Helping Patients
Manage Their
Chronic Conditions

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About the Foundation

The **California HealthCare Foundation**, based in Oakland, is an independent philanthropy committed to improving California's health care delivery and financing systems. Formed in 1996, our goal is to ensure that all Californians have access to affordable, quality health care. For more information, visit us online (**www.chcf.org**).

This report was produced under the direction of CHCF's Chronic Disease Care Program, which seeks to improve the health of Californians by working to assure those with chronic diseases receive care based on the best scientific knowledge. Visit **www.chcf.org/programs/** for more information about CHCF and its programs.

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Executive Summary

S ELF-MANAGEMENT SUPPORT IS THE ASSISTANCE caregivers give patients with chronic disease in order to encourage daily decisions that improve health-related behaviors and clinical outcomes. Self-management support can be viewed in two ways: as a portfolio of techniques and tools that help patients choose healthy behaviors; and a fundamental transformation of the patient-caregiver relationship into a collaborative partnership.

The purpose of self-management support is to aid and inspire patients to become informed about their conditions and take an active role in their treatment. True self-management support involves both patient education and collaborative decision making. This document describes five interlocking strategies that help caregivers work within the collaborative model.

The five strategies are:

- Collaborative decision making: establishing an agenda;
- Information giving: ask, tell, ask;
- Information giving: closing the loop;
- Collaborative decision making: assessing readiness to change; and
- Collaborative decision making: goal setting.

In addition, this document reviews literature describing the effectiveness of self-management support interventions. Among the conclusions from that review:

- Self-management support does improve health-related behaviors, and as a result, clinical outcomes.
- The self-management support intervention for which the evidence is strongest is a collaborative interaction between caregiver and patient.
- Providing information is a necessary—but not sufficient—intervention to improve health-related behaviors or clinical outcomes.
- A collaborative relationship between caregiver and patient must be added to information giving in order to improve behaviors and outcomes.

Providing self-management support presents a major challenge to primary care practices because self-management support takes time—perhaps the most limited resource in primary care. Physicians cannot provide adequate self-management support amid the many competing agendas of a 15-minute office visit. Thus, primary care practices must create teams in which non-physician caregivers are trained to work with physicians in offering self-management support, from information giving and collaborative decision making to assessing patients' readiness to change health-related behaviors and setting behavior-change goals.

I. Introduction

At a neighborhood health fair, Felicidad Rojas was found to have an elevated cholesterol level. Her physician, whom she had seen for eight years, had never checked her cholesterol. She went to the library and used the Internet to learn about cholesterol, then changed her diet and began an exercise program. Within three months, her cholesterol level was normal.

Don Rich, a corporate executive who had been receiving his health care from one of the nation's leading multispecialty groups, was found to have elevated cholesterol during his routine yearly screening. He was offered a series of visits with the nutritionist, a free membership at a local gym, regular lab follow-up, and cholesterol-lowering medication. He did not follow the diet, did not go to the gym, and took the pills about once a week. His cholesterol remained high.

These examples illustrate the crucial role that patients play in the treatment of chronic disease. Felicidad Rojas experienced inadequate medical care but excelled at self-managing her cholesterol problem. Don Rich had the best medical care but was not interested in self-managing his cholesterol problem. How people self-manage their chronic health problems is often more important than the medical care they receive. Most people need assistance in learning to manage a chronic condition; an essential function of primary care is to help people become good self-managers.

Self-Management Support

All patients with chronic conditions self-manage every day: They decide what to eat, whether to exercise, if and when they will take medications. The important question is whether they make changes that improve their health-related behaviors and clinical outcomes.

To help such patients succeed, health care providers are exploring what is known as self-management support. This report examines the importance of self-management support, outlines some of the approaches caregivers are using, and considers the

evidence that self-management support can improve health-related behaviors and clinical outcomes.

Self-management support can be approached two ways: as a series of techniques or tools that encourage patients to choose healthy behaviors or as a fundamental shift in the patient-caregiver relationship. Rather than having caregivers, particularly physicians, tell patients what to do to improve their health, the new model is designed to build a partnership between caregiver and patient, with a shared responsibility for making and carrying out health-related decisions. Caregivers provide patients expertise and tools; patients are responsible for their day-to-day health decisions.

