Chapter 5

Dissemination, Facilitation, and Maintenance of Office-Based Cessation Assistance

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Dissemination, Facilitation, And Maintenance of Office-Based Cessation Assistance

Editor: David M. Burns

INTRODUCTION   The successful approaches used by health care providers to alter the smoking behavior of patients are presented in the preceding chapters of this monograph. Likewise, the enormous impact that could be achieved if the 70 percent of smokers who see a physician each year and the 60 percent of smokers who see a dentist each year were to receive advice and assistance in quitting is well described. However, the majority of smokers who saw a physician in the past year did not receive advice to quit on their last visit, and one-half of all smokers have never heard from their physician that they should quit. To modify the behavior of physicians and dentists will require the application of the recruitment strategies, motivational approaches, and training methods developed by the investigators responsible for the trials described in the early chapters. It will require also the application of effective methods of disseminating and institutionalizing office-based smoking cessation assistance as part of the systems by which we deliver and receive health care. The process of moving from a research or demonstration project to widespread acceptance of a health promotion/disease prevention program is often the most difficult part of technology transfer in cancer control.

Chapter 5 presents what we know about disseminating and facilitating smoking cessation assistance in medical and dental practice settings. Just as the previous chapters delineate the importance of changing office-based patient flow and information systems to sustain physician compliance in regular counseling, this chapter details the kinds of changes that can be made in systems outside the physician's office that will encourage more physicians to provide regular counseling as well as make their advice more effective. The important questions of how to recruit and train practicing physicians, dentists, and their staffs; how to sustain motivation and meet the ongoing training necessitated by staff and practitioner turnover; and how to use office systems and staff to enhance the effectiveness of clinicians' advice are addressed in this chapter. These issues constitute the groundwork for the successful institutionalization of cessation advice into U.S. medical and dental practices.

The first section, by Solberg, deals with smoking cessation as a clinic quality improvement project and addresses the issues of disseminating and, more important, maintaining smoking cessation assistance in physicians' offices. It uses the rapidly growing quality assurance effort in medical practice to both motivate and institutionalize smoking cessation advice in an

office practice. Solberg presents a clear process for introducing smoking counseling into a practice as part of the effort to continually improve the quality of delivered care. Tools for monitoring the success of the effort and for modifying it to improve its effectiveness are described. This approach provides the ongoing feedback needed to sustain the cessation effort as well as the documentation that third party payers need to ensure that the preventive services they have contracted for are being delivered.

In the second section, McPhee and colleagues describe a computerized system for reminding physicians to provide advice, track the success or failure of the advice that is given, and provide the summary data on overall physician behavior that would facilitate the continuous quality improvement process. The linkage between the process and technologic solutions described in these first two papers may well be synergistic in promoting the acceptance of office-based smoking assistance.

Regardless of the approach selected, dissemination of office-based interventions will require recruitment and training of physicians, dentists, and their staffs on a large scale. Three approaches to this problem are presented in this chapter, dealing with communities at three different levels: local, state, and national. Strategies for recruitment and training of health care providers as one component of a comprehensive community-based smoking intervention effort are described by Lindsay and colleagues, through the experiences of the COMMIT trial. Their section describes approaches that can be effective in communities with populations of about 100,000, and that can be incorporated into efforts directed at community mobilization for a comprehensive tobacco control effort. A second approach to physicians, on a statewide basis, described by Goldstein and coworkers, uses professional organizations to recruit physicians and incorporate "academic detailing," whereby skilled individuals visit physician offices to motivate and train physicians and their staffs for providing advice and assistance in smoking cessation. This approach deals with physician-based smoking cessation as a separate project, rather than as a part of a comprehensive tobacco control effort, but identifies realistic methods for using outside resources to help develop and sustain smoking cessation advice in an office practice.

The last dissemination approach, described by Manley and colleagues in the final paper of this chapter, is the National Cancer Institute effort to develop and implement a national training program for health care providers to improve their knowledge and skills for helping patients to quit smoking. The authors present approaches used to develop materials that synthesize what was learned from clinical trials and the strategies used to recruit physicians and dentists to participate in the training. The increasing medicalization of smoking as a health care problem and its acceptance by physicians as a problem they must treat with each patient will lead to smoking intervention being more and more a part of systems for health care delivery.

Smoking Cessation as a Clinic Quality Improvement Project[1]

Leif I. Solberg

INTRODUCTION   Numerous studies in a wide variety of medical settings have demonstrated that physician advice to stop using tobacco can be very effective. Individual studies (Cohen et al., 1990; Cummings et al., 1986; Glynn and Manley, 1990; Ockene, 1987) and a meta-analysis of the controlled clinical trials (Kottke et al., 1988) have both demonstrated the characteristics of interventions that lead to the greatest probability of successful quitting among tobacco-using patients who are seeing a physician for care of some other problem. In general, these studies show that medical interventions are most effective when they are

- Provided at nearly every encounter over the longest possible time by both physicians and staff;

- Aimed at those interested in changing their behavior;

- Presented in a clear, supportive, and nonconfrontational manner that concentrates on specific plans, assistance, and followup for quit attempts;

- Supported by various easily available forms of assistance, both behavioral and pharmacological; and

- Followed by positive reinforcement after quitting occurs.

Nearly all physicians agree that tobacco use is a very serious health hazard. However, their patients often do not receive advice that meets the above-mentioned criteria. In addition to the need to focus on the problems that patients bring, there are many other barriers, such as lack of time, reliance on the physician's memory, lack of staff support, and an approach that does not emphasize these criteria. Research on physician behavior suggests that, if this situation is to be changed, organizational changes that support office smoking cessation systems will be necessary (Battista and Mickalide, 1990; Belcher et al., 1988; Inui et al., 1981; Pommerenke and Weed, 1991). These systems must include the following:

- Staff involvement and support;

- Reminders to physicians to intervene during office visits;

- Brevity, so that physicians can provide advice at nearly every visit;

- A variety of assistance for patients who need it; and

- Followup without requiring physician time or memory.

It is clear that, for these actions to occur regularly, systems must be in place that screen and label charts of all patients for tobacco use and that all components of the system are maintained and upgraded regularly.

In addition, it may be necessary to train physicians in the importance of conducting and how to conduct brief discussions of smoking cessation as a part of normal office visits. However, there is reason to believe that little more than a brief orientation may be necessary with proper office system support.

Individual physicians, medical care organizations, and public policy-makers must decide how to initiate and maintain these office systems in primary care settings if we are to gain maximum physician impact. Although there have been some examples of external intermediaries successfully imple-menting these systems in representative practices, this diffusion has required considerable effort, experience, and resources.

EXTERNAL INTERMEDIARY SUPPORT   After demonstrating the feasibility and value of an office system to accomplish the smoking cessation objectives described above in one clinic (Nokomis) (Solberg et al., 1990), the National Cancer Institute-sponsored Doctors Helping Smokers (DHS) project team decided that the next task was to demonstrate that typical private primary care practices would want to (and could) accomplish the same thing. Because the DHS co-principal investigator was also the Medical Director for Quality Assurance for a health maintenance organization (Blue Plus) that contracted with more than 100 private primary care practices throughout the state of Minnesota, a collaborative relationship was developed between the research project and the HMO.

Eleven of the practices contracting with Blue Plus were selected as the target group (on the basis of location, with no awareness of their interest in either smoking cessation or this project). None of these practices had more than 15 percent of their patients covered by Blue Plus.

These practices were "recruited" by the Medical Director through an introductory letter, which was followed by a phone call and a visit. The practices were told that they were under no obligation to cooperate, but if they were willing, we would teach and help them to implement an office smoking cessation system that had already been demonstrated to be feasible and effective.

All 11 practice groups contacted (representing 29 separate clinics) discussed the project with us, and each agreed to try it in at least one of their sites. Over the course of the next 2-1/2 years, 24 of these 29 clinics initiated an office system very similar to that at Nokomis; at the end of that period, 8 clinics were maintaining a full system and 6 were maintaining a partial system. This represented 48 percent of the clinics.

A full smoking cessation office system consists of the following:

- Routine screening of all patients for tobacco use status at every visit;

- Labeling of all charts as either users or non-users;

- Establishing a separate smoke card for each tobacco user;

- Use of the smoke card to remind physicians to discuss tobacco use, to document each tobacco use discussion, and to communicate to the staff any plans made with the patient;

- Delivery of self-help booklets during office visits to any tobacco user interested in quitting;

- Followup by brief telephone calls after quit dates;

- Provision of some type of counseling assistance; and

- Establishing a smoke-free clinic policy.

The intervention with the practices consisted of an introductory full-day workshop and subsequent quarterly half-day refresher meetings attended by no more than three staff members from any one clinic. Only 10 percent of physicians in these clinics ever attended any of these workshops. In addition, 1.5 FTE (full-time equivalent) nurse coordinators from DHS visited or called the clinics regularly, and one of the DHS physicians visited infrequently. Clinics were provided with materials for training and distribution to patients and were encouraged to establish a support structure including

- Establishment of a clinic-wide policy for the system;

- Identification of a staff and a physician coordinator able to provide strong leadership for the program;

- Development of an implementation plan and start date;

- Orientation and training;

- Arrangement for necessary resources;

- Cooperation with performance audits by DHS nurses; and

- Efforts to provide feedback and spirit-building events.

The components of the smoking cessation system that seemed to be most difficult for clinics to establish and operate were those providing followup and any form of assistance or counseling. The component that tended to decay most easily once started was consistency of smoke card use, especially by the physicians. All of this was most dependent on strong and creative leadership by the physician and staff coordinator.

It was difficult to predict which clinics would be successful and which would not, primarily because of the limited knowledge that the DHS team had about each clinic during the first phases of the project. As clinic and individual patterns of behavior became clear, it became possible to identify the problems that interfered with successful adoption of a smoking cessation system. We believe that most of these problems would have the same effects on adoption of any other system (and in fact were doing so for existing operations). The main problems were general clinic stress, the motel syndrome, and ineffective leadership.

General Clinic Stress   Anything that caused great stress and required everybody's attention distracted the staff from the clinic's ability to start a new system. For example, one large clinic that never even got started (despite original expressions of understanding and great interest) was undergoing great financial stress because it was losing affiliation with another HMO that controlled many of the patients. Another large clinic got off to a fair start but then decided to end its affiliation with an HMO and lost 25 percent of its patients. This led to the loss of an equivalent share of physicians and staff and, not surprisingly, to the dissolution of their smoking cessation system. A third clinic did very well for more than 3 years but quit when it became stressed by an increased patient load.

The Motel Syndrome   Although individual practice is nearly nonexistent in Minnesota primary care, some group practices are really solo practices in disguise. The physicians practice in their own individual ways, sharing only billing, lab, and call systems. Because the DHS approach requires policy and procedure agreement if it is to be effective, it was only marginally effective in such clinics. If one or two physicians wanted to use it between themselves and their nurse, that was possible, but such efforts tended to be short-lived. One dedicated physician went on very well for more than a year by himself before quitting, and soon thereafter he left the clinic altogether.

Ineffective Leadership   Each clinic needed to have at least one physician who was respected by the others, believed this approach was important, and understood how to foster organizational change. It was clearly not enough to find a physician advocate who believed strongly in fighting tobacco use. If that physician was primarily a social activist against tobacco or took an individualistic or moralistic approach, he or she was unlikely to understand or support our approach. Beyond that, such attitudes would result in other physicians at the clinic labeling the enthusiast as unrealistic or radical. In any case, a physician who knew how to forge support for a group approach was essential.

It was also necessary to have a staff person with the authority, ability, and desire to implement the system. If any of those elements was missing, the system tended to be less effective and to fade over time. An effective staff coordinator could make up for the absence of an effective physician leader for a while. However, because even such a person has very limited ability to affect physician behavior, the staff would eventually get discouraged by the lack of cooperation from the physicians.

One of the best clinics exemplified this problem when, after 3 years of effective operation, the physician coordinator went on maternity leave and eventually returned on part-time status. Although the staff coordinator continued to be very involved, the physicians stopped using the system as much, leading to discouragement and inactivity on the part of the nurses. When the additional stress of an increased patient load developed, this clinic decided to "take a break" from the system.

A minor factor in some clinics was the personal use of tobacco by physicians or staff. We found that such use of tobacco was much less of a problem than the user's attitude about it. For example, although one of the most dedicated smoking cessation workers was a receptionist who smoked, she organized and used the smoke card system very effectively. However, in another clinic, posters and signs mysteriously disappeared as the staff coordinator put them up, the result, she believed, of sabotage efforts on the part of disgruntled smoking staff members.

Clearly, it would be best to identify these problems ahead of time and make adjustments. One detection device may be to see how other patient care systems are functioning; another may be to require some data-gathering task and then measure the accuracy and timeliness with which the clinic complies.

Given the potential for these problems, one might ask whether it is possible to set up the system that we are recommending. We believe that the fact that 48 percent of these randomly selected typical clinics in a high-stress, high-competition environment like that in Minnesota were still operating reasonably good DHS systems 2-1/2 years after being approached demonstrates both the compatibility and utility of the system and the possibility of stimulating it from the outside.

After completion of the grant, Blue Plus agreed to continue the intervention on its own, hiring a 1.0 FTE nurse coordinator and a 0.2 FTE physician expressly to continue and extend this project to its other clinics. The only major change was to work with clinics that volunteered interest, so as to make more efficient use of Blue Plus resources. In the subsequent 1-1/2 years, another 13 Blue Plus clinics set up DHS systems with our help, and the previous ones continued to receive some support. In addition, six more Blue Plus clinics would like to start, and several clinics from other HMOs have adapted and adopted the system with minimal help from us.

LESSONS LEARNED FOR FUTURE DIFFUSION

What factors motivated these clinics to undertake a project requiring significant time and energy while promising no financial advantage? In part it was undoubtedly the belief that this is an important problem that needs better methods. In the first 30 clinics, there was the additional reinforcement that they were part of a unique nationwide project associated with the National Institutes of Health and with a sense of group camaraderie. This latter was strengthened by fairly intense support from the full DHS team.

That these factors were important is attested by the seemingly greater difficulty that we have had with the subsequent clinics, despite their volunteer participation. Most are still operating, but several have quit and others are struggling.

All clinics have also benefited from a Hawthorne effect—attention from people whom they respected and from a major insurer of their patients (if you include the 25 percent of their business associated with the parent Blue Cross and Blue Shield plan). In addition, Blue Plus has required for years that all of its primary clinics operate quality assurance systems that institute two improvement projects per year. However, only two or three clinics have listed their DHS system in their required annual reports of quality projects, so they may not have made that connection.

Thus, it appears (as in A.J. Dietrich's New England area cancer prevention project) that an outside organization that understands and is flexible about the problems of primary care can stimulate and maintain organizational systems change in typical clinics (Dietrich et al., 1990). However, in both the DHS and the Dietrich examples, this has been accomplished by people who may not be widely replicable. The real problem is how to stimulate internal ownership and leadership to develop and maintain the new systems.

Although we started with the belief that it was important to tailor the DHS system to meet the needs of each clinic and to audit to evaluate the need for system modifications, we have come to realize that these concepts are absolutely essential. Without tailoring, the system remains something that the clinic has borrowed from elsewhere, easy to return or discard when any problems arise. Without adjustments based on actual performance, changes will not be likely to improve function. The problem is similar for both—unless one does the modification and audits oneself, one doesn't care enough about how the system functions, and the result is decay. We now believe that, unless there is within-clinic management of the change, the system is not likely to be successful in the long run.

Thus, outsiders may have an important role to play in encouraging development of systems like DHS for smoking cessation and in teaching some of the techniques necessary to develop and maintain any system, but that role is more limited than what we had originally foreseen. However, both Tornatsky's work with diffusion of a new approach to mental health care (Tornatsky et al., 1980) and Rogers' writings about diffusion of innovations (Rogers, 1983)

should have prepared us for that. These problems may seem to leave in limbo the question of how to encourage widespread replication of smoking cessation systems in clinics.

Fortunately, a new paradigm is developing in American medical care that promises to produce major improvements in the way that health care is delivered. What makes this paradigm particularly promising for smoking cessation is that it serves as a map for internal leadership to follow to identify processes requiring change and to make continuous, self-sustaining improvements.

This map includes exactly what we have learned is necessary. The map can be specific about the process of making change without specifying the details of the change. Moreover, because this approach requires that those within a clinic or health care organization conduct this assessment and improvement, it has the potential to become effective, maintained, and widely replicated. We believe that this can be the vehicle with which to accomplish smoking cessation aims.

THE QUALITY IMPROVEMENT PARADIGM   To understand this new paradigm, it is necessary to understand its origins as well as its methods. This paradigm is commonly called continuous quality improvement (CQI) or total quality management. Although at least 40 years old in most other types of business, it is only a few years old in health care. In fact, although it began with American quality experts (W. Edwards Deming and Joseph Juran, in particular), their concepts found greatest initial acceptance in Japan and are credited with being the main stimulus to the enormous gains in quality and productivity exemplified by Japanese business (Deming, 1986; Juran, 1988; Walton, 1986). In the past 5 to 10 years, these same ideas have gained acceptance in American business (both manufacturing and service) and appear to be capable of the same benefits in health care.

Health care concerns in the United States have forced an increasing number of health care leaders to look to this CQI approach as a partial answer to their problems, a redirection that was sparked most prominently by the appearance of a journal article in 1989 (Berwick, 1989). Berwick's subsequent book, *Curing Health Care*, is the best single exposition of this approach in health care to date (Berwick et al., 1990).

Although CQI has grown out of quality assurance, it differs from it in many very important ways. Quality assurance in medicine has developed a very bad reputation among physicians. It has come to represent a search for "outliers" (bad apples) who have poor practices resulting in low quality. Quality assurance theory holds that, if these bad apples can be identified and removed or corrected, we shall see quality improve; thus, it emphasizes regulatory approaches and inspection methods.

Other businesses have learned that inspection has only a minimal effect on quality while adding substantially to costs, creating fear and other barriers

to cooperation, and reducing productivity. The new quality approach instead assumes that the great majority of workers in any industry wish to do a good job, but this desire is regularly interfered with by the systems within which they work as well as by a serious lack of training and management leadership. Thus, the focus in CQI is on continuous improvement in the processes of work by involving the workers who best know those processes in cross-functional teams that study and improve the processes. The emphasis is on quantitative methods and pragmatism, which are concepts that should be very comfortable to practicing physicians. However, it also requires close multidisciplinary teamwork; emphasis on prevention; and especially, attention to the wishes of the customer, which are approaches that have not been nearly as traditional for physicians.

APPLYING QUALITY IMPROVEMENT In its simplest form, CQI can be best viewed as a cyclical process in which systematic improvements are introduced into a process after studying the nature and frequency of problems. The effects of these improvements are closely monitored in quantitative ways, so it can be determined whether the improvements are helpful. The improvements are modified as necessary and proliferated when proven but continue to be subject to the same monitoring for future assessment and change until an adequate level of performance has been reached. This is known as the Shewhart or plan-do-check-act (PDCA) cycle (Walton, 1986).

In health care, the Hospital Corporation of America (HCA) has been particularly active and a leader in this new CQI movement. It has added to the Shewhart cycle in a way that makes it easier to understand by calling it the FOCUS-PDCA cycle (McEachern and Neuhauser, 1990). The acronym comes from the following steps:

- F, find a process to improve;

- O, organize a team of people who know the process well;

- C, clarify knowledge of the process as it exists;

- U, understand the causes of variation and problems in the process;

- S, select a systematic improvement based on that understanding;

- P, plan the introduction of that improvement and how to monitor its impact;

- D, do both the improvement (on a small scale if possible) and the monitoring;

- C, check on whether improvement has actually occurred; and

- A, act to modify, expand, and maintain any real improvements.

The cycle is repeated as needed.

It is easy to see how such an approach might be used in improving a manufacturing process. However, if one understands that all work (mental as well as physical) involves processes in which an input is converted to an output in a series of linked steps, then it is easier to see how this might become applicable in a service business. If it can work in the airline or hotel business, it might be useful to at least some aspects of medical care. In fact, some physicians are starting to feel that it might also apply to the clinical aspects of medical diagnosis and treatment as well.

All other types of business where this has been tried have found that applying this approach to existing processes produces large savings from reduction in waste and rework (25 to 35 percent) as well as great improvements in customer and employee satisfaction (Berwick et al., 1990). Early applications in health care through the National Demonstration Project, HCA, and others suggest the same will be true (Berwick et al., 1990).

Berwick has conceptualized the CQI steps in a way that is more generic and familiar to health professionals by suggesting four phases for them (Berwick et al., 1990): (1) project definition and organization (F and O); (2) diagnostic journey (C and U); (3) remedial journey (S, P, and D); and (4) holding the gains (C and A).

Thinking of it in this way makes it clear that this CQI process is very analogous to the way that physicians approach the medical problems of their patients. After organizing their practice to support their work, the physicians gather data in relation to hypothesized causes of a problem, make a first guess at a root cause, try an intervention (treatment), monitor and measure progress, and then modify both the tentative diagnosis and the treatment if they don't hold up under the scrutiny of followup observation.

CQI FOR SMOKING CESSATION Let us see how an individual primary care medical practice of any size can apply this CQI to improve its smoking cessation effectiveness with its patients.

F—Find a Process To Improve Although studies show that most physicians feel ineffective in getting their patients to quit smoking, that does not mean that they understand the problems interfering with their effectiveness (e.g., lack of awareness of which patients smoke and lack of reliable quit-reinforcement systems) or that they agree with approaches proven to be more effective. Therefore, it may be necessary to first verify quantitatively that the desirable activities are not occurring.

This can be demonstrated in a way that will also be useful for monitoring the effects of any change by conducting a simple chart review and a survey of patients as they leave the office (see Figures 1 and 2). Having a questionnaire filled out by each adult patient until 30 to 40 tobacco users have responded should indicate to what extent those users report that they experienced the five criteria listed in the first paragraph of this article:

Figure 1
Baseline audit of tobacco cessation activities at a clinic

A. Chart Review

1. Obtain about 50 random charts of adults (age 18 and over) from patients with a recent office visit, just before they are to be refiled.

2. Total charts reviewed: _____

3. Total charts labeled for tobacco use (problem list or any identification on chart cover):

   Labeled as user: _____

   Labeled as non-user: _____

4. Review of the *last* progress note:

   a. Total with any indication of tobacco discussion: _____

   b. Total identified as current tobacco user: _____

   c. Total with advice to quit: _____

B. Patient Survey

Without letting physicians and nurses know the days to be studied, pick five days out during one month, including one of each day of the week. On these days, the receptionist gives each departing adult patient a survey form and asks them to complete it and deposit it in a box near the door. It is important to know how many surveys were given out and how many were collected on each day.

Source: Solberg and Kottke, 1989; used with permission of the authors.

- Supportive assistance to quit is given at nearly every encounter over the longest possible time by both physicians and staff;

- Attention is directed primarily to those interested in quitting;

- Assistance is clear, supportive, and nonconfrontational and concentrates on specific plans, followup, and counseling;

- Multiple forms of assistance are available, both behavioral and pharmacological; and

- Quit dates or spontaneous quits are positively reinforced soon after they occur.

If a more elaborate study is desired, the respondents can be followed up by phone or mail survey 6 to 12 months later to determine their actual quit rates. It will be the unusual clinic that finds much compliance with the criteria, even if the physicians and staff are aware of the period during which the study is being conducted.

Figure 2
Tobacco survey

1. Were you asked about tobacco use during your visit today?

    _____ Yes   _____ No

    If yes, who asked? _____ Nurse   _____ Doctor   _____ Other

2. Do you use tobacco every day?

    _____ Yes   _____ No (Go to #4)

3. Were you advised to quit during today's visit?

    _____ Yes   _____ No (Go to #4)

    If yes:

        a. Was the advice friendly and supportive?

            _____ Yes   _____ No

        b. Did you agree to quit?

            _____ Yes   _____ No (Go to #4)

          If yes:

                Were you offered help to quit?

                _____ Yes   _____ No

                Were you offered any followup? (such as an appointment, phone call, etc.)

                _____ Yes   _____ No

4. Age: _____

5. Sex: _____ Female   _____ Male

    Thank you very much for helping us!

*Source: Solberg and Kottke, 1989; used with permission of the authors.*

If a practice (clinic) already has accepted the need to change to a more systematic approach, then it can postpone these studies to the U phase (below). However, our experience suggests that unless some simple quantitative review measures are used, it is very difficult to understand the problems and to make appropriate system modifications.

O—Organize A Team To Improve the Process Logical members of the team in most practices would be a physician, nurse, receptionist, medical records person, and office manager. The goal is to include a representative from each functional area that is involved with the process. Knowledge of the actual work of these areas is critical to useful contributions to the team effort. Furthermore, it is clear that a team consisting only of physicians is not likely to produce either a feasible solution or one that will be maintained.

C—Clarify The Existing Process The first step in clarification is to construct a flowchart or algorithm of the *existing* process (not what is supposed to occur). The flowchart in Figure 3 can be used as a starting point for whether patients receive smoking cessation advice in their clinic's existing, unsystematic approach to this problem. As they clarify the existing process, the team will be able to appreciate the degree to which the existing system depends on chance, whim, and memory and results in variation that virtually guarantees ineffectiveness.

U—Understand The Problems And Causes of Variation Reviewing the flowchart (Figure 3) may allow team members to see why smoking cessation advice is ineffective. However, it will facilitate monitoring the effect of any future changes if this judgment is based on specific data as well. If they were not used during the F phase (above), the patient survey (Figure 2) and additional measurements of the frequency of nurse and physician smoking comments in the chart (Figure 1) can easily document the variability (both within and between individuals) that is occurring in these activities.

Here it is important for the team members to understand the role that reducing variability holds for improving results and efficiency. Although some may be reluctant to standardize the care process, it will be difficult for them not to see that systematic approaches involving many of the clinic staff will be necessary. Variation beyond that which is necessary to accommodate important differences between patients or providers should be seen as affecting both efficiency (i.e., costs) and effectiveness.

S—Select an Approach for Improvement The DHS model was designed specifically to address these criteria and to solve the problems of variable ineffective advice. However, there are other approaches or variations in these DHS approaches to accomplish the same goals. For example, a smoking record card can be kept with the patient's chart (instead of separately) or smoking patients can be referred out of the practice for any necessary assistance with quitting. It is important that the practice develops a sense of ownership of the approach chosen and that it adopts some way to measure the degree to which the approach is working. Figures 4 and 5 can be used to chart a clinic's own system.

P—Plan To Initiate and Monitor the Improvement Once the team members have decided on an approach, they must develop a plan for introducing that approach in the practice. They may wish to start with only part of the approach or to apply the full approach in only one site or section of the practice to more easily control and assess it. However, it will be necessary to obtain support for the

Figure 3
Flowchart for actual office smoking cessation
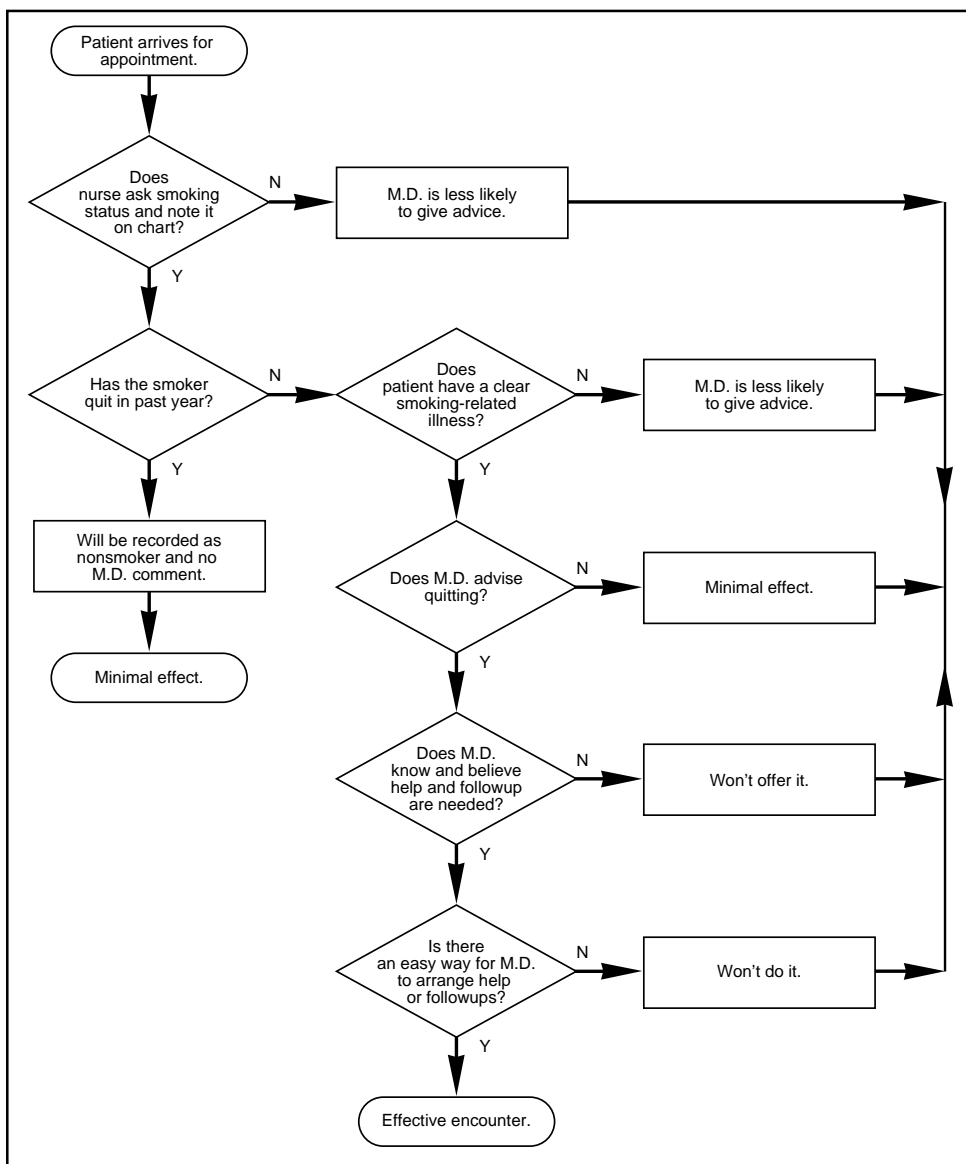
change, both from management and from each person who will play a role
in it. It also will be necessary to identify a coordinator; to conduct orientation
and training; and to make the necessary scheduling, resources, and time
available to support it.

If the approach chosen involves a standard record form and/or labeling
system like that in the DHS system, it will be relatively easy and quick to

Figure 4
Office tobacco-use cessation process flowchart
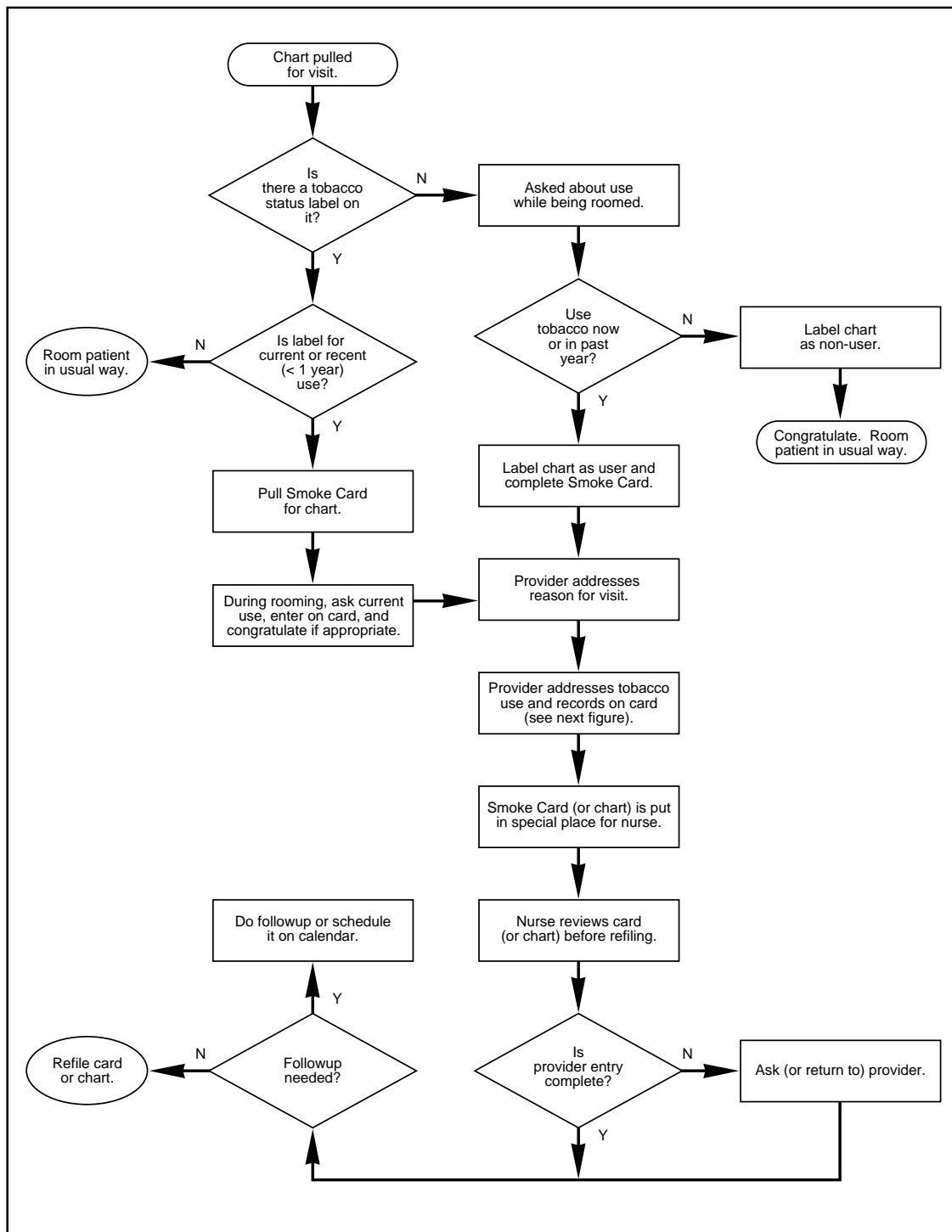
Figure 5
Provider-patient tobacco interaction flowchart
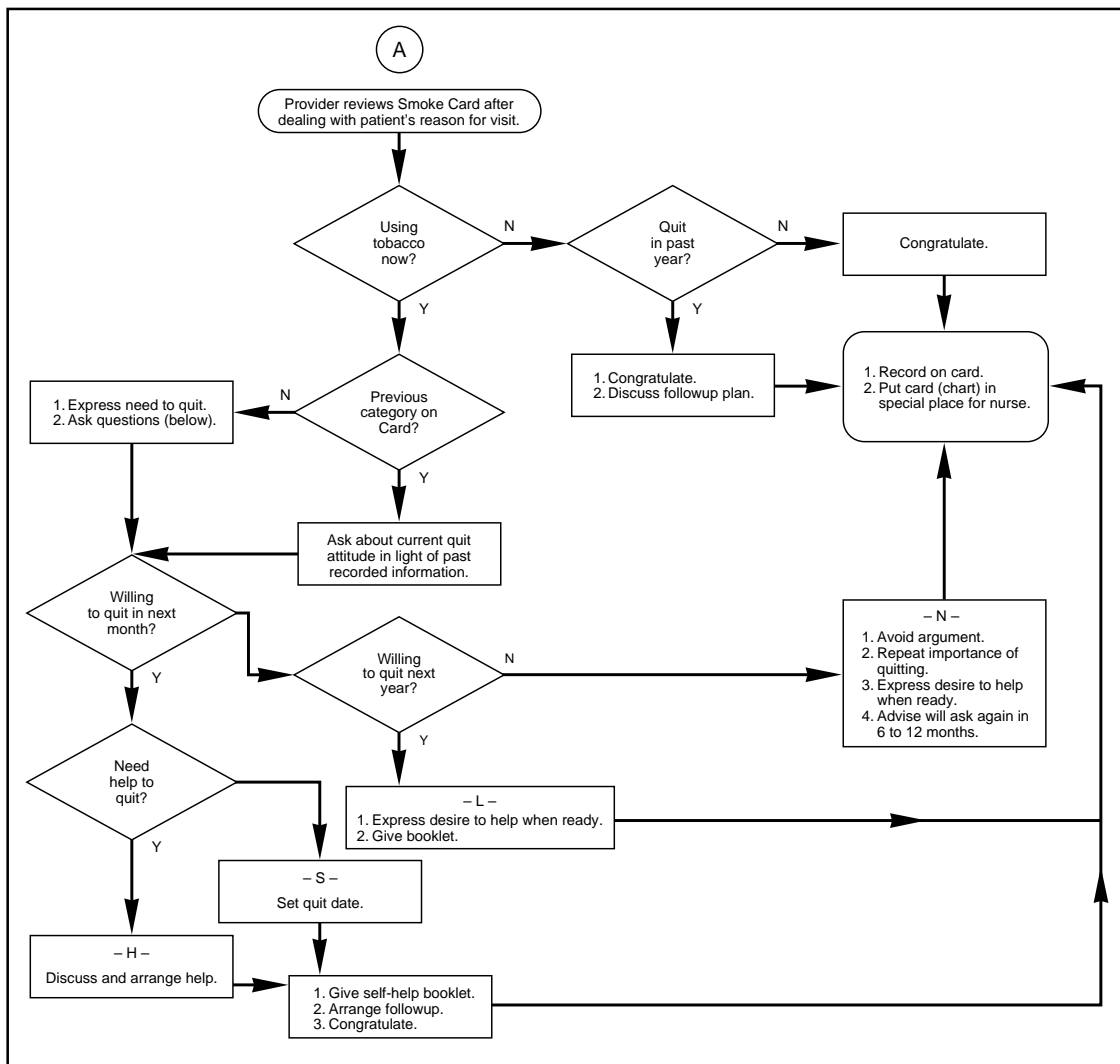
set up a periodic review that will determine whether these aspects of the improvement process are being used as desired. It is also desirable to determine the reactions of physicians, staff, and patients to the change.

D—Do the
Improvement
And Monitoring

Establish a "start day" (just like a quit day for a smoker) and initiate the carefully planned changes. Also, plan to repeat the audits at regular intervals, for example, at 1, 3, 6, and 12 months.

C—Check on   After the change has been in effect long enough to gather data
How the Change about how the new process is working and how it is being perceived,
Is Working   it is time to evaluate and plan any necessary modifications. If no
data have been collected, it will be necessary to base this entirely on anecdotes
and subjective reactions. However, the CQI approach assumes quantitative
assessments are more likely to be useful.

A—Act To   If the assessment suggests that the process is functioning well, it may
Expand or   be time to expand to other areas of the practice. However, if substantial
Improve   changes are necessary, it may be better to defer that until one or more
The Change   additional rounds of the PDCA cycle have occurred.

When periodic audits suggest that the new system is working well (usually
at 6 to 12 months), it also may be time to assess the extent to which it is
producing the desired outcome of tobacco cessation. This can be done by
reviewing the smoking records or by a simple followup of a sample of tobacco
users (as was described in the F phase). If the team is satisfied with the moni-
toring data, it is then ready to set up permanent responsibilities for mainte-
nance. The team then may be dissolved or may continue to build additional
preventive services into the same system. We have expanded the DHS system
to one for all cardiovascular risks, and it can clearly be adapted to include other
preventive services. However, by this time the practice, we hope, will have
found that this approach to quality improvement works so well that it will
establish other multidisciplinary teams to improve other processes of care
(such as appointments, waiting time, test ordering, results reporting, or care
for such clinical problems as urinary infections or back pain).

CONCLUSION   Clearly, the above description is too brief to provide all of the informa-
tion needed to make the best use of this new paradigm of CQI in medical
practice. Each practice will have to learn much about efficient team function,
statistical quality control measures, and how to understand better the needs
and expectations of its patients and employees. Even before reaching that
stage, however, it is likely that everyone associated with such a continuously
improving practice will find it to be much more satisfying. Combining that
satisfaction with the improved efficiency that is possible should result
in a practice that is also thriving financially.

An important final question: What is going to make a clinical practice
group want to go through changes like CQI, particularly for preventive services
that may not be very profitable? The promise of thriving financially is not
likely to be provable for at least a few more years. In the meantime, additional
incentives will arise from some combination of the following:

- Idealism and the sense that preventive services are a medical
  responsibility of primary care practice;

- Patient expectations and competition for patients;

- Medical-legal risk management; for example, failure to diagnose breast cancer early enough is already a major legal problem and other prevention services are likely to follow soon; and

- Requirements from payers—government, employers, and insurance companies.

Each of these forces is likely to be stimulated by comparative data about the frequency with which preventive services are delivered in clinics. These data will surely soon be demanded, and they are easily obtainable from claims systems, in many cases. Although smoking cessation advice and assistance are more difficult to review than other preventive services, they are clearly important. Therefore, smoking intervention seems likely to be reviewed externally, perhaps through questions of patients on the satisfaction surveys that are being used increasingly to compare health plans and clinics.

At Blue Plus, we have already demonstrated to our satisfaction that it is possible to stimulate the development of traditional quality assurance systems in primary care clinics through a combination of requirements and assistance. Most of the 120 clinic groups with which we contract now have satisfactory or excellent quality assurance programs where none existed 5 years ago.

Moreover, many of those clinics are going well beyond our requirements in creative ways. An increasing number of clinics also are expressing interest in the concepts and techniques of quality improvement, and we are helping them to make that transition through conferences and on-site visits. We are convinced that many are now ready to use the above-described CQI approach to establishing systems for smoking cessation and other preventive services. Those that don't accept this challenge and opportunity will find themselves without long-term partnerships with us, and we shall know that through our use of audits from claims systems and satisfaction surveys.

Like quality improvement in other businesses, it is clear that the road to improved quality comes from two directions—from improving internal processes and from establishing close, long-term partnerships with those suppliers who are equally dedicated to that task. Working together, we must increasingly provide value (i.e., cost-effective health improvement) to our customers, and smoking cessation may be one of the most important tests of that commitment.

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Computerized Reminder System To Aid Physicians in Assessment and Counseling of Patients Who Smoke[2]

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INTRODUCTION   To overcome the barriers to physicians' performing smoking cessation counseling, reminder interventions of several types have been developed and tested (McPhee and Detmer, in press). Approaches during medical encounters, termed "inreach" interventions, have included medical record stickers, checklists and flowsheets, and computerized reminders.

In the past, reminder interventions have largely targeted physicians (often physicians in training) in university-based practices. The current project was directed to community-based physicians in solo or small group practices. The study was a randomized, controlled trial to test the efficacy of a computerized cancer prevention reminder system (CPRS) in promoting physicians' performance of several cancer prevention activities, including smoking assessment and counseling about smoking cessation (Fordham et al., 1990). The CPRS intervention was supplemented by professional and patient educational materials.

SUBJECTS   The subjects of the study were primary care physicians who were members of the clinical faculty of the Department of Medicine and Department of Family and Community Medicine at the University of California, San Francisco. Such clinical faculty members have nonsalaried clinical appointments in recognition of their service as volunteer preceptors for medical students. Most have their practices in the San Francisco Bay area. Many of the physicians had expressed an interest in collaborative research (Osborn et al., 1991).

Physician   To recruit physicians for the study, we mailed each of the 307-member
Recruitment   clinical faculty a letter describing the randomized, controlled trial and a self-addressed reply postcard, followed by a second mailing and telephone calls as needed.

Eligibility criteria for physician recruitment were as follows: (1) Each physician was in a full-time, private (fee-for-service) office practice of family medicine or general internal medicine; (2) each physician was in a solo or

small group practice (sharing an office with no more than three other physicians); (3) the physician's office was located within reasonable distance (defined as 75 miles) of the university and research staff; (4) only one physician in a given office practice was eligible; and (5) each physician was willing to have a computerized CPRS installed and implemented in the office. Eligible physicians who agreed to participate were randomized into either the intervention or the control group.

Of the 307 physicians, 140 (46 percent) did not respond to the recruitment letters and telephone calls, 53 (17 percent) refused study participation, and 114 (37 percent) indicated their interest in the study. Among the last group, 39 did not meet the study enrollment criteria. Of the 75 eligible and interested physicians, 35 subsequently declined to participate, raising the total number of refusals to 88 (29 percent). The remaining 40 physicians were enrolled in the study.

The investigators met with potential subjects in their practice offices. Those meetings constituted the first of two essential steps toward gaining consent for study participation. The investigators described the study; discussed the benefits of the study to participants (e.g., the experimental group would receive computers, software, and educational materials; controls would receive software and educational materials at the end of the study); explained the contributions requested of participants (e.g., access to medical records, office staff time, questionnaire completion); investigated space, staff, and patient volume and demographics; and answered physicians' questions. All physicians were cooperative during the meetings; they approved of the study aims and indicated that they would like to take part. However, most were concerned that the CPRS requirements would overburden the office staff, and some were concerned about the space required for computer hardware. For many, those concerns led directly to refusal, whereas others waited to assess the reactions of their office staffs before making a decision.

Peer influence appeared to be an important factor in recruitment. During the meetings between the project physicians and the community physicians, the tone of the discussions was collegial, and discussions of medical issues usually related to prevention rather than research. In the few instances in which nonphysician investigators took part in recruitment, more time was devoted to the logistics of collecting the medical record data and implementing the intervention. In the latter discussions, the community physicians had greater opportunity to focus on the problems that might arise during the intervention; thus, the recruitment efforts by nonphysicians were less persuasive.

Medical Office Staff Recruitment
The second essential step toward gaining physicians' consent was acceptance of the intervention by the medical office staffs. Research staff members met with office staff members to describe the system and discuss their participation. In most cases, however, by the time these meetings took place, the physicians already had discussed the matter with

their staff and decided whether to participate. Therefore, nearly all meetings with office staffs were held in practices of physicians who had decided to participate. In only one case was it clear that the physician had left the decision entirely in the hands of the office staff. In two cases, physicians made independent decisions to participate, choosing to operate the CPRS themselves rather than relying on their staffs.

Physician Characteristics   We enrolled 40 physicians in the study: 20 were assigned randomly to the cancer prevention reminders intervention and 20 to the control group. Three-quarters of the study physicians were male. The mean age of the physicians was 45 years, and the mean year of medical school graduation was 1971. Of the 40 physicians, 30 were family practitioners and 10 were general internists. Slightly more than half of the physicians (55 percent) were in solo practice. In general, physicians recruited for the study had a strong orientation toward preventive care (Osborn et al., 1991). For example, 80 percent believed it was their responsibility to urge patients to be screened for cancer, and 78 percent said they always advised their smoking patients to quit.

DESCRIPTION OF THE INTERVENTION   The CPRS is a software program developed by the investigators for MS-DOS-based microcomputers. The functions of the program are easily accessible through a branching menu design, and a user's manual takes the inexperienced user through the various features step by step. The program provides the physician with an up-to-date report of each patient's screening, assessment, and counseling status as a reminder to perform the maneuvers; also, the program provides a simplified version of the report for the physician to give to the patient. Additional features include the ability to generate summary reports of the percentage of patients in the data base who are overdue for a designated cancer prevention activity and listings of patients overdue for a designated activity. The patient listings with addresses may be printed on mailing labels and affixed to preprinted reminder postcards.

The printed reminder displays the list of appropriate assessment, counseling, and screening maneuvers (based on the patient's sex, age, and smoking status); the recommended assessment, counseling, or testing intervals; the last performance date; the due date for each next maneuver; and the patient's current "due" status (see Figure 6). The patient's smoking status is identified on each reminder report. If a patient's smoking status has not been assessed, the default identification is "smoker." The system reminds physicians to counsel smokers, to set a quit date, and to schedule a followup visit to discuss their progress. The physician is expected to indicate on the form whether or not each maneuver was performed or ordered, not applicable, or refused during the current visit. The annotated form then is used to update the computerized data base. The patient's copy of the reminder form includes space for physicians to write out specific recommendations as a prescription, such as "set a smoking quit date" (see Figure 7). This form also is intended to remind patients to schedule future appointments.

Figure 6
Physician cancer prevention reminder

Name: Andrews, Ms. Anne   Sex: F
Date of Birth: 03/03/33   Age: 58
Today's date: Wednesday, March 27, 1991   **SMOKER**

These reminders are based on the recommendations of the American Cancer Society for asymp-
tomatic adults. The recommendations should be individualized depending on history
and risk factors.

Procedure	Date Last Done	Date Due	Overdue?	Done This Visit	Done by Others & Date
Pap smear	11/12/90	11/12/91	NO	Y N NA R	_/ _/ _/ _/
Mammography	05/05/89	05/05/90	YES-G	Y N NA R	_/ _/ _/ _/
Smoking counseling	11/12/90	12/12/90	YES-H	Y N NA R	_/ _/ _/ _/
Set smoking quit date		03/27/91	YES-I	Y N NA R	_/ _/ _/ _/
Schedule smoking followup		03/27/91	YES-J	Y N NA R	_/ _/ _/ _/

NA, Not Applicable; R, Refused.

Key to Overdue Notes:

   G. For women over 50, every year.

   H. All smokers.

   I.   All smokers.

   J.   All smokers.

J.Q. Public, M.D.
450 Sutter St., Suite 250
San Francisco, CA 94138-1111
(415) 555-9000

Figure 7
Patient cancer prevention reminder

Name: Ms. Anne Andrews   **SMOKER**
Today's date: Wednesday, March 27, 1991

According to the American Cancer Society, the following cancer prevention activities should be considered as part of your preventive care. If the tests or counseling have been done by another physician or clinic, please let your doctor know.

Procedure	Date Last Done	Date Due	Overdue?	If Done Today, Next Due
Pap smear	11/12/90	11/12/91	NO	03/27/92
Mammography	05/05/89	05/05/90	YES	03/27/92
Smoking counseling	11/12/90	12/12/90	YES	04/27/91
Set smoking quit date	03/27/91		YES	04/27/91
Schedule smoking followup	03/27/91		YES	04/27/91

—————————————— Goals and Recommendations ——————————————

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450 Sutter St., Suite 250
San Francisco, CA 94138-1111
(415) 555-9000

The authors currently are developing further refinements and plans for nonprofit distribution of the CPRS. In the meantime, readers who wish a copy of the software should contact the authors.

IMPLEMENTATION OF THE CPRS

System Initiation

We derived the initial data for the CPRS from preintervention review of a sample of medical records and from the medical records of patients aged 40 and older who were scheduled for visits during the first 2 or 3 weeks of the intervention period. At the beginning of the intervention period, the research staff installed computers and software, entered patient data, and oriented the intervention group physicians and their office staffs to the CPRS.

Office Staff Training

The appropriate staff members in each office were trained to use the CPRS. Usually, only one staff person was designated by the physician, but occasionally two were chosen for training. In each of three practices, the trainee was a high school student, hired by the physician to implement the CPRS after school hours. In a few instances, the physician also attended the training sessions.

Training was conducted in two 1-hour sessions. The first session covered basic features that would be used regularly: adding new patient names, editing names, adding data, printing reminders, and backing up data. The second session addressed special features that would be used occasionally, such as generating summary reports, deleting data and names, preparing mailing labels, indexing, and establishing individual patient exceptions. Thereafter, telephone and on-site consulting was provided as needed. Project staff members visited experimental group offices monthly to provide supplies, inquire about problems, and monitor implementation of the CPRS. Office staff members with no prior computer experience had some trouble with basic word processing skills, following the branching menus, and concepts such as saving new or edited data from the screen to the data base. However, most complaints about the CPRS by the office staffs were related to shortages of time and personnel.

We did not provide the office staff with directions or assistance in integrating the system into the general office procedures; each office had unique features, and therefore the staff for each practice determined its own method and procedures for handling the system. However, we did observe that offices with noticeably good office management and clear priorities handled these processes most easily and had fewer complaints about the amount of time the CPRS consumed.

Day-to-Day Operation

During the 12-month intervention period, the office staffs printed cancer prevention reminders prior to each appointment (for patients aged 40 or older). Usually, this work was done during regular office hours (eight cases), early in the morning before the first appointment (six cases), after hours (five cases), or during the lunch hour (one case). Among those who did the work during office hours, four had other duties to attend to at the same time.

After printing the physician and patient reminders, the staff person attached them to the medical records. The physician was encouraged to give the patient reminders to the patients during each visit. Typically, reminders were printed about four times per week, and the data base was updated about twice per week according to physicians' notations on the reminders.

Supplemental Intervention   Physicians in the experimental group were also given a rack of educational materials to assist them in counseling their patients. The patient education materials included the following:

- *Quit for Good* (National Cancer Institute);

- *Weight Control Guidance in Smoking Cessation* (American Heart Association);

- *Quit for Life* (University of California, San Francisco);

- *Getting Ready To Get Ready To Quit Smoking* (Kaiser Permanente);

- *Guia para Dejar de Fumar* (University of California, San Francisco; National Cancer Institute); and

- *Would You Give a Cigarette to Your Unborn Child?* (National Cancer Institute poster).

Two professional education publications were provided:

- *A Clinician's Guide to Helping Patients Change Behavior* (Martin and Coates, 1987); and

- *Smoking Cessation Programs in San Francisco County, Marin County, East Bay Counties, Sonoma County and Peninsula* (University of California, San Francisco).

Physicians were free to choose where the educational material was placed—in their offices, in the waiting room, or outside exam rooms. A few physicians reordered materials during the intervention period.

ANALYTICAL METHODS   To assess the impact of the intervention, we measured each physician's assessment and counseling performance during 12-month preintervention and intervention periods. To do so, we drew independent, random samples of about 60 patients from each physician's practice register at the end of the preintervention and intervention periods and audited the medical records of those patients. We calculated the percentage of patients each physician assessed for smoking status, the percentage of current smokers among patients who had been assessed, and the percentage of assessed smokers who had been counseled to quit smoking. We calculated performance rates for both preintervention and intervention periods and used *t*-tests and ordinary least squares multiple regression to test the significance of differences in mean rates between physicians in the intervention and control groups for each period.

At the end of the intervention period, we conducted brief interviews with the physicians and their office staffs to assess the acceptability of the system and to document any technical or logistical problems they experienced.

RESULTS Preintervention performance rates did not differ significantly between intervention and control physicians for either smoking assessment or smoking cessation counseling. The mean percentage of patients whose smoking status physicians had assessed during the preintervention period was 30.1 percent, and the mean percentage of smokers whom physicians had counseled was 34.8 percent. The mean smoking rate among patients in the 40 practices (for patients whose smoking status appeared in the medical records) was 36 percent.

Table 1 shows the differences in mean postintervention performance scores between control and intervention group physicians. Performance rates of the intervention group were significantly higher than the control group for both smoking assessment and smoking counseling.

Results of multiple regression analyses provide stronger evidence of the intervention's impact on smoking assessment and smoking counseling performance (Table 2). When controlled for preintervention rates, estimated smoking assessment rates of intervention group physicians were 10.2 points higher than controls (p=0.02), and smoking counseling rates were 17.3 points higher than controls (p=0.03). A more detailed description of the analytical methods and results is provided elsewhere (McPhee et al., 1991).

Physicians' verbal reports during the exit interviews corroborated these findings, dispelling any concern that observed differences between the experimental and the control group simply reflected better recordkeeping by physicians in the intervention group. Approximately two-thirds (13 of 20)

Table 1
Postintervention performance scores, by intervention group

	Mean (SD) Performance Score[a]		
	Control n=19	Cancer Prevention Reminders n=20	*t*-test,[b] p value
Smoking Assessment	32.4 (13.9)	45.0 (16.6)	0.014
Smoking Counseling	41.8 (22.2)	58.8 (23.0)	0.027

[a] *Percentage annual rates.*
[b] t-*test for differences between group means.*

Table 2
**Regression results: effects of interventions on performance scores
controlled by preintervention scores**

	Constant[a]	Cancer Prevention Reminders
Smoking Assessment		
b[b]	15.0	10.2
p[c]	0.008	0.021
Smoking Counseling		
b[b]	39.7	17.3
p	0.000	0.027

[a] *Intercept.*
[b] *Unstandardized regression coefficient.*
[c] *p value.*

of the physicians in the intervention group said that they had done more counseling about smoking as a result of the reminders: 4 of 20 indicated they had done "slightly more" counseling, 6 had done "quite a bit more," and 3 had done "much more" counseling.

DISCUSSION   The success of the CPRS is consistent with the results of other research studies demonstrating that physician reminders can be effective in promoting performance of smoking cessation counseling (Cohen et al., 1987 and 1989; Cummings et al., 1989a and 1989b).

Strengths   We designed the CPRS intervention specifically to address several
Of the   barriers to performance of cancer screening activities, including
Intervention   physician forgetfulness and time constraints, identified in our previous research (McPhee and Bird, 1990; McPhee et al., 1986). The positive effects of the intervention in the present study strongly suggest that the same problems are implicated in physicians' limited performance of smoking assessment and counseling.

Compared with hard-copy flowsheets, the CPRS is more costly to initiate, because a 20 Mb personal computer and printer cost between $1,500 and $2,500; however, the CPRS has several distinct advantages when compared with other types of interventions. First, it is readily exportable to a variety of practice settings. Many physicians already have microcomputers in their offices for billing and other purposes (Schmittling, 1989); installing the CPRS software is done quite easily. It also can be built readily into in-place computerized ambulatory medical records systems, such as CO-STAR. Second, unlike other reminder systems (such as "smoker" stickers attached to medical records), the CPRS can be used to prompt the performance of a variety of periodic preventive care activities, including other assessment and counseling activities,

screening tests, and immunizations (Fordham et al., 1990). Third, we have found that the CPRS, compared with other strategies, such as an audit-with-feedback intervention, is cost-effective (Bird et al., 1990). Furthermore, because the CPRS is able to target a variety of periodic health maintenance procedures, it will remain more cost-effective than interventions that target only one or two activities. Fourth, the CPRS software enables physicians to monitor their own performance of various activities. Finally, the due date intervals of the CPRS are easily adjusted to meet new recommendations (or the physician's preferred standards).

Acceptability Physicians (n=17) estimated that office staff spent a mean of 2.8 hours per week using the system. Although most physicians had been concerned about whether their office staff would have enough time to implement the system, at the end of the intervention period, only 3 of 20 physicians said the system had been "very burdensome" to their staff, 4 said it was "moderately burdensome," and 9 said it was either "only a little" or "not at all" burdensome. Office staff members (n=14) estimated that the mean time requirement to operate the system was 3.7 hours per week. When asked how difficult it was to find time to maintain the system, 3 of 14 office staff members said it was "not difficult," 7 said it was "somewhat difficult," and 4 said it was "very difficult." In spite of their perceptions of the difficulty involved, 9 of 14 said they thought the time devoted to using the system was "definitely worthwhile," 4 thought it was "probably worthwhile," and only 1 said it was "probably not worthwhile."

Weaknesses Special features of the CPRS were used by less than one-half of the
Of the physicians. For example, only 6 of 20 physicians used the CPRS
Intervention summary option to audit their own behavior; only 8 used the mailing label feature to mail appointment-reminder postcards to patients. At the end of the study, 3 of the 20 physicians commented that they "didn't know" about the features—2 in regard to the summary option and 1 in regard to the mailing labels. The office staffs, not the physicians, were the major users of the system and were more familiar with the range of options. However, our observations in the practices suggested that staff members used system features only at the request of the physicians. Thus, the degree to which the system was used depended to a great extent on the degree to which physicians pressed their staff to keep the system up to date. Physicians with the busiest practices seemed to have less time to devote to system maintenance and seemed to experience more difficulty in consistently implementing the system.

Eight of the twenty physicians "always" or "nearly always" offered patients the patient reminder; six did so "occasionally," and six "never" did so. Physician's comments regarding the patient reminder ranged from "patients who received it, liked it" to "patients might be confused [by it]" to "it's not helpful; it was mostly discarded." It is probable that some physicians were reluctant to share with their patients any data that reflected their own forgetfulness or deviation from compliance with established standards.

With respect to smoking reminders, a few of the physicians expressed annoyance that they received repeated reminders to counsel patients about smoking, set a quit date, and schedule followup appointments. This may have reflected doubts that their repeated counseling could be effective in helping patients to stop smoking or their annoyance with their patients' noncompliance. The presence of three reminder messages related to smoking cessation, rather than only one, also may have contributed to physicians' irritation.

Suggestions for Improvement   Although it is clear that the CPRS was successful in prompting physicians to counsel their patients about smoking cessation, anecdotal evidence indicates that more is needed to assure that physicians persist in those efforts. Our experience and findings suggest that bringing physicians and staffs into the early planning process and prefacing implementation of the CPRS with additional education-intervention components— one for physicians and one for their medical office staffs—would have enhanced the acceptability of the CPRS. In addition, it is clear that many physicians are not convinced of the importance of their role in patients' smoking cessation efforts. Such orientation, along with training in smoking counseling methods, would have facilitated physicians' acceptance of repeated reminders as a reflection of the difficulty many patients have in quitting smoking, rather than as comments on the physicians' ineffectiveness or the patients' noncompliance. Although physicians may disapprove of patients' smoking, their continued concern and repeated counseling are more likely to assist the smoker in quitting than are disapproval or annoyance. Indeed, such counseling may be more cost-effective than treating hypertension or hypercholesterolemia (Cummings et al., 1989c). The educational component for physicians also might include videotapes of physicians providing smoking cessation counseling to patients. For medical office staffs, additional education might include information about cancer risks and the importance of cancer prevention.

The planning component might bring physicians and office staff into the process of participation at an earlier stage. In turn, this might enhance participants' sense of investment in the study and proprietorship of the intervention. For example, we observed that, among the busiest medical office staffs, some were more interested in the intervention than others and that their higher level of interest and commitment appeared to motivate them to find time for the CPRS, regardless of their workload. Educational and planning components such as these undoubtedly would have strengthened the physician and staff commitment to implementing the system more fully and consistently.

In addition, it is worth considering whether the reminders to provide counseling would be more acceptable to physicians if there were only one reminder related to smoking behavior. Individual patient counseling packages containing quit-date prescription forms and followup appointment forms could then encourage the physician to take further steps whenever a counseling reminder appears.

The "audit-with-feedback" function of the summary report might have been more successful if we had asked physicians to make this report part of their office staffs' regular assignments. Included in the summary is a display of the percentage of smokers in the practice who have not been counseled by the physician. We would expect that routine, monthly inspection of the summary of their overall performance would have further stimulated physicians' performance of smoking assessment and counseling.

Study Limitations This study was conducted among family physicians and general internists in solo and small group practices. The voluntary nature of their participation may have biased the results. Also, the findings may not be generalizable to other specialties or settings. Still, these physicians are more typical of U.S. primary care physicians than are residents in teaching hospital settings.

The novelty of the computerized reminder system may have intensified its impact. Had the intervention period been longer, the substantial effects we observed may have declined over time (Green et al., 1986). Still, because of the continuity of automated updating, computerized reminder systems may have more durable effects than written flowsheets, audit-with-feedback interventions, or other interventions. As with any system, however, effectiveness depends on fairly consistent use. As would be expected, we found the level of use to vary among practices. At the end of the 12-month intervention period, 13 of 20 practices continued regular use of the system. The major reasons given by those who stopped using the CPRS were related to changes in the practice (they moved or took over another's patients), staff turnover, and shortage of staff. Two of the practices that discontinued use later indicated their interest in resuming use of the CPRS, and another had acquired an alternative system that combined computerized reminders with billing procedures.

CONCLUSIONS The authors conclude that computerized reminders can significantly increase physicians' performance of smoking assessment and counseling activities in the private office practice setting. The results of multiple regression analyses (controlled by preintervention rates) estimated the experimental group's rates of smoking assessment and smoking counseling to be significantly higher—both statistically and clinically—than those of the control group.

The effectiveness of the CPRS strategy suggests that physician forgetfulness is an important barrier to smoking assessment and counseling in clinical practice. Clearly, other barriers, such as physicians' perceptions of their effectiveness and their need for counseling skills, must be reduced to close the gap between recommended and actual performance levels.

Computerized reminders have been used and tested for a variety of preventive medicine activities, especially for secondary prevention such as cancer screening tests (McPhee and Detmer, in press). To our knowledge, this is the first report of success with a computerized reminder system in promoting

physicians' smoking cessation counseling. Also, in this trial, smoking assessment and smoking cessation counseling were placed in the context of other cancer prevention activities. The success of this approach may help to establish smoking cessation counseling as an appropriate activity for the primary care physician.

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Physicians' and Dentists' Roles in COMMIT—The Community Intervention Trial for Smoking Cessation

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INTRODUCTION   The National Cancer Institute's Division of Cancer Prevention and Control has initiated and supported more than 60 smoking cessation intervention trials in North America since 1980. A major goal of these trials is to test the efficacy of delivering antismoking interventions through diverse sectors or channels within a community, for example, worksites, health care providers, existing clinical programs, schools, and mass media.

In 1987, NCI embarked on its most extensive effort to help large numbers of smokers achieve smoking cessation. The Community Intervention Trial for Smoking Cessation task is to implement community-based interventions that have been demonstrated to help smokers, especially heavy smokers, achieve and maintain cessation. COMMIT involves 11 matched pairs of communities throughout North America. One community from each pair was randomly selected for a comprehensive tobacco-use intervention (COMMIT Research Group, 1991).

Building on the extensive experiences of past and ongoing smoking cessation studies supported by NCI, community-based heart disease prevention efforts, and other groups involved in smoking cessation, COMMIT has combined interventions into a comprehensive program designed to have an impact on the smoking patterns of an entire community. Through a community organization approach, citizens from the community with professional staff support assume the major role in planning, adapting, and implementing the interventions (Lichtenstein et al., 1990-91).

TRIAL GOALS   Although the overall goal of COMMIT is to reduce community-wide smoking in general and heavy smoking in particular, the primary hypothesis tested in COMMIT is that implementation of a defined intervention protocol will result in at least 10 percent higher quit rates among heavy smokers in the intervention communities than among those in the comparison communities. There are a number of intermediate trial goals that include

- Increasing the priority of smoking cessation as a public health issue;
- Increasing the community capacity to modify the smoking behavior of its residents;

• Enhancing existing political and economic factors that discourage smoking within the community; and

• Increasing societal norms and values that support nonsmoking.

TRIAL DESIGN AND ENDPOINTS After the initial selection of communities, three general periods of activity characterize the trial: planning and mobilization (phase I, January 1987 to December 1989), intervention (phase II, January 1990 to December 1992), and final assessment and analysis (phase III, January to December 1993) (COMMIT Research Group, 1991).

Evaluation Of the COMMIT Intervention Cross-sectional and cohort surveys will assess the smoking status of community members in both experimental and control communities. In addition, there are a wide variety of surveys and other data collection activities that will measure impact, process, and cost of the COMMIT interventions (Lichtenstein et al., 1990-91; Mattson et al., 1990-91).

Selection of Communities At the beginning of this project, NCI selected 11 matched pairs of communities for participation in COMMIT: 10 in the United States and 1 in Canada. A community was broadly defined and could include well-defined portions of major metropolitan areas or two small cities in a geographic region. Ideally, communities within pairs were to have some geographical separation to maintain independence of intervention activities and prevent contamination. Within a pair, communities were matched for general sociodemographic factors, including population size, demographic profile (e.g., proportion of females, age distribution, educational distribution), mobility and migration patterns, extent of urbanization, estimated smoking prevalence rates, and access to intervention channels (e.g., health care services, number of worksites, media resources, cessation services).

The populations in the communities vary from 52,493 to 166,824, with comparable means for pooled intervention and comparison communities. Overall, the intervention and comparison communities are well matched on general sociodemographic variables. Another characterization of the matching process involved cluster analysis and respective American and Canadian census data for eight demographic variables on which the pairs should demonstrate agreement: racial distribution, Hispanic ethnicity, gender by age, gender by marital status, general occupational category, educational attainment, family income, and years resident in the current household. This analysis verified the comparability of the households.

A baseline survey provided information on smoking prevalence and recent quit rates for the community pairs, and we found that the community pairs were also well matched on smoking prevalence and recent cessation behavior (COMMIT Research Group, 1991).

TRIAL ORGANIZATION AND INTERVENTION The communities deliver the COMMIT intervention through an organizational approach in which the community volunteers and staff are heavily involved in the entire project and have considerable input in decisionmaking (Thompson et al., 1990-91). The research institutes and the communities work in partnership to maintain trial integrity. It is necessary to find a balance between the research requirements for standardization of the intervention and community needs for participation and control. COMMIT provides a standard protocol to the communities that allows enough flexibility to accommodate local variations. There are 57 activities described in the protocol, and these are divided into four categories: worksites and other organizations, cessation resources and services, public education, and health care providers. We focus here on health care providers. For a complete description of all the activities, see Ockene et al. (1990-91); Pomrehn et al. (1990-91); Sorensen et al. (1990-91); and Wallack and Sciandra (1990-91).

GOALS FOR HEALTH CARE PROVIDERS Based on the understanding of how health care providers can influence smoking cessation, the following overall goals guide activities in this channel:

- Health care providers will be aware of, promote, and play an active role in smoking intervention efforts in the community;

- Health care providers will regard smoking cessation advice as the minimal standard of practice; some providers will go beyond providing advice;

- All health care facilities will adopt and effectively implement policies for a smoke-free environment; and

- Smoking patients will more actively seek assistance from the health care system to stop smoking.

INTERVENTION PROTOCOL To achieve these specific goals, we developed activities and established impact objectives and timelines. Figure 8 presents the impact objectives. COMMIT surveys (Mattson et al., 1990-91) measure progress in achieving such impact objectives, but these data are not yet available. Primary care physicians and dentists are the focus of the health care provider protocol because they see a large percentage of smokers each year and because they are generally receptive to doing preventive interventions. Targeted physician groups include the primary care specialties of internal and general medicine, family practice, obstetrics and gynecology, and osteopathy. Targeted dental offices are those practicing general dentistry.

The protocol requires activities that educate practicing physicians and dental health teams, involve them in promoting community-wide smoking control activities, and establish smoke-free offices and hospitals. Figure 9 presents the required activities for this channel. Whenever possible, we promote links among other channel activities in the protocol to reinforce the

Figure 8
Health Care Provider Task Force impact objectives for 1993

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1. Among heavy smokers who have visited a physician or dentist in the past 12 months, increase the percentage who report having been told to stop smoking or asked to set a quit date by their physician or dentist.

    - Sixty percent of smokers will report having been told by a physician and 35 percent by a dentist to stop smoking;

    - Twenty-five percent of smokers will report having been asked by a physician and 20 percent by a dentist to set a date for stopping smoking.

2. Increase the percentage of physicians and dentists who report setting stop-smoking dates with patients most of the time.

    - Twenty-five percent of physicians and 20 percent of dentists will report setting stop-smoking dates with patients most of the time.

3. Increase the percentage of health care facilities (e.g., doctor and dentist offices, clinics, hospitals) that do not allow smoking by either patients or staff.

    - Ninety percent of physicians' and dentists' offices and other health care facilities will be smoke-free.

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effects of the protocol. For example, the smokers' network and local cessation program guides, both of which are primarily cessation resource activities, are actively promoted through health care settings.

Some communities are finding that other health care professionals such as pharmacists and occupational and public health nurses are ready and able to reach smokers and have chosen to include them in COMMIT activities. For example, in Brantford, Ontario, chiropractors attended training events with family physicians, and physician leaders provided special events for public health nurses.

Approximately 30 physician and 30 dental offices were randomly selected in each community for a telephone survey in 1990. Office staff in these practices were asked about office smoking policies and available cessation resources (impact objectives 2 and 3 in Figure 8). Mailed surveys were sent to all primary care physicians and general practice dentists to determine their counseling cessation practices.

Physician and Dental Training There are three levels of training activities provided for physicians and dental care teams designed to achieve the educational goals and facilitate regular counseling of all smokers following a standard protocol.

The *most advanced level of training* develops leadership and educational skills for medical and dental care teams within the intervention communities. This *train-the-trainers* approach uses national training seminars to build the

Figure 9
Health Care Provider Task Force intervention activities

1. Train leaders for basic and comprehensive continuing education sessions for physicians and dental health professionals.

2. Provide basic continuing education sessions for physicians.

3. Provide comprehensive continuing education sessions for physicians.

4. Provide basic continuing education sessions for dental health professionals.

5. Provide comprehensive continuing education sessions for dental health professionals.

6. Determine strategies for motivating and training office staff.

7. Promote smokers' network.

8. Influence training of physicians and dental health professionals.

9. Promote smoke-free policies in health care facilities.

capacity of medical and dental care teams within the communities to deliver the other two levels of training. The objectives of these training events are as follows:

- Developing the leadership skills of health care providers from the community to enable them to offer education to their colleagues regarding smoking cessation;

- Teaching the participants the recommended content and timing for basic and comprehensive educational events and providing resources that will help them to be effective educators in their home settings;

- Providing a variety of learning strategies that demonstrate how to develop smoking cessation intervention skills; and

- Providing ideas for the marketing of educational events in smoking cessation.

A central component of these train-the-trainers seminars is an actual demonstration of the comprehensive workshop for community physicians and oral health teams. In addition, the faculty makes suggestions for how to plan, market, and deliver the course. It is expected that these health care providers will work with COMMIT staff and often with local continuing education organizations to make the courses successful.

National experts in the clinical aspects of smoking cessation designed the materials for the train-the-trainers seminars and serve as the instructors. The seminars provide both information and practice in conducting comprehensive training workshops in the local communities. The leaders place particular emphasis on experiential techniques and providing feedback to participants. Intervention strategies are taught through lectures, demonstration, practice, and videotaped simulations. In addition to the events specifically for COMMIT leaders, NCI offers these advanced workshops in conjunction with regional and national professional meetings, to encourage participation by community health providers throughout the United States.

One or two physicians from each of the intervention communities attended a national training seminar in January 1989. They learned how to deliver both a 1-hour introductory type of session (*basic training*) as well as the longer skills-development workshop. These physicians have served as training resources in providing continuing medical education opportunities for physicians during the 1990 program year. Parallel training was also provided for oral health teams from each community during 1990.

Basic training is a 40- to 60-minute presentation by local health care providers who attend the national training and by invited guest speakers. These sessions motivate physicians and dentists to intervene with smokers and promote interest in more comprehensive, advanced training. Basic training emphasizes the following areas:

- The health benefits of smoking cessation;

- Importance and effectiveness of health care provider intervention;

- How to create an office environment and practice that supports smoking cessation and maintenance;

- A brief summary of intervention strategies;

- Factors that often interfere with maintaining cessation and how to address them; and

- Steps to further develop clinical skills in cessation counseling.

The presentations work well when they are incorporated into established networks for professional development and continuing education, such as grand rounds at local hospitals and regular meetings of professional organizations.

Comprehensive training offers more detailed instruction and demonstrations of how to create and deliver effective smoking cessation interventions in physicians' and dentists' offices. This training includes video demonstrations and opportunities to practice intervention skills and build on the content of the basic training. Attendees receive a manual instructing them in the physician-delivered smoking intervention steps.

Training for the oral health care team is similar to the physician training but has a greater emphasis on the role of the dental assistant or hygienist. There is also more content on prevention of smoking because dentists see teenagers more often than do physicians. Dentists and other members of the oral health team attend training in intervention procedures and planning office routines. They receive an instructional manual and other resource materials designed especially for the dental office.

There are a total of 909 primary care physicians altogether (the mean was 83 per community) and 731 general practice dentists (the mean was 66 per community) in the intervention communities. During the 4 years of intervention, a major goal is to attract 80 percent (727) of primary care physicians and 65 percent (475) of general care dentists to training events. All sites have conducted health care provider training and have achieved the process objectives expected at this stage of the trial (Ockene et al., 1990-91).

Influential Activities   Each community, through a community analysis, has identified influential health care professionals who are interested in smoking as a community health problem. In addition to their involvement in continuing medical and dental education, these "influentials" stimulate community change by promoting smoke-free health care facilities; supporting new regulations—and the enforcement of existing regulations—about the sale of tobacco to minors, and smoking in public places, schools, and worksites; and serving as spokespeople with the media, schools, and community groups. COMMIT staff members provide assistance to health care provider "influentials" in the form of a training manual with learning resources; materials from Doctors Ought to Care (a national physician group involved in innovative—and often humorous—antitobacco activities); and materials and training in media and legislative advocacy.

DISCUSSION AND CONCLUSIONS   Physicians, dentists, and other health care providers can serve as role models, advocate healthier environments, and encourage smokers to quit. Given that a large percentage of heavy smokers visit a physician and/or a dentist each year, the clinician's role in facilitating smoking cessation is important from both clinical and public health perspectives. The results of the COMMIT baseline evaluation survey confirm the importance of health care providers in the smoking cessation effort. Most smokers are aware that smoking is harmful to their health and say that they would try to stop smoking if told to do so by their physicians. The general public is very supportive of nonsmoking norms for health care facilities, and many smokers agree that smoking should at least be restricted in such settings.

Given these considerations, there is considerable logic to the COMMIT protocol, including the health care channel. Key goals are to train physicians, dentists, and other health care professionals to counsel or advise smokers to stop smoking; to set up their office practices to facilitate smoking intervention; and to advocate smoke-free health care facilities and smoking-related legislation.

Health care providers affect their colleagues' response and professional norms through their leadership roles as members of the COMMIT community board, in the Health Care Provider Task Force, and as representatives of their own professional societies and agencies. Not all health care providers are participating, and there are barriers to the integration into practice of systematic, effective smoking interventions. These barriers include time constraints, provider skepticism that they can "really make a difference" in getting smokers to quit, competing demands, and limited training in cessation counseling techniques. However, the educational events and materials provided to health care professionals not only build skills in working with smokers but also demonstrate how to integrate this work into regular office routines. Appendix A, at the end of this chapter, provides case studies to illustrate how three communities have implemented the COMMIT standardized protocol.

The COMMIT intervention is built on the premise that the interaction of many activities will magnify the impact of any one approach. Mobilization of the health care community will increase the chances of achieving the goals of COMMIT and of having a demonstrable impact on smoking cessation.

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Dissemination of Physician-Based Smoking Cessation Interventions[3]

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INTRODUCTION   Although the vast majority of physicians recognize the importance of smoking cessation as a disease-preventive measure, few physicians are confident of their ability to help patients stop smoking (Ockene et al., 1988a; Orleans et al., 1985; Schwartz, 1987; Valente et al., 1986; Wechsler et al., 1983; Wells et al., 1984). Several factors help explain the limited involvement of physicians in smoking interventions: limited knowledge of the effectiveness of their own counseling and advice; lack of counseling skills; little or no reimbursement for counseling; lack of organizational support in the office environment; and limited availability of materials to aid them and their patients in smoking cessation efforts (Battista et al., 1986; Kottke et al., 1987; Lewis et al., 1986; Ockene et al., 1988a; Orlandi, 1987; Orleans et al., 1985; Valente et al., 1986; Wechsler et al., 1983; Wells et al., 1984). Therefore, it appears that deficits in primary care physicians' knowledge, skills, and attitudes about smoking interventions, system and organizational barriers, and lack of incentives interact to limit the effective use of smoking cessation interventions in primary care settings.

Phase III studies, defined by the National Cancer Institute as controlled intervention trials (Greenwald, 1985; Greenwald and Cullen, 1984), have demonstrated that physician behavior can be changed through training (Lindsay et al., 1989; Ockene et al., 1988b; Strecher et al., 1991; Wilson et al., 1988), reminders on patients' charts (Cheney and Ramsdell, 1987; Cohen et al., 1987; McDonald et al., 1984), computer reminders (McPhee et al., 1989), and other techniques (Battista et al., 1986). Phase III trials have also demonstrated clearly the effectiveness of physician-delivered interventions to achieve smoking cessation (Cummings et al., 1989a; Kottke et al., 1988; Ockene, 1987; Ockene et al., 1991; Schwartz, 1987; Wilson et al., 1988). However, physicians who have participated in such research were volunteers, which limits the generalizability of the findings.

The percentage of eligible, practicing, primary care physicians who participated in NCI-funded phase III studies of community-based physicians ranged from 5 percent to 50 percent (Cummings et al., 1989b; Kottke et al., 1990; Wilson et al., 1988). Thus, it is unknown whether proven physician-

delivered smoking cessation strategies can be effectively disseminated within a representative sample of community-based physicians. Phase IV studies (Greenwald, 1985) that employ representative samples of community-based physicians are needed to test the effectiveness of physician-delivered smoking cessation interventions.

Investigators at the NCI-funded Cancer Prevention Research Consortium (University of Rhode Island, Miriam Hospital, and Brown University) are addressing the need for phase IV studies by testing a strategy to accelerate the adoption and implementation of smoking intervention protocols within a defined population of primary care physicians. The following sections discuss the models and strategies used in the Physicians Counseling Smokers Project, a phase IV study of physician-delivered smoking interventions.

DIFFUSION THEORY AND APPLICATION   Rogers (1983) and Orlandi (1987) have described models for the process by which innovations in health promotion, such as physician-delivered smoking cessation interventions, are diffused throughout medical care settings over time. The first phase, adoption of an innovation in the primary care setting, occurs when physicians accept the innovation and begin to put it to use (Rogers, 1983). The adoption of a new technique or technology generally encompasses several steps, beginning with awareness of the innovation and a personal interest in pursuing further knowledge. An evaluation and trial period follows as a physician weighs the advantages and disadvantages of the innovation against current practices. For example, in the case of smoking interventions, the physician attempts to foresee how additional interventions with smokers would fit with current practice and workflow. The final step of adoption is taken when the innovation is accepted and a decision is made to use it.

Active approaches to influencing and enhancing adoption of innovations are termed dissemination efforts. In the medical setting, dissemination efforts may include the use of influential physicians as change agents (Rogers, 1983). Such physicians may influence adoption if they express support and encouragement to other physicians and serve as role models in their own practices. Recently, Lomas and colleagues had considerable success in changing physician behavior by using local physician leaders to disseminate practice guidelines regarding cesarean sections (Lomas et al., 1991). Brief presentations to increase awareness of the innovation at hospital staff meetings, grand rounds, or in professional newsletters may also enhance the dissemination process.

The second phase in the diffusion process is implementation, which can be defined as the effective use of the innovation by physicians over time. It is obvious that the eventual success of an innovation depends on how well it is implemented by the targeted user group (Orlandi, 1987). Successful implementation is enhanced by the use of specific protocols and materials as well as other resources that enable physicians to integrate the innovation easily into their office practice system (Orlandi, 1987).

Orlandi (1987) described a "linkage" process to overcome obstacles to diffusion; a linkage system serves as a bridge between the technology of health promotion, its supporting resources, and the actual recipients of the interventions. In the diffusion of physician-delivered interventions to general medical care settings, a linkage system might include medical societies and other professional organizations, regional health departments, government agencies (e.g., NCI), hospitals, health maintenance organizations, medical schools, and voluntary organizations (e.g., American Cancer Society and American Lung Association). The ideal linkage system contains representatives from the resource group that developed or planned the innovation, the intermediary providers of the innovation (i.e., physicians providing smoking interventions and medical decisionmakers from the health care system), and the patients who are the targets of the innovation (Orlandi, 1987). Following a collaborative model, the linkage system works toward identifying the needs, capabilities, and concerns of each group within the system. "Change agents" or new organizational structures may be established to facilitate the linkage process (Orlandi, 1987).

Influential physicians in the community can play an important role in the diffusion process, especially if they are "early adopters" (Rogers, 1983). Early adopters may serve as role models for other physicians who may initially be less active and involved ("laggards") (Rogers, 1983). Adoption and implementation rates may be affected also by factors such as compatibility and complexity of an innovation in comparison to current practices, the relative advantage of an innovation over current behaviors, the ability to adopt the innovation on a trial basis, and the degree to which results of an adopted and implemented innovation are readily visible or measurable (Rogers, 1983).

These principles of diffusion theory can be used in the design of interventions to increase the dissemination and implementation of physician-delivered smoking cessation methods.

TRANS-THEORETICAL MODEL   The transtheoretical model of change provides a conceptual framework for understanding the process of individuals' behavior change (Prochaska and DiClemente, 1983 and 1986). This model is based on observations that individuals considering or undergoing behavioral change, such as stopping smoking, pass through a predictable sequence of stages (Prochaska and DiClemente, 1983 and 1986), as shown in Figure 10.

Individuals in the precontemplation stage are either unaware of the problem or deny it, and they are not motivated to make a behavior change in the foreseeable future. The contemplation stage is a stage of ambivalence, when pros and cons related to change are weighed without a definite commitment to action. Individuals in the preparation stage have taken steps to change their behavior but have not yet taken definitive action. Those who have reached the action stage have initiated behavior change. Maintenance is reached when an individual has successfully made a change for some time but continues to monitor behavior to prevent slips or relapses. Prochaska and

Figure 10
Stages of change
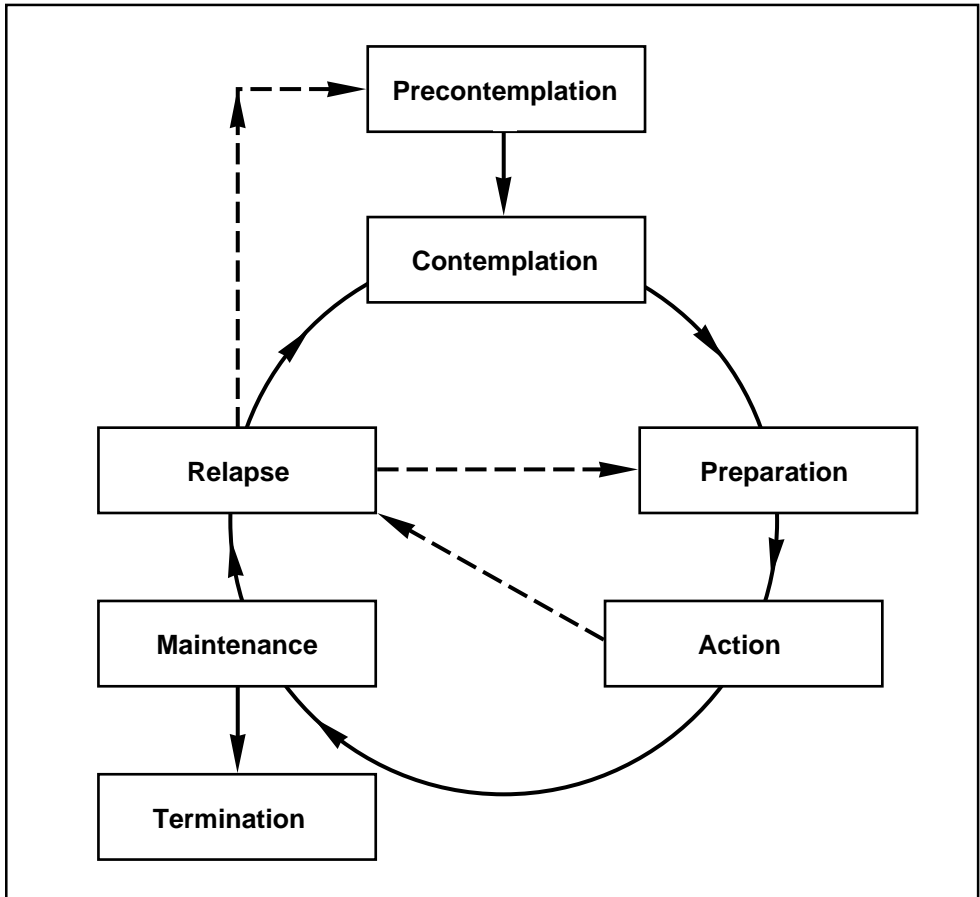
Source: Adapted from Prochaska and DiClemente, 1983.

DiClemente (1986) found that individual smokers may take several years to move through the stages of change, and moreover they may cycle repeatedly through the last four stages.

Prochaska and DiClemente (1983 and 1986) have also identified specific experiential, cognitive, and behavioral processes that facilitate movement through the stages of behavior change. Of great importance is their finding that the processes of change that are used by individuals vary across stages. For example, individuals in the precontemplation stage are more likely to use cognitive strategies, such as consciousness-raising, while individuals in the action stage are more likely to use behavioral strategies, such as stimulus control and counter-conditioning. On the basis of these findings, Prochaska and DiClemente have suggested that clinical interventions to facilitate

behavioral change will be most successful if they are matched to the individual's stage of change (DiClemente et al., 1991; Prochaska and Goldstein, 1991) and have successfully tested this hypothesis in clinical smoking cessation trials (Prochaska et al., 1990). The transtheoretical model of change has now been successfully applied to behaviors other than smoking cessation, including behavior change that requires adoption of healthy behaviors (Marcus et al., 1992; Rakowski et al., 1992).

Physician behavior change, including the adoption and implementation of smoking cessation interventions, may also move through stages of change as described in the transtheoretical model. For example, physicians at the precontemplation stage have not yet accepted the idea of adopting smoking interventions into their office practices. Physicians in the contemplation stage are seriously considering providing smoking interventions but have not decided to take action, whereas physicians in the preparation stage have taken steps to implement protocols in their office (adoption) but have not used them regularly. Physicians in the action and maintenance stages are actively implementing smoking cessation protocols and systems.

This characterization of physician stage of change may assist those who attempt to influence the diffusion of physician-delivered interventions. Strategies that are matched to a physician's stage of change may be most effective in changing the physician's behavior and accelerating the rate of adoption and implementation of physician-delivered smoking cessation interventions. For example, physicians who express little or no interest in adopting smoking intervention strategies (precontemplators) might be more likely to respond if their awareness of the effectiveness of physician-delivered interventions were increased. Contemplators might respond to personal contact with a "consultant" who could assess their motivational barriers and offer potential solutions, resources, and support. Although these actions are not likely to lead to immediate adoption and implementation, physicians may move to an intermediate stage that will facilitate eventual adoption of the intervention practices. Physicians who are in the preparation or action stage are likely to be responsive to such intervention as the offer of counseling skills training or education in the use of smoker assessment questionnaires. Physicians in the maintenance stage may benefit from reminders to provide smoking counseling (e.g., chart stickers) or from reinforcement for their activity (e.g., from chart audits and/or feedback from patient satisfaction questionnaires).

PHYSICIANS COUNSELING SMOKERS Diffusion theory and the transtheoretical model were used in the design of the Physicians Counseling Smokers Project, a component of the Rhode Island Cancer Prevention Research Consortium. The consortium was funded by NCI in September 1989. Physicians Counseling Smokers was designed to address the following specific aims:

- Assess the impact of a comprehensive, community-based intervention on the rates of adoption, implementation, and maintenance of physician-delivered smoking cessation interventions;

- Measure the impact of the comprehensive intervention on physicians' knowledge, attitudes, and practice behavior and on community smoking cessation outcomes; and

- Identify individual, system, and organizational factors that predict physicians' adoption, implementation, and maintenance of physician-delivered smoking cessation interventions.

The entire community of physicians providing primary care to the people of the State of Rhode Island is the target population for the study. All primary care physicians in one distinct Rhode Island geographic area received the experimental intervention for a period of 15 months. Physicians in two other geographic areas served as "untreated" controls. After 15 months, a crossover feature was implemented and a second area was targeted for intervention, while physicians in the third area remain "untreated" for the entire 3-year intervention period. The intervention began in the spring of 1991. Both physician outcomes (knowledge, attitudes, and behavior) and community and population smoking outcomes are to be measured. The population outcomes will be derived from a representative sample of approximately 4,200 Rhode Island smokers recruited for the Rhode Island Cancer Prevention Research Consortium projects.

Recruitment and Preparation   According to diffusion theory, adoption must precede implementation (Orlandi, 1987). For adoption to occur, physicians must become aware of the innovation and its potential usefulness. Thus, an important first step in the diffusion process is preparing members of the population to enhance their participation in the project. In a phase IV study (Greenwald, 1985; Greenwald and Cullen, 1984), the recruitment strategy must maximize participation among eligible physicians to create a representative sample and must avoid creating barriers to widespread participation. Care must be taken to avoid placing any additional burden on physicians by the requirements of participation in the research aspects of the study (e.g., measurement). Recruitment and enrollment of physicians into the study thus becomes a crucial first step in the overall strategy to increase diffusion of smoking interventions within this population.

Several avenues were used to enhance awareness of the project in an attempt to increase recruitment and hence participation. First, intermediary organizations were enlisted to help create a linkage system to aid in the recruitment of physicians (Orlandi, 1987). A physician advisory committee was formed, according to the principles of community activation (Bracht and Kingsbury, 1990), to generate ownership and demand for the intervention among the leaders in the physician community. Advisory committee members included local and state medical society leaders, hospital and health maintenance organization medical staff presidents, professional medical organization representatives, and voluntary agency board members. The project staff met with advisory committee members to familiarize them with the goals of the

project and to solicit their input regarding the proposed recruitment and intervention process. Support was generated among advisory committee members for the intervention, and strategies to effectively reach and involve other physicians were discussed.

Committee members agreed to assist in the enrollment process through recruitment phone calls to colleagues. The demand on physician "recruiters" was kept minimal, in that each was asked to make only a brief phone call (2 minutes) to each person on a defined list of physicians (an average of 8 to 10 calls per physician). The recruiter was asked to state the goals of the project briefly, endorse the project, and encourage physicians to enroll when approached. Dietrich (1990), using a similar recruitment strategy, successfully recruited a large sample of community-based primary care physicians for an office-based cancer prevention project.

A targeted promotional campaign was also developed to increase awareness about the project. The campaign included items in hospital medical newsletters, mailings to eligible physicians from influential physicians (e.g., director of the State health department and president of the state medical society), and announcements about the project in the state medical society newsletters. Finally, grand rounds sessions were given in community hospitals during the recruitment period. In addition to providing an overview of the project and presenting compelling statistics about the importance of physician counseling for smoking cessation, each session included a short "trigger video" that was designed to increase physician awareness of patients' views about physician advice to quit smoking. Discussion points covered in the session included patient and physician expectations about recommendations to quit smoking and the positive impact physicians can have on patient decisions about health behaviors. The authors recognized the potential problem of contaminating the baseline survey by providing this session at grand rounds. When weighing the risk of influencing the physician baseline by providing this brief educational session versus the potential for increased enrollment, they decided that the grand rounds were needed to generate demand for the project and enhance recruitment. Grand rounds were provided in both the control and the intervention areas, decreasing the likelihood that the baseline would be affected differentially across conditions.

During the early phase of the recruitment process, the investigators learned several useful points. One was about the relative lack of interest in the scientific aspect of the project among eligible physicians. In Rhode Island, many physicians in community hospitals without university affiliations were not only reluctant but wary of being involved in a project that was designed primarily for research goals rather than service delivery. On the other hand, a factor that enhanced acceptance of the project (available only *because* the project is research-oriented) was the potential to provide physicians with feedback about their success in lowering smoking rates within their *own* communities. An overriding concern expressed by the

advisory committee was that individual physicians might perceive that, by participating, they would have to do much more than they would do in typical interactions with patients. The investigators addressed this concern by emphasizing that physicians will be provided with the best available resources and strategies to allow smoking interventions to become a consistent, *more effective* part of their *usual* interaction with patients. It was emphasized that the research staff would also be working with office staff members to enhance their role in providing smoking interventions to patients, which could potentially decrease the current workload for physicians.

There were only two defined requirements for physician participation in the project: (1) completion of an annual questionnaire assessing physician knowledge, attitudes, and practices with respect to smoking cessation and interventions and (2) completion of an annual audit of each office practice to assess and document smoking cessation activities and resources that are currently in use. Physicians are able to select their level of participation in the intervention. They do not have to agree to use any of the protocols or resources that will be made available to them during the intervention period. Thus, the only requirements involved agreements to complete repeated assessment. Although surveys are often perceived as unpopular by physicians, the absence of a requirement to accept intervention protocols enhanced physician willingness to participate. We have succeeded in recruiting more than 80 percent of the eligible primary care physicians in the geographic areas selected for the study.

Delivery Of the Intervention

Delivery of the intervention to individual physicians is accomplished through the use of "office practice consultants," master's-level health care providers with health promotion training. Rather than using only the traditional CME format, an "academic detailing" approach will be used. This unique educational approach has been described by Soumerai and Avorn (1990); it extends the promotional practices used primarily by pharmaceutical sales representatives to university-based educational outreach. Characteristics of this approach include use of focus groups to understand the motivations of the targeted physicians, involving "opinion leaders," promoting active learner involvement, providing repetitive messages and reinforcement, using brief graphic materials, and training detailers to deal with resistant, indifferent, and less receptive physicians (Soumerai and Avorn, 1990).

Questionnaire data and informal interviews are used by office practice consultants to assess and "stage" individual physicians. As a result of the assessment, office practice consultants are able to personalize the intervention for each physician's practice. A physician-centered approach is used, in that each physician will have an intervention tailored to his or her expressed interest, current smoking cessation knowledge and attitudes, and baseline stage of adoption and implementation. Brief, intermittent "detail" visits and phone calls are scheduled with physicians to develop a plan of action for

each physician, office, and staff. Printed materials developed by NCI and major voluntary agencies are distributed by the office practice consultants, when appropriate, to increase awareness, interest, knowledge, and activity. To facilitate the communication process, graphic flipcharts and brief handouts will be developed by the project staff. During four visits over a 1-year period, the office practice consultants can develop an ongoing relationship with physicians and office staff, negotiate plans for use of smoking cessation interventions, address barriers, and solve problems.

To increase the diffusion of available resources, the intervention will match individual physicians' interests and needs to their stage of adoption and implementation of smoking cessation protocols (Prochaska and DiClemente, 1986; Prochaska and Goldstein, 1991). For example, those physicians who have not yet made the decision to implement office systems to identify and track smokers (precontemplators or contemplators) are given information to increase their awareness of the effectiveness of such interventions without being asked for a commitment to implement them. During the course of the intervention, those physicians also are provided with a newsletter to inform them of the activity of their "early adopter" colleagues, who have already elected to implement aspects of the office-based smoking intervention program. Physicians in preparation and action stages who express a desire to implement smoking assessment and intervention systems are also provided with samples of resources and training on how to use them effectively.

Initial assessments by the office practice consultants are aided by new measures being developed by Prochaska and colleagues at the University of Rhode Island, which include the physician's stage of adoption and implementation of smoking cessation interventions. Our definition of stage of adoption was based on the NCI protocol for physicians that incorporates the four A's of patient counseling about smoking (Glynn and Manley, 1990):

- *Ask* (all patients about their smoking status);

- *Advise* (all smoking patients to quit);

- *Assist* (smoking patients with their smoking, regardless of their interest in quitting); and

- *Arrange* (followup visits with smokers).

The NCI counseling protocol was slightly modified, according to a patient-centered counseling approach (Grueninger et al., 1989), to include addressing the agenda (i.e., smoking) at each patient visit. "Ask" was changed to "assess" to cue the physician to assess the patient's stage of change as well as aspects of the patient's smoking history. Physicians who report that they routinely assist greater than 80 percent of their patients who smoke and arrange a followup specifically to discuss smoking are considered to be in the action stage.

Resources to be provided to the physician may include (1) educational materials about physician-delivered smoking interventions for physicians and their office staffs; (2) materials and systems for smoker identification, assessment, and tracking; (3) physician self-instruction manuals (i.e., Glynn and Manley, 1990); and (4) formal skill counseling workshops for physicians and staff members (see Table 3).

The education of physician participants, both during office practice consultant "detail" visits and at more traditional CME sessions, will include information on how to assess patients' smoking history, level of nicotine dependence, stage of change, reasons for smoking, pros and cons related to smoking, and ways to match interventions to individual smoking patients in light of these assessments (Goldstein et al., 1991; Prochaska and DiClemente, 1986; Prochaska and Goldstein, 1991). Training sessions for physicians in preparation or action stages will be voluntary and offered on site at community hospitals whenever feasible. These workshops will apply state-of-the-science educational techniques aimed at improving physicians counseling skills. Skill teaching will employ small-group methods, including role-play, video demonstration and review, and feedback techniques successful in the teaching of medical interviewing. In these sessions, physicians will be given the opportunity to learn more about smoking cessation counseling skills, practice applying these skills to simulated cases, and consider how these newly learned skills will be applied to their clinical practice. Other office personnel who provide primary care or patient education activities will be encouraged to

Table 3
Summary of intervention strategies for physicians

	Stage of Adoption/Implementation				
	Precontemplation	Contemplation	Preparation	Action	Maintenance
Office Practice Consultation	✔	✔	✔	✔	✔
Resource and Referral Lists	✔	✔	✔	✔	✔
NCI Office Manual	✔	✔	✔	✔	✔
Information About Reimbursement		✔	✔	✔	✔
Information About Physician Effectiveness	✔	✔	✔		
Materials for Patients			✔	✔	✔
Materials To Identify and Track Smokers			✔	✔	✔
Skill Training Workshop for Physician			✔	✔	✔
Training Workshop for Staff			✔	✔	✔

attend these sessions as well. Breakout groups will be employed for discussing the special concerns of each group of professionals attending the workshop.

Evaluation Of the Project   Efficacy of the physicians' intervention will be assessed through measured changes in (1) physician knowledge, attitudes, and behavior regarding smoking cessation interventions and (2) community smoking outcome measures. It is hypothesized that, after 3 years, physicians who receive the intervention will have increased their knowledge about smoking-related practices, developed more positive attitudes about smoking cessation, and increased their adoption and implementation of office-based smoking inter-ventions. Moreover, this will result in a significantly smaller proportion of subjects who smoke in target intervention areas than in control areas. As noted previously, population-based outcomes will be derived from a represen-tative sample of Rhode Island smokers recruited for the Rhode Island Cancer Prevention Research Consortium.

Presently, the investigators are in the final stages of developing the physician measures. They include

- An algorithm to categorize physician *stage of adoption and implementa-tion*;

- A measure of *pros*, or benefits of the provision of smoking cessation interventions, and *cons*, or barriers to provision of smoking cessation intervention, adapted from a similar measure, the Decisional Balance Inventory, which was developed for smokers by Velicer and colleagues (Velicer et al., 1985);

- A *processes of change* measure, adapted from a measure derived from the transtheoretical model for smokers (Prochaska et al., 1988);

- *Smoking-related intervention practices* derived from Wells and colleagues (Wells et al., 1986);

- A *knowledge* questionnaire, derived from Ockene and colleagues (Ockene et al., 1988b); and

- A measure of physician *self-efficacy*.

As described previously, an annual audit of the office practice will be performed to assess and document smoking cessation activities and resources currently in use. The items to be assessed will include the presence of an office smoking policy, identification of an office smoking intervention coordinator, use of identification and tracking systems, use of patient education materials, use of a followup system, and presence of Physicians Counseling Smokers materials.

SUMMARY   The Physicians Counseling Smokers Project, a phase IV NCI-funded research project, was designed to assess the effectiveness of an intervention to disseminate physician-delivered smoking cessation protocols among a

population of primary care physicians. In designing the intervention strategy, the investigators have incorporated principles of diffusion theory (Orlandi, 1987; Rogers, 1983), the transtheoretical model (Prochaska and DiClemente, 1983 and 1986; Prochaska and Goldstein, 1991); academic detailing (Soumerai and Avorn, 1990); and state-of-the-science physician educational strategies.

The population of physicians targeted for recruitment into the study is all primary care physicians serving adult smokers in Rhode Island. To recruit a representative sample of the physicians (more than 80 percent of eligible physicians in intervention areas), the authors had to develop a recruitment strategy that would maximize enrollment and participation. Thus, among the strategies used for recruitment are several that are derived from diffusion theory, including development of a "linkage system," and strategies to increase awareness of physician-delivered smoking interventions in the target population (Orlandi, 1987).

The intervention will disseminate the resources developed by NCI for physicians in office practice (Glynn and Manley, 1990) and will use academic detailers (Soumerai and Avorn, 1990), master's-level health care providers with experience in health promotion, to deliver much of the intervention. Physicians will be individually assessed, according to measures developed by the project team, and the intervention will be matched to each physician's stage of adoption and implementation, using the principles of the transtheoretical model developed by Prochaska and DiClemente (1983 and 1986).

If the intervention is effective in increasing the adoption and implementation of physician-delivered smoking cessation interventions, the investigators will be able to measure its effect on both physician behavior and patient smoking prevalence. Because the results should be generalizable to other community settings, a positive outcome will have much clinical and public health significance. Moreover, the intervention strategy could be easily adapted to diffuse other cancer prevention measures and, more generally, other health promotion innovations within the medical care community.

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Clinical Interventions in Tobacco Control: A National Cancer Institute Training Program for Health Care Providers

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DISSEMINATING INTERVENTIONS Other chapters in this monograph describe the clinical trials funded by NCI that examined the effect of health care professionals on smoking by patients. This section describes the training projects conducted by NCI to disseminate the research results after completion of the above trials.

Project Planning At the time the five clinical trials were completed, there was very little information about mechanisms to disseminate behavioral interventions to practicing clinicians. Although the trials had demonstrated that physicians and dentists can change the smoking behavior of their patients, there was little in the literature about effective methods for rapid training of clinicians in the new techniques. One trial from the United Kingdom clearly demonstrated that mailing information on smoking cessation techniques to physicians resulted in very little change in physician knowledge and, presumably, very little change in physician behavior (Fowler et al., 1989). Given the volume of mail that most physicians receive and the demands on their time, such a result is not unexpected.

Experience from clinical trials in smoking cessation techniques indicated that physicians and dentists are willing and able to incorporate effective techniques into their practice after training in these skills. The trials showed that clinicians appreciate how tobacco use affects their patients' health and that health care professionals are willing to intervene with their smoking patients when provided with clinical techniques that are (1) effective and (2) easily incorporated into a busy practice.

Based on the concepts derived in the clinical trials, a decision was made to develop a training program that would provide clinicians throughout the United States with information about smoking cessation techniques and the skills to apply such techniques. A program for physicians and nurses began about 2 years before a similar effort was started for dentists and other oral health professionals.

Medical Materials Development An early step in the development of the training project was the creation of effective training materials, which began prior to the completion of the clinical trials. A consensus on the development process for training materials was established while the major trials were in progress.

The investigators held regular meetings during the trials, and issues such as study design, comparability of data, intervention techniques, and validation were discussed in early meetings. At the end of the trials, extensive discussions focused on the principal findings, the results that were found in more than one trial, and the lessons that should be communicated to practicing clinicians.

Based on these discussions, a consensus document was written: *How To Help Your Patients Stop Smoking: A National Cancer Institute Manual for Physicians* (Glynn and Manley, 1990). The manual, designed for primary care physicians, nurses, and office staff members, was written as a "how to" guide, not as a scientific paper. It addresses two subjects: how to intervene with a smoking patient, and how to establish mechanisms in an office practice that result in systematic, routine treatment for all smoking patients.

Five steps are described for establishing and maintaining such an office system:

- Select a smoking cessation coordinator;

- Create a smoke-free office environment;

- Identify all smoking patients;

- Develop smoking cessation plans for patients; and

- Provide followup care.

These five steps establish a system that allows for the routine care of smoking patients. This office organization is planned to ensure that all patients who smoke are identified, monitored, and appropriately treated at every office visit. Because office practices differ, the exact procedures adopted will vary. However, it is important to involve as many members of an office staff as possible in smoking cessation. Involvement of the office staff results in more support for patients, increases the likelihood of patients' success, and reduces the amount of physician time required.

Within this framework of an office system, the NCI manual describes brief interventions that can be used by clinicians when they are face-to-face with a smoking patient. An intervention plan is presented and summarized with the four A's:

- *Ask* about smoking;

- *Advise* smokers to stop;

- *Assist* patients who want to stop; and

- *Arrange* followup care.

This intervention can be initiated at any office visit. The intervention typically lasts less than 3 minutes, but it may vary with each patient's needs and the clinician's skills. The recommended procedures are based both on data from the trials discussed above and on a meta-analysis of 39 controlled trials (Kottke et al., 1988), which showed that the most effective techniques used more than one modality (e.g., physician advice, self-help materials, nicotine gum), involved both physicians and other clinical staff, and involved more smoking messages over a longer period of time.

The next step in development of the training program was the creation of materials for teachers. The manual described above contained the basic information for a course, but experience from the clinical trials indicated that there were several different ways to teach this information. The development of teaching materials required extensive input from the trial investigators, as well as from experts in the design of training programs. The training materials design incorporated some new materials as well as ideas that had proved useful in the trials.

The training materials constituted a 3-hour course. Both longer and shorter training sessions had been used in the trials, and the 3-hour time was a compromise. A longer course would allow more time for skills development, which would be useful for physicians who received little formal training in behavioral change techniques. However, longer courses require more time commitment from the clinicians who attend. A shorter course, of 1 hour or less, is more typical in medical education and presents fewer logistical barriers; but a period shorter than 3 hours would allow little time for skills development exercises and could consist of only a lecture. A lecture can only transfer knowledge; it cannot teach skills.

The clinical trials indicated the value of conducting exercises that allow clinicians to practice techniques for smoking intervention. Most of the training in the trials included role-playing exercises. Another teaching technique frequently used was modeling of the intervention on videotape. The new training materials incorporated both techniques. Another exercise was designed that had small groups discuss typical smoking patients as an alternative to the role-playing exercise, because many of the course teachers would have had no experience with conducting a role-play. The small-group exercise was designed so that teachers with little experience in conducting exercises could lead a discussion of common intervention issues.

Other exercises in the training materials address issues of organizing the office and defining roles of staff members. Barriers to implementing an office system for smoking cessation also are discussed.

Finally, the order of topics covered during the course was considered. As mentioned above, the NCI manual included the intervention techniques (the four A's) within the framework of the office system approach, but this order was changed somewhat in the training materials. The training materials

included an introduction that briefly addressed the importance of smoking cessation to patients' health. The introduction also discussed the crucial role of physicians and other clinicians in smoking cessation. Finally, the introduction reviewed the literature that demonstrated the impact of brief interventions on smoking among patients.

After the introduction, the course materials covered the four A's. Didactic material was followed by videotape demonstration of the techniques and then practice exercises. A short discussion of followup visits was then presented, including the importance of followup and the conduct of a typical followup visit. A videotaped demonstration of a followup visit was then shown. The final module of the course addressed the office system approach with didactic materials, slides, and exercises. A brief closing section reviewed the highlights of the course. The course materials, titled *How To Help Your Patients Stop Smoking: Trainer's Guide* (US DHHS, n.d.[a]), are contained in a three-ring binder that includes teaching notes, slides, handouts, and the videotape.

The final step was the design of materials to train the trainers. Courses for trainers were considered essential because few health professionals in this country had experience in smoking cessation techniques. A 1-day course for trainers was designed. A longer course might have been preferable, to produce trainers who can not only discuss the didactic information comfortably, but also conduct small-group and role-playing exercises; but, as with the course for clinicians, a longer course presents more logistical barriers and is likely to be attended by fewer health professionals.

The trainers' workshop demonstrated the 3-hour course to the participants and allowed them to discuss the teaching techniques used in the course. Approximately 6 hours of class time were allowed, so that questions about the didactic materials and the exercises could be addressed in detail. New materials were developed for the conclusion of the trainers' workshop, and issues relevant to implementing a course were discussed. The material was designed to involve the participants in a discussion of organizing and marketing a course to health professionals. That portion of the workshop was designed to help trainers develop a plan of action for conducting courses for their colleagues.

Training Activities   As training materials were created, a plan was developed to reach clinicians with the training. An initial goal was to train 100,000 physicians within 3 years. (Subsequent goals were formulated for the training of other health professionals, as discussed below.) The goal was based on the number of practicing physicians in the United States and the proportion of primary care physicians among them.

A total of 50 workshops to train trainers are planned. With an average attendance of 40 trainers, 50 workshops will produce 2,000 trainers nationwide. Those trainers then conduct shorter courses (1 to 3 hours) for their

colleagues. If each trainer can teach 50 other physicians, a total of 100,000 physicians will have been trained (see Figure 11).

This strategy does not require the development of a new training institution but seeks to incorporate the new course into established continuing medical education systems. To reduce the prevalence of smoking as rapidly as possible, initial efforts will be to train practicing clinicians rather than those still in internship and residency.

In order to reach clinicians throughout the country, NCI sought to collaborate with medical organizations (e.g., American Medical Association and American Cancer Society) that shared a commitment to cancer prevention and had a membership of practicing physicians or nurses. National associations initially approached were those that have state-level components, primary care specialties, and members likely to treat patients in high-risk populations. Through their members, interested organizations were encouraged to develop policies to sponsor, support, and promote training for clinicians in smoking cessation techniques.

Agreements with organizations committed to smoking intervention training were developed for implementing essential activities. Under those agreements, NCI provided expert faculty for trainers' workshops, as well as all training materials (trainer's guides and videotapes) for each workshop participant. Participants were also given as many copies of *How To Help Your Patients Stop Smoking* as needed for distribution to the clinicians they train.

The collaborating organizations were asked to promote the training to their members and make special efforts to ensure that the training reaches physicians who serve high-risk populations. The organizations also convened the trainers' workshops and, most importantly, recruited the trainers. Clinicians were sought who already had teaching responsibilities, so that this class could be easily incorporated into established teaching institutions.

These trainers not only were willing to attend the 1-day workshop, but also agreed to conduct classes for 50 of their colleagues. The trainers were also asked to use the NCI training manuals and to keep NCI informed of their progress in teaching.

Figure 11
Training 100,000 clinicians

Phase I—Training Trainers	Phase II—Training Clinicians
50	2,000
× 40	× 50
2,000	100,000

Source: National Cancer Institute, February 1990.

Discussions with the staff and leaders of professional and voluntary associations made clear that this kind of training strategy works for some associations but not all. The strategy requires staff time and commitment. To assure participation by members, association leaders and staff members must promote and organize the training efforts. In addition, the "train-the-trainers" model will not fit with every association's continuing education activities. Some groups already have activities that address the smoking issue, and some associations do not have continuing education programs in which to incorporate the NCI course.

Association Support   Many medical associations and agencies, however, did adopt the NCI training into their activities. National associations that have done the most training have done so by encouraging the participation of their state affiliates. In particular, the American Cancer Society and the American Medical Association have formally encouraged their state divisions and component societies to adopt this project. Both organizations have staff members at the state level to work on the program, and both have local affiliates that can reach their members. Networks that allow programs to reach from national to state to local levels have proved invaluable in the dissemination of the training.

Several other associations have participated in this training effort. Several medical specialty organizations, even those with less extensive state and local organizations, conducted trainers' workshops at their national meetings. State health departments and large HMOs were also very active. Collaborators to date include the American Cancer Society, American Medical Association, Association of American Medical Colleges, American Medical Women's Association, Society of Teachers of Family Medicine, Association of Teachers of Preventive Medicine, American College of Preventive Medicine, National Medical Association, many state medical societies, and several large health maintenance organizations.

Typically, a trainers' workshop is sponsored by the state medical society and the state division of the American Cancer Society. After the workshop, the trainers conduct classes for their colleagues under the auspices of the sponsoring organizations. In many cases, a state medical society will encourage or assist local medical societies as they work with the trainers to conduct courses. The classes have been taught as special events, but usually they are incorporated into ongoing medical education systems. The 3-hour course can be taught in more than one session. A shorter version of the course also is taught, often to inform physicians of the need for training in smoking cessation and to identify those interested in more complete training.

NCI provides trainers with new teaching materials periodically. Among these materials are new publications that discuss interventions for preventing tobacco use among children and adolescents. The materials, developed by NCI with the collaboration of the American Academy of Pediatrics, discuss brief interventions for use by pediatricians and other physicians who care

for children. Included in these materials are discussions of preventing exposure of children to environmental tobacco smoke, anticipatory guidance to prevent tobacco use, cessation by adolescents, and the role of physicians in schools and the community.

NCI reinforces the work of the trainers by providing periodic mailings to all health professionals they train. These mailings provide new information on smoking cessation and prevention techniques and augment the training with new materials and ideas. The NCI staff has also promoted the importance of smoking cessation training in articles in professional journals and through presentations at medical education conferences.

Clinical interventions in tobacco control are most effective when practiced by more than one health professional in an office and when the intervention is incorporated into routine office procedures. Accomplishing these tasks requires knowledge and skills on the part of physicians and nurses. For this reason, training in these techniques is most effective when entire office teams are trained, rather than just physicians. Whenever possible, trainers and sponsoring organizations are encouraged to recruit office teams to attend their classes. Nurses and others of the office staff can make the physician's intervention more efficient and effective, and they should receive training for this role. However, this is not always possible, and training of physicians alone is certainly valuable.

The training program has reached physicians and nurses in a variety of practices. The program has been adopted by HMOs, private practices, public health clinics in State and local health departments, family planning clinics, and specialty clinics. The trainers have also taught the course to residents, medical students, nursing students, and other health professionals in training. As of January 1, 1992, 34 trainers' workshops had been conducted, which produced more than 1,100 trainers. An estimated 40,000 health professionals have subsequently been trained by these trainers.

ORAL HEALTH TEAM RESEARCH

Design

As discussed above, the first efforts to train health care providers were directed at those professionals who work in primary care medical practices, especially physicians and nurses. In 1989, while the training of medical providers was under way, a similar program for dentists, dental hygienists, and dental assistants was planned. One study funded by NCI, as well as other trials, demonstrated that dentists can be as effective as physicians in influencing patients to quit smoking. Furthermore, it was recognized that oral health professionals, like medical professionals, see a large proportion of the smoking population every year. In addition, the oral health team routinely treats adolescents and young adults, who often have excellent health and therefore do not have frequent contact with physicians and nurses.

Tobacco use commonly produces or contributes to ill effects in the mouth (Mecklenburg et al., 1992). The dental care team can show patients their own oral health problems, thereby creating teachable moments, since tobacco-related conditions in tissues of the mouth often occur years before serious internal diseases become detectable. Tobacco use intervention is a reasonable complement to the preventive services common to dental practice.

The dental profession has concerned itself primarily with patients who use smokeless tobacco products. For example, moist snuff will produce leukoplakia in the oral mucosa in about half of users within 6 months after their beginning use. The oral effects of smoking are more diverse and less frequent. Without clear guidance about scientific methods to help smoking patients, and because of physicians' history of concern about smoking, fewer dentists than physicians have actively helped patients stop smoking.

Strategies   In 1989, an NCI program was organized to ensure that the oral health team and dental organizations are routinely involved in tobacco control activities. Eight strategies were identified to achieve this goal.

Some NCI dental program strategies included efforts to encourage dental professional organizations to play a more active role in tobacco control. Other activities were designed to train oral health care providers in tobacco control interventions.

Efforts to promote tobacco control as an appropriate function of oral health care providers were directed at the leaders and members of professional organizations. NCI convened meetings with organization leaders and committees to advise them of the Institute's interest in cooperating with the dental profession and to learn about any reciprocal interest. As a result, leaders from seven major dental organizations wrote to NCI, expressing support for NCI's tobacco control initiative and announcing their desire to work with the Institute to reduce the public's use of tobacco.

NCI recognized that dental clinicians would most readily adopt new tobacco intervention methods in their practices if their own professional organizations urged them to do so. Thus, several dental organization leaders were encouraged to introduce and seek approval of organizational policies and position statements that promoted tobacco control efforts by their members. Established policies were assessed and recommendations made for new policies.

To promote awareness about problems of tobacco use and methods of control, a series of symposia, panels, and special presentations were introduced into the annual meeting of several organizations, often using distinguished authorities in the field. Articles and news releases were prepared for dental organization media. Special announcements about the availability of NCI consultation and assistance were mailed to organization leaders through lists provided by dental organizations.

To promote communication and coordination among the organizations, NCI convened the National Dental Tobacco-Free Steering Committee, composed of representatives of 14 national organizations. Nearly all oral health clinicians in the United States are members of one or more of the organizations represented on the committee. The committee advises NCI about the most feasible and efficient means to advance tobacco control through the dental profession. The committee is a forum for organizational information exchange on tobacco control topics and it provides a means for recognizing previously isolated initiatives and coordinating dental profession activities with the larger community of tobacco control activities.

As was done for physicians, NCI assembled an *ad hoc* committee to propose methods for rapidly strengthening dental clinicians' knowledge, skills, and commitment with respect to control of tobacco use. Four basic differences from the medical development model emerged. First, the more generic term "tobacco" would be used instead of "smoking," because both smoking and smokeless tobacco are addictive, many users switch or use both types, and the involvement of dentists emerged primarily through their concern about the oral effects of smokeless tobacco.

Second, the term "oral health team" would be emphasized because research suggested that the clinical team approach led to more effective interventions than did individual efforts. Furthermore, the team approach promotes flexibility in developing clinical intervention systems.

Third, prevention services would be given attention equal to that for cessation services. About 75 percent of individuals aged 5 to 17 visit a dental office each year. Because more than 80 percent of tobacco users begin during their youth, the oral health team could intervene to persuade children and youth to avoid tobacco use. An intervention reinforced each year as adolescents grow to adults could help prevent psychological and physiological addiction.

Fourth, dental education institutions would be approached to encourage continuing education for graduate clinicians and the integration of tobacco intervention issues into the undergraduate curriculum. Toward this end, a special program was presented to faculty members of dental education institutions prior to specific followup with individual institutions. Dental institutions have been in transition because of changing patterns of disease. Thus, many schools have been open to concepts and methods that advance oral medicine and preventive practice services that had not been widely taught previously.

Training Methods   Efforts to train oral health professionals in techniques to stop tobacco use, although modeled after the program to train medical professionals, were different. First, there are differences between the practices of medicine and dentistry that must be accommodated in a training program.

Second, the dental program was developed later and therefore benefited from experience gained in the medical program.

Two training publications were created for the oral health team. The first, *How To Help Your Patients Stop Using Tobacco: A National Cancer Institute Manual for the Oral Health Team* (Mecklenburg et al., 1990), was based on the manual for physicians and nurses but differed in several ways. The dental manual was organized into three parts with a chronology similar to the behavioral steps of stopping tobacco use:

- The first part, "Get Ready," addresses activities to create an office system to treat tobacco users.

- The second, "Help Patients," discusses the four A's. This discussion emphasizes treating patients who use smokeless tobacco. This section also includes a discussion about preventing the start of tobacco use among youth. Brief interventions for use with children and adolescents are described.

- The third part, "Follow Through," which discusses followup care of patients, includes a conceptual shift that goes beyond the processes of patient management. Follow Through asks the oral health team to work for tobacco control outside the office, that is, as citizens of their communities and in their personal behavior.

The second document developed was *How To Help Your Patients Stop Using Tobacco: Trainer's Guide* (US DHHS, n.d.[b]). As with the dental manual, case histories and other discussions of patients were modified from the medical model to reflect dental practice. An introductory section states the dental program goal, objectives, and strategy, and helps potential trainers with planning advice.

The trainers' workshop for the oral health team was also different from the physician training program. The physician's manual was organized such that course content and teaching methods were combined, so the course was truly a 1-day train-the-trainers program. The dental program equivalent taught the entire course content for clinicians during the first half-day. The first session thus served as a demonstration of the course as NCI recommends trainers teach it. The second session taught training methods, planning for training, background information about tobacco industry strategies, counter-strategies for clinicians, and NCI's Smoking and Tobacco Control Program. Because the two half-days are separate units, many individuals having an interest in applications in their own office environment attended the first half-day only. The second half-day included a high proportion of individuals who work in educational institutions, are affiliated with training programs, or have a specific interest in sharing tobacco use intervention information with professional colleagues.

Initial Observations   Through work with professional organizations and the conduct of training programs, significant progress has been made in motivating oral health professionals to intervene in tobacco use.   New tobacco control policies have now been adopted by professional organizations including the American Dental Association, National Dental Association, American Association of Dental Schools, American Dental Hygienist's Association, Academy of General Dentistry, and American Association of Public Health Dentistry. At one time, a few dental organization policies did little more than prohibit smoking during meetings. Now many organizations include comprehensive policies that address tobacco intervention services, intervention research, dental professional education, public education, organization administration, collaboration with nondental organizations, and advocacy. Many policies urge members to become trained in intervention methods and to assist their patients. Some organizations have joined coalitions of concerned citizens in the support of stronger public policy for tobacco control at community, state, and national levels.

Collaborative training programs have been conducted with national dental organizations. For example, the American Dental Association has a long record of supporting tobacco control through its professional development and public education programs. The American Dental Association developed new programs consistent with NCI tobacco intervention research results and increased the intensity of its promotion of clinician involvement in tobacco control issues. The Academy of General Dentistry has sponsored NCI training and has made the control of tobacco use a high-priority national initiative. This is significant because the Academy of General Dentistry is dedicated to professional excellence through continuing education. Most NCI training has been sponsored by state dental associations, state dental hygienist organizations, state health departments, state divisions of the American Cancer Society, and dental schools. California has conducted an independent training program through a special initiative. The State coordinates with NCI and uses NCI manuals and concepts in its dental courses.

As of January 1, 1992, 24 courses had been held in the United States, training 1,233 clinicians and 668 trainers. Data on the number of clinicians subsequently taught by the trainers are now being collected.

Dental assistants' interest in learning tobacco use intervention methods has accelerated as the program has progressed. Dental hygienists have been most responsive to the NCI training program and often may be the program coordinators for tobacco intervention in dentists' offices. Tobacco intervention methods are compatible with other preventive oral health services by hygienists. Tobacco use reduces the benefits of dental hygiene services, so there is a rationale for hygienists' involvement in intervention.

A few courses have had participants representing both medical and dental practices. If one profession is dominant, providing appropriate

materials for the other has sufficed. If large numbers of both medical and
dental participants attend, it has been necessary to change the order of pre-
sentation of dental materials. For improved flexibility, dental courses held
in 1992 were planned to follow the presentation sequence used for medical
training (i.e., "Introduction," "Help Patients," "Follow Through," and "Get
Ready").

**PROJECT
EVALUATION** The evaluation of the NCI training project will determine how effec-
tive the training program is in increasing the use of specific smoking
cessation techniques by health care providers. The following questions will
be answered by the evaluation:

- To what extent do the health care providers trained in NCI courses
  incorporate these techniques into their practices; and is there an
  increase in the use of these techniques that can be attributed to the
  training?

- Among trained health care providers, does the extent of technique
  adoption, both in total and in specific techniques, vary with profes-
  sional characteristics, practice characteristics, training class characteris-
  tics, or time since training?

- How many health care providers have been trained through this project?

- What characteristics of trainers predict whether they will actively train
  their colleagues, and how have they used the NCI materials to conduct
  classes?

The first two questions will be answered by surveys of health professionals
who have been trained. A sample of these professionals will be asked to
complete written questionnaires prior to taking the course and 3 to 6 months
after the course. In addition to asking about personal and professional charac-
teristics, the questionnaire will ask about the use of smoking cessation tech-
niques in their practices.

To answer the third and fourth questions, a telephone survey of all trainers
who have participated in the project will be conducted. Trainers will be asked
to provide details of all training they have conducted. Information about their
own professional activities will also be sought.

CONCLUSIONS This project has attempted to take new information on tobacco control
from clinical trials and rapidly disseminate it to practicing clinicians nation-
wide. To accomplish this, NCI has sought extensive help from professional
organizations. Such organizations have willingly participated in the NCI
health promotion project, recognizing its value to their clinician members
and to patients.

Primary care professionals have expressed interest in the training program
and have been willing to attend courses on this topic. The cost of this proj-
ect—to both the Federal Government and participating organizations—is low.

The potential public health impact of this kind of program is enormous, especially in the context of other tobacco control efforts channeled through schools, worksites, mass media, and the community.

Future activities of the program will include formal efforts to incorporate this class into more training programs, especially medical and dental schools and residency programs in primary care. An expanded program directed to clinicians who care for children will also be implemented. Finally, efforts will be undertaken to make this information and training available to interested clinicians in other nations through collaboration with international organizations of health care providers.

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APPENDIX A
Case Studies

The following case studies demonstrate how three communities have implemented the COMMIT standardized protocol. The protocol defines minimum criteria to ensure quality control, and the process objectives help all sites conform to the standardized quantity of intervention.

SANTA FE, NEW MEXICO   The Health Provider Task Force (HPTF) activities in Santa Fe reflected the unique personality of the city, an internationally recognized center for the arts and entertainment. Not surprisingly, the HPTF chose to produce a videotape on smoking cessation as its first major project. Physicians and dentists from the task force were filmed at their workplaces: a local health maintenance organization, the cardiac intensive care unit of the hospital, and a dental office. The chairman of the medical society and the hospital administrator also appeared. The videotape was distributed to all primary care physicians and dentists in Santa Fe. Physicians completing the accompanying evaluation form received 1 hour of CME credit and had their names listed in local newspaper advertisements encouraging smokers to "Ask-A-Doc" for help in quitting.

Santa Fe also was the site for the "Emphysema Slims" Tennis Tournament in 1990. This national antismoking event is sponsored by Doctors Ought to Care. The New Mexico President of DOC, a member of the HPTF, worked tirelessly to attract television personalities and other celebrities to help support the project, organize the city's first hot-air balloon event, and involve local and national media.

Santa Fe is unique also in supporting a spectrum of "alternative healers." The phone directory lists more than 40 acupuncturists, an equal number of chiropractors, and a number of hypnotists, naturopaths, and massage therapists. The chiropractors are the best organized, and their client population is from all socioeconomic strata. The opportunity to bring smoking cessation information to people who might not frequent allopathic physicians and the literature associating smoking with low back pain (Deyo and Bass, 1989; Lanier and Stockton, 1988) prompted the COMMIT staff in Santa Fe to organize a meeting with local chiropractors. The meeting outlined the goals and structure of COMMIT, the relationship of smoking and low back pain, options for patient intervention, establishing smoke-free offices, and opportunities for training in cessation counseling skills. As a result of the meeting, Santa Fe chiropractors have participated in each of the COMMIT task forces, and the chiropractic association is considering recruitment of a student from a chiropractic college to come to Santa Fe to prepare a teaching module on smoking and low back pain. By choosing to participate as individual members of established task forces, rather than organizing their own independent task force, the chiropractors have averted potential conflicts with physicians who might not want to be associated with a highly visible chiropractic initiative in the community.

The Santa Fe HPTF activities demonstrate the importance of individuals in creating opportunities for action. One physician member had a weekly radio program: Smoking-related issues figured even more prominently on his show after COMMIT began. After attending the American Medical Association's annual media training workshop, he took a lead role in producing the health provider videotape. A local pediatrician joined the HPTF, appeared in the video, became a speaker on pediatric aspects of smoking, and participated actively in developing a pediatrics initiative. The latter included T-shirts with relevant messages for pregnant women and newborns; a videotape on cessation for pregnant, low-income women; and cessation classes for women attending the WIC (women, infants, and children) nutrition program in Santa Fe. A family practice physician who had been leading smoking cessation classes in his own office for many years was able to win support for a cessation class at the Santa Fe hospital. The attendees were nurses, respiratory and physical therapists, and other hospital staff. The hospital administration was very supportive, arranging coverage for those employees attending the classes. The need for such an in-hospital program was not apparent until this trusted local physician offered his services.

Despite the enthusiasm of task force members, attracting other physicians and dentists in the community to attend advanced training workshops in smoking cessation was extraordinarily difficult. Providing continuing education credits, scheduling the workshops at convenient times and at attractive locations, and offering door prizes did not prompt sufficient interest to put on a workshop. It became clear that the health providers who joined the task force were not representative, with respect to recognizing the importance of smoking cessation, of the general medical and dental community. Most doctors and dentists were unwilling to give up 3 hours of their time for cessation training. Workshops were finally arranged through a contract with a physician to telephone health providers directly, inviting them to the workshop, scheduling the workshop in conjunction with a state medical meeting, and including outside speakers of national reputation. Another successful approach was to schedule training sessions over the lunch hour in providers' offices. When a task force physician or dentist was included in these extended lunch-hour sessions, the office physician or dentist would often join his or her staff (nurse, receptionist, dental hygienist) in learning about counseling skills, office procedures to promote cessation, and followup strategies. Further participation by physicians was encouraged through a newsletter. The first issue of the newsletter reviewed diagnostic codes that might be used to bill third-party payers for smoking cessation services.

The lessons learned from the activities of the Santa Fe HPTF include the importance of physician-to-physician contacts in providing information and promoting participation by community providers; the value of office-based educational approaches that include the entire office team in efforts to establish smoke-free policies and to identify, counsel, and support smokers'

quit attempts; the need to have a broad representation of the health provider community, not just the "activist" members; and the desirability of designing initiatives around the skills and interests of individual task force members.

BRANTFORD, ONTARIO, CANADA   Brantford, Ontario, a city of 90,500, is surrounded by farmland and located on the edge of the most populated area in Canada. There are 72 primary care physicians and 35 dentists practicing in the city and 2 major health care facilities.

Several features of Canadian health care are important to understand, as they affect the implementation of the COMMIT protocol. Family medicine is a popular specialty and accounts for 80 percent of the total practicing physicians in Brantford. Most of the family physicians are in solo practice (87 percent), and not all physicians employ a nurse as a team member. Dentists also tend to be in solo practice, and most employ a dental assistant or hygienist.

Although all Ontario residents are covered by health insurance, smoking cessation counseling is not always a billable service. The COMMIT task force has taken action on this issue and through requests to the Ontario government has successfully convinced the health insurance policymakers to reimburse most tobacco-related visits.

During the early organization of the COMMIT board and task forces, the planning committee identified two physician leaders who have been central to the organizing and implementing of the health care provider protocol activities. The physician leaders have been key individuals in the creation of smoke-free environments in the city's hospitals, and one was known for his ability to give excellent presentations on smoking issues. These two physicians are from the mainstream of the practitioners in town; they are viewed as leaders but not extremists.

The HPTF has wide representation from the community, including physicians, public health nurses, occupational health nurses, pharmacists, chiropractors, dentists, and respiratory therapists. This group has met consistently and carried out the activities required. There have been many training events, and all process objectives regarding the number of professionals attending training have been met.

One of the comprehensive training workshops was attended by both physicians and chiropractors. This was a first in Brantford and has led to a clearer understanding of the roles of different professionals in the care of smoking patients. Referrals between physicians and chiropractors have become part of normal practice for those individuals who attended this joint training session.

Oral health team training is an innovation in Ontario. Although there is strong leadership from the team that was trained to conduct training events,

it has been difficult to attract dentists and their staff to workshops. The COMMIT staff will try a new marketing strategy for the next event that will first attract the attention of the hygienists.

The Public Health Service in Canada operates differently from that in the United States. Through the Canadian Public Health Service, nurses access schools and homes to offer a variety of services that make them potential key players in the COMMIT interventions. Public Health Service nurses are able to work in neighborhoods and are working with COMMIT staff to develop neighborhood cessation programs. Neighborhood physicians will provide counseling as part of these programs.

In general, the task force has been concerned about the focus on physicians and oral health teams without requiring activities for other health care professionals. Therefore, from the beginning of the project they have been creative regarding the inclusion of activities for Public Health Service nurses, chiropractors (as mentioned above), and pharmacists.

There is strong support in Canada from the profession itself for pharmacies to stop selling tobacco. The task force has facilitated a community-wide letter-writing campaign in support of banning tobacco products in pharmacies. The pharmacist on the task force represented one of the first stores in Brantford to stop selling tobacco products.

Ensuring that offices are set up to support effective physician and dental interventions is a cornerstone of the health care provider interventions. This activity that motivates and helps receptionists and other staff to implement chart cueing, monitoring, and provision of self-help materials is one of the most challenging of the COMMIT activities. It is not enough to convey the importance of these procedures at the physician and dental training events. It is apparent that most offices do not get organized until a staff person from COMMIT visits the office and helps them establish their system of cueing, monitoring, and ordering resources. It will be important to build this function into the staff requirements in the dissemination stage of COMMIT activities for health care providers.

As one would expect in a volunteer committee, individuals make different contributions to the project. However, it is important that three or four key people have continued to be present and give their time and leadership. It is often difficult to find health care professionals who will give this level of support to a project, because time spent at meetings often means time lost from seeing patients and, therefore, a financial loss. Nevertheless, we have found that there are individuals who will make this contribution, and our perception is that without them the project would not succeed.

PATERSON, NEW JERSEY   Paterson, New Jersey, is an urban area with a predominantly poor minority population. The largely black and Hispanic citizenry is confronted by high rates of poverty, crime, drug abuse, poor housing, and high school dropouts. Despite this, the COMMIT protocol has been accepted by

the community board, and virtually all of the mandated activities are being carried out with vigor and imagination. In many respects, the HPTF has led the way.

Three large hospitals and many health clinics that serve Paterson have representatives on the board and task forces. By year 2 of the trial, all of them are smoke-free, and they provide a variety of smoking cessation activities and services for their employees and the public. They have actively participated in the Great American Smokeout during each year of the trial to date, and they also participated in two major events (e.g., "Quit Month," "Cancer Education Month," "Blood Pressure Month," "Non-Dependence Day"). The hospitals and clinics work closely with COMMIT in sponsoring health screening, inviting speakers to symposia, and continuing education activities, all of which include the topic of cigarette smoking on the agenda.

Several Paterson physicians and dentists, as well as other health professionals, have stepped forward as influentials. To date, one Paterson hospital has sponsored grand rounds on smoking, and the HPTF has carried out three all-day symposia and workshops on smoking cessation for health professionals (comprehensive training).

Paterson physicians and dentists who attend the comprehensive training, as well as many others, received an office visit from a COMMIT community organizer who works under the direction of the HPTF. The organizer then carries out basic training for the physicians and dentists and their staffs and, in many cases, "Office Training and Activation of Office Staff." The content of these visits may vary, but certain features remain constant and provide necessary structure for the community organizer as well as the physicians or dentists and their staffs. Typically, the organizer will select a time when the office is relatively free. At lunch time, he will bring pizza or sandwiches and soda. We use the National Heart, Lung, and Blood Institute video, "Making A Difference," for training physicians in smoking counseling. The office staff member, physician, or dentist then is presented with a comprehensive smoking cessation program in the form of the American Heart Association's Heart Rx kit or the American Academy of Family Physicians smoking counseling kit. These kits provide guidelines and material for mobilizing the office, counseling patients, and followup.

After discussion of the film, the kits, and COMMIT, the organizer assists with setting up the waiting room area to reduce smoking. He supplies brochures, buttons, key chains, and posters. Wall racks and a plastic brochure holder are distributed to provide easy access to self-help stop-smoking and health material. Information on the Great American Smokeout and Quit and Win, as well as the COMMIT newsletters and other events of interest are routinely displayed and distributed.

It is not sufficient to visit busy offices on only one occasion and expect to have a major impact on office behavior. The community organizer serves as a "drug detail representative," returning to the office many times per year with refill material, new brochures, newsletters, and publicity. Events such as the Great American Smokeout (November), Heart Month (February), High Blood Pressure Month (May), Non-Dependence Day (July), and Quit and Win (Fall) provide occasions for the community organizer to return to the offices to reinforce and support the staff and doctors. A recent "Ask Your Doc" campaign provided still another occasion to keep in close contact with the health care community.

In inner-city urban environments, reaching out to the community may be more important than it is in more affluent, middle-class communities. This is accomplished in Paterson, under the leadership of the HPTF, by the COMMIT community organizer traveling with high blood pressure teams sponsored by the hospitals and the Paterson health department. Typically, these teams travel to churches, social service agencies, worksites, and community organizations to measure blood pressure and identify hypertensive individuals. We also measure expired air carbon monoxide of smokers, distribute self-help and related material, enroll smokers in the network, and inform them of smoking cessation activities in the community.

In summary, despite real social problems and competing issues, the COMMIT protocol for health care settings has proved applicable to Paterson. Health care facilities are smoke-free; physicians, dentists, and other health professionals are being trained and mobilized; and the health care community participates in many community events and activities. A cessation resource guide is distributed, and health care facilities are used to recruit smokers into the network and related smoking cessation activities. Despite this, there is concern that, in a 4-year intervention, physicians and dentists will lose their competitive edge and stop counseling smokers, flagging charts, and selecting quit dates. We try to counter this by returning to their offices and clinics periodically, by keeping in contact through the mails, and by providing certificates of appreciation for their involvement. Still, smoking counseling is a frustrating business with few rewards. It is hoped that the community-based nature of COMMIT and its comprehensive approach will yield success.