal Setting for Introducing Innovation

The nationwide dissemination of HPOA required organizations that had the structure, resources, and perceived need for the innovation. These elements were present in both AARP and Red Cross. Their agreement to jointly sponsor health promotion programs for older persons enhanced the prospects for the HPOA project. The availability of a proven effective program for this collaborative effort provided a model with benefits visible to decision makers at all levels of their organizations. The innovation could be introduced on a trial basis and modified to accommodate new organiza-

the acceptability of SHAF was determined to them in exclusive of this issue of the *Health* in Tennessee with an older

tional needs. Information gathering, conceptualizing how the organizations would jointly conduct the project, and discussing the way the innovation would be adapted fulfilled the agenda-setting and matching stages as set forth by Rogers in his paradigm on the innovation process in organizations.

Create Necessary Preconditions for Change

Provision of positive incentives and building support into the system to sustain the changes were the two key factors that favorably influenced the organizations to change. As described earlier in the development of the proposal, representatives of each organization met to determine their roles and responsibilities for all the tasks identified in conducting the HPOA Project. All agreed that the materials would be adapted and the implementation plans would be adjusted to the policies and procedures of the two organizations. These actions were an incentive to the joint sponsoring of the program. The proposal also provided a mechanism to resolve differences by involving staff at all levels in both organizations to tailor the innovation to their needs and patterns of operation so HPOA would be compatible and acceptable. The program was visualized by both organizations as contributing to existing policies and organizational goals.

The establishment of an advisory committee with policy level members who had experience at all levels of the operation added an important element to the condition for change unique to the multiorganizational system. The committee members were effective in analyzing the structural and policy differences in AARP and Red Cross and then finding ways to obtain adjustments that met the needs for disseminating SHAF.

Thus, the main sequence of decision, actions, and events needed to introduce HPOA into the organizations were identified. The complexity of the innovative process in organizations as described by Rogers required an alteration of channels of decisions and actions related to the innovation. Many, but not all of these, were anticipated and mechanisms developed to respond as problems arose.

Implement Demonstrably Effective Program

The events, actions, and decisions involved in putting the innovation into use focused on the resolution of differences in program delivery by the three organizations. DIBH had a demonstrably effective SCSC program, AARP had their consumer advocacy program delivery system, and Red Cross had many health education and service programs and a training system in operation. The multiorganizational system required a delivery system that each would find acceptable. During the implementation phase, differences in policies and operations between AARP and Red Cross were identified and had to be resolved by core staff and/or the advisory committee. Their actions included referring the problem to policy level staff in AARP and Red Cross. The differences included organizational policies. For example, AARP rarely charges a fee for a program while Red Cross had recently introduced a cost recovery policy. The resolution was that the cost of the course become a payment by SHAF participants for course materials, rather than a course fee. The criteria for certification as a

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course instructor were also different for the two organizations. A recombination of these criteria had to be agreed upon by the administrative office responsible for training at both AARP and Red Cross.

The HPOA strategy was to persuade higher officials of AARP and Red Cross to commit some of their resources to an innovation of demonstrated value. To accomplish this, the project staff trained the necessary personnel to implement SHAF and tested an alternative delivery system for the collaborative effort. These actions demonstrated a feasible and effective method in the use of combined resources and thus provided both the guidance and incentive for change.

Evaluation feedback from field experience was used as the "objective data" for making changes in the preparation of persons to deliver SHAF and in providing guidance for community organizations to plan, implement, and monitor the delivery. The Impact Study,¹³ and an after course survey of educational teams, provided extensive data for the revisions of SHAF, development of a community implementation guide and the educational workshop training manual.

The actions described above fulfilled the redefining/restructuring and clarifying stages in Rogers' implementation process that are key elements in the decision to adopt an innovation.

Disperse Innovation Through Successful Example

National, regional, and local communication channels were used to create an awareness of SHAF and to gain support for its implementation. Results from education of SHAF courses and educational team workshops showed a very high level of acceptance and benefits. These results were shared with both organizations at all levels and favorably influenced the adoption of HPOA.

The organizations joined the project with an agreement to revise and add to the health promotion program as they identified barriers and constraints to their operations. The three-year project was introduced as a pilot test with expectations that in the implementation process the program would be adapted to both organization's needs. Thus, as organizations they had a high degree of reciprocity in bringing their influence to bear on the final HPOA products.

As Rogers points out, it is difficult to alter the practices of established systems, even ones that are only marginally effective, by internal changes alone. Those who administer them either have a vested interest in preserving existing arrangements or are wary of trying new approaches. They may be willing to risk a demonstration trial whereas they understandably resist large-scale changes where there is some uncertainty about the costs and benefits.³

AARP and Red Cross issued national statements through their interorganizational channels to notify decision-makers about the availability of SHAF as a jointly sponsored program. The members of local steering committees and educational teams served as an informal exchange structure and initiated the spread of SHAF to nearby communities. As with other innovations, the opportunity to view an innovation adopted by one's peers is an effective means for diffusion. These actions relate to Rogers' routinizing the innovation. SHAF lost its identity with DIBH and became a recognized program of AARP and Red Cross.

DISCUSSION OF OTHER STUDIES

A comparison of the community level dissemination of HPOA with one reported by Fraquhar and Maccoby¹⁶ points up some of the HPOA weaknesses. Components of individual self-directed change were used by these researchers to create self-sustaining structures within a community for promoting health. Local organizers were trained to take charge in the coordination and implementation of programs through the use of existing social, occupational, and educational networks. HPOA preparation for local organizers was limited by the expertise available through chapter staff and the guidelines provided for steering committees. HPOA relied on written guidelines and verbal communications with core staff to provide support for the indigenous leadership. The functioning of the steering committee was recognized as the weakest link in the implementation of SHAF. In response to this problem, the AARP and Red Cross developed a detailed community implementation guide for community sponsors. The guide was based on data obtained from reports of local community implementation problems and their resolutions.

Whether this multiorganization collaborative effort will continue to develop as an effective channel for dissemination of SHAF cannot be judged fully and completely for several years. The outcome will depend on how many communities currently conducting SHAF courses continue to do so and how much additional dispersion of the program occurs. Research on the diffusion process indicates that the decision to continue an adoption in organizations is less certain than with individuals due to a much more complicated innovative process.³

A study by Peltz¹⁷ examined several cooperative relationships to determine if there were significant common factors that relate to success. He found four significant relationships: (1) a negotiated agreement that is comprehensive but not overly restrictive or detailed; (2) assurance that good communications exist; (3) key administrators and managers included in agreement negotiations; and (4) partners sought with whom previous contact had been established. The HPOA grant proposal and the AARP and Red Cross Memorandum of Agreement contain these factors.

Another possible influence for accepting the innovation was "the performance gap" identified in a survey of chapters by AARP and Red Cross in which the organizations had an agreement for cooperative health promotion programs for older adults but their chapters had taken only limited action. Organizational studies have found that when a "performance gap" is identified, there is a strong impetus to search for an innovation.¹⁸

The process of involving communities in the revision of HPOA procedures and the adaptation of SHAF through pilot testing with local instructors was viewed as horizontal diffusion of innovation. This strategy of providing geographic coverage for the spread of SHAF made it visible to "near peers." There are several examples of how a change from vertical diffusion to horizontal diffusion produced success. Two of these examples were in the health field: The Regional Medical Program of the mid-1960s¹⁹ and a school health education program a decade later through The National Diffusion Network.²⁰

Motivations behind adoption of an intervention have been grouped into three categories of benefits by Downs and Mohr.²¹ The benefits include: (1) programmatic: increased effectiveness and efficiency; (2) prestige: recognition and approval that accrue to the organization; and (3) structural: greater worker satisfaction and better

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been grouped into three clude: (1) programmatic: nition and approval that er satisfaction and better

internal relationships. The HPOA experience suggests that all three occurred during the demonstration period. Use of programmatic evaluation data improved SHAF operations. All three organizations received recognition at national and community levels for their HPOA efforts. Educational team members and community resource persons reported tremendous satisfaction with SHAF courses and the benefits of teaching as a team member. The future spread of SHAF could be affected by whether these benefits continue to accrue to the sponsors.

Other Influences on Diffusion of HPOA

Although the actions taken in the HPOA project included many areas of satisfaction and success in disseminating SHAF, the core staff noted some factors which create difficulties. No attempt was made to systematically study in what ways or how much each of these items may influence the future diffusion of SHAF.

One set of factors highlight the differences between AARP and Red Cross. The two organizations have: different histories and missions, different structure at national, regional, and local levels, different sources of funding, (AARP is a membership fee organization, where Red Cross depends on donations), different ratio of volunteers to staff (AARP field organization is based on volunteers, while Red Cross is based on both volunteers and paid staff), and different program and service priorities. The latter differences have increased since the initiation of HPOA. Red Cross has reduced its emphasis on health promotion and AARP has increased staff and volunteer support for these programs.

Another set of factors relate to the past experience and preparation of project staff that brought varied outlooks and competencies to HPOA. These undoubtedly contributed to many areas of success, however, they also resulted in major disagreements on the actions that should be taken to develop, implement, and evaluate SHAF. The latter were usually solved through compromise or decisions were postponed until participant evaluation data and feedback from communities were available and became a basis for determining the action. When the differences were related to organization policies, the problem was taken to the advisory committee for guidance.

Time Factor

Limited time allotted for task completion throughout the grant period created conditions in which quick decisions and actions had to be taken. Implementation plans were delayed by the extended time both organizations needed to review the SCSC materials and make them consist with existing policies, procedures, and program content in AARP and Red Cross. Site selection for the demonstration communities required extensive negotiation by organizations to arrive at locations that matched their local interests and resources. These two delays then required quick action for communities to select educational team members in time for scheduled workshops and to keep the enthusiasm of the team by arranging for an early offering of the SHAF course. The policies and procedures now established by AARP and Red Cross provides for local community initiative in arranging for SHAF, hence the time needed for advance planning can be controlled by the community.

Local Staff Turnover

When Red Cross staff changed at the chapter level and AARP volunteer leadership rotated between state and local levels, community implementation efforts suffered. Since these changes are to be expected, some form of "institutional intelligence recording and briefing" needs to occur at the community level. Information about who does what and how it does or does not work could make for improved operations over time.

A review of the stresses that occurred among the staff, led them to make several suggestions for the development of future collaborative efforts in the project development phase. The recommendations made were: (1) discuss the strengths of each organization and build on these with a recognition that responsibilities will differ; (2) identify organizational policies that conflict, then agree on resolution prior to initiating the project; (3) set time lines in relation to staffing patterns and increase time estimates by 25 percent; (4) delineate expectations at every level and provide for effective communication of these; (5) recognize that policy support and field support change over time and this will have an impact on the project's plans.

SUMMARY AND CONCLUSIONS

The HPOA project was successfully established as a joint AARP and Red Cross national program with substantial program and operational support. The SHAF program has visibility nationwide. A cadre of well-prepared committee volunteers are available to conduct the SHAF course. There is a group of instructor-trainers widely distributed in all areas of the country who can conduct local educational team workshops to continue the implementation and geographic spread of SHAF. A community implementation guide has been produced to provide local sponsors with specific information to initiate and maintain an effective high quality SHAF program in each community.

The HPOA program was improved through evaluation of all aspects of program development and implementation. Evaluation data were collected and analyzed for the revision of program materials, the training workshops, delivery of SHAF and guidance for community steering committees. Preliminary studies of how appropriate SHAF could be with Blacks and Hispanics suggested that a receptivity for health promotion was present. Several specific content items and changes in educational approaches were identified. These findings need to be tested with controlled conditions and larger number of participants to determine their generalizability.

The change from full-time project staff with AARP and Red Cross to the assignment of the SHAF program to a regular staff activity with multiple duties will be a test of how successful the dissemination of SHAF will be as an ongoing AARP and Red Cross program.

This article presented a conceptual framework to guide the strategies in building a collaborative multiorganizational structure that would successfully implement nationwide a proven effective local health promotion program for older adults. The specific steps taken to enlist participation, identify problems, feed back evaluation results, and enlist support for all the components of the collaborative and dissemination effort were described. An attempt has been made to supply the reader

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with details of what was done, when, how, and why. The rationale to support these efforts and their interpretation was identified with recognized expertise in diffusion theory and its application. The shortcomings of the preplanning phase and community implementation guidance were discussed.

Since the completion of the grant, the final decision for offering the course rests at the community level. Activity in the first year after the grant period included at least five educational team workshops conducted by instructor-trainers prepared by the project staff. Although national SHAF statistics are not available, informal reports from both organizations indicate that SHAF is an ongoing program in many of the demonstration communities and is being introduced into new sites. In addition to Hawaii, New Mexico is now making SHAF a part of its statewide health promotion program.

The impetus for additional activity was slowed by a delay in publication of the SHAF course materials. However, both organizations have contributed substantially to the preparation of the final version of these materials. In addition, AARP increased its level of support through Health Advocacy Services, adding travel funds for SHAF coordinators and instructor-trainers. Red Cross chapters have continued to provide staff support and resources for SHAF.

What happens to SHAF in the next three to five years will be an important determination of how effective the strategies were in making this an ongoing program in AARP and Red Cross. Monitoring of the maintenance and further dissemination of SHAF is necessary to separate the true effects of the project from those associated with support given during the grant period.

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