The purpose of self-management support is to help patients become informed about their conditions and take an active role in treatment. Self-management support involves two interrelated activities:

■ Providing information about patients' chronic conditions (helping patients to become informed).

■ Working in partnership with patients to make medical decisions, including whether the patients agree to take medications recommended by clinicians, whether patients wish to undergo diagnostic or surgical procedures, and which health-behavior-related goals the patients choose to pursue (encouraging patients to become self-motivated).

Many people think that self-management support is the same as patient education. However, true self-management support involves both patient education and collaborative decision making. Moreover, the education component of self-management support moves away from a didactic model of patient education toward an approach that provides information that patients are interested in learning.

Several key characteristics illustrate the shift from a traditional to a collaborative interaction between caregiver and patient.

■ In traditional interactions:
  • Information and skills are taught based on the caregiver's agenda;
  • There is an assumption that knowledge creates behavior change;
  • The goal is compliance with the caregiver's advice; and
  • Decisions are made by the caregiver.

■ In collaborative interactions:
  • Information and skills are taught based on the patient's agenda;
  • There is a belief that one's confidence in the ability to change (called "self-efficacy" by behavior researchers), together with knowledge, creates behavior change;
  • The goal is increased confidence in the ability to change, rather than compliance with a caregiver's advice; and
  • Decisions are made as a patient-caregiver partnership.

Is self-management support pertinent to all patients, or are some patients by nature passive, poorly motivated, and unable to self-manage? Some patients are by nature passive, but caregivers should try to inform and motivate them. The purpose of the self-management support tools described in this report is to encourage patients to become more motivated to adopt healthy behaviors. If a patient chooses not to participate in health-related decisions, preferring that the clinician advise him or her what to do, the clinician has no choice but to make decisions on behalf of the patient but should check each time to ensure that the patient agrees.

II. Five Strategies for Clinical Practice

SELF-MANAGEMENT SUPPORT INVOLVES BOTH information giving and a collaborative partnership between caregiver and patient. Several strategies, techniques, and tools have been developed to assist patients within a collaborative model. Five interlocking strategies that help caregivers are described here. (Note: "Caregivers" refers to all those people who assist patients either formally or informally, including physicians, nurses, pharmacists, medical assistants, receptionists, health educators, knowledgeable friends, and family members.)

These are not the only strategies available; as caregivers experiment with practical ways to move from the traditional to the collaborative model, many more strategies are being tried. These particular strategies were chosen because they are relatively simple to learn, do not take an inordinate amount of face-to-face time with patients, can be modified for use in computer or Internet interactions, and have some basis in research evidence. (See Section IV: Impact on Behaviors and Clinical Outcomes.) The five strategies discussed here are:

- Collaborative decision making: establishing an agenda;
- Information giving: ask, tell, ask;
- Information giving: closing the loop;
- Collaborative decision making: assessing readiness to change; and
- Collaborative decision making: goal setting.

Collaborative Decision Making: Establishing an Agenda

Under the traditional model, the patient states a chief complaint, and shortly thereafter the physician assumes control of the agenda. For instance, in one study of 264 visits to board-certified family physicians, patients who made initial statements of their problems were interrupted by the physician after an average of 23 seconds.[1]

Under the collaborative model, an agenda for the visit is negotiated between the patient and caregiver, but the patient has the last word. If the caregiver wishes to discuss an issue with the patient, the patient's permission for that discussion should be sought. Such a conversation might unfold as follows:

Agenda-Setting Dialogue

Caregiver: Your hemoglobin A1c has gone up from 7.5 to 8.5.

Patient: That's not good. It's supposed to be under 7, right?

Caregiver: Would you like to spend a few minutes discussing what we might do?

Patient: OK.

Caregiver: Let me ask you this, do you have any idea how you might bring your HbA1c back down?

Patient: Well, probably the way I eat, doing exercise-—and taking my pills—has a lot to do with it.

Caregiver: That's right. We have a tool called a bubble chart that has some choices for improving your HbA1c. Is there anything on this chart you might like to focus on?

Patient: I think I'd like to talk about exercise.

Figure 1. Bubble Chart

EXERCISE

HEALTHY EATING

MEDICATION

PATIENT-DEFINED OPTION

Example of a typical bubble chart used as a visual tool to help chronic disease patients understand the options for managing their condition. Patients may either select from among the choices displayed or suggest their own alternatives.
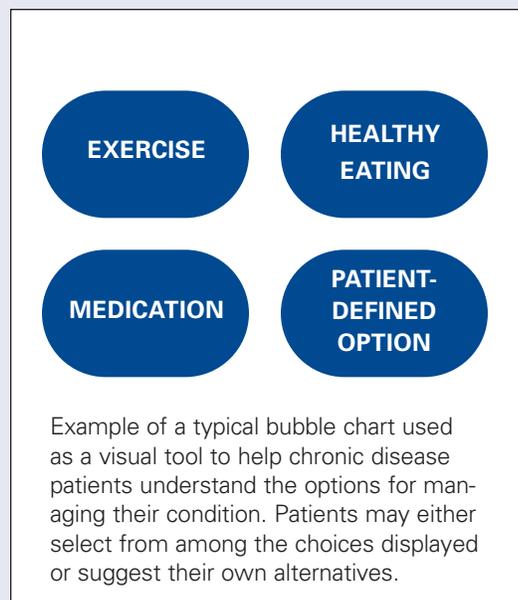
Information Giving: Ask, Tell, Ask

In the traditional model, physicians, health educators, and other caregivers provide patients information. Often, not enough information is given. In a 1994 study, 76 percent of patients with non-insulin-dependent Type 2 diabetes received limited or no diabetes education.[2] Numerous studies show that as many as half of all patients leave an office visit not understanding what the physician said.[3] Minority patients receive even less information about tests, procedures, treatments, and prognosis than white patients.[4]

Other times, patients receive too much information. For example, the American Diabetes Association (ADA) Web site lists 26 domains of knowledge and skill building that patients with diabetes should master. Walking through this curriculum step-by-step may impart more confusion than useful knowledge to adult learners. Adult learning appears to take place chiefly through "self-directed learning," in which the material to be learned is chosen in a self-motivated manner by the learner and does not necessarily follow a step-by-step or linear format.[5]

One technique that fits within the framework of self-directed learning is called "elicit, respond, elicit," or "ask, tell, ask."[6] The technique attempts to provide information to patients (thus addressing the lack-of-information problem) in a manner directed by the patient (thus addressing the excess-of-information problem). A caregiver can ask a patient newly diagnosed with diabetes, "What do you know about diabetes?" or "What would you like to know about diabetes?" After receiving an answer, the caregiver then tells the patient the information and again asks whether the patient understood and what additional information is desired. Over time, many of the ADA's 26 domains may be covered using a patient-directed agenda.

Information Giving: Closing the Loop

A technique related to the ask-tell-ask process has gained importance. According to one study, only in 12 percent of discussions of new information (a lifestyle change recommendation or new med-ication), did physicians ask patients with diabetes to restate the physician's instructions to show that they understood what the physician had said. This technique of assessing a patient's understanding is called "closing the loop." When patients were asked to restate information given, they responded incorrectly 47 percent of the time. In the study, patients given the opportunity to close the loop had average HbA1c levels lower than patients who were not. Thus, closing the loop, a simple technique of assessing patients' understanding, has the potential to improve patient comprehension and diabetes outcomes.[7]

The last three lines of the preceding ask-tell-ask dialogue provide an example of closing the loop.

Collaborative Decision Making: Assessing Readiness to Change

In the traditional model, the physician tells or advises the patient to make lifestyle changes: "You need to stop smoking." "If you want to get your diabetes under control, it is necessary to exercise 30 minutes a day." "I'm prescribing you a new pill for your cholesterol."

In the collaborative model, improving health-related behaviors is a decision the patient needs to make. In the words of self-management scholar Kate Lorig, "If people don't want to do something, they won't do it." Before trying to negotiate a behavior change with a patient, the caregiver needs to assess a patient's readiness to make a change and to tailor further discussion to that degree of readiness.

There are two related but distinct ways to think about a patient's readiness to change. One, the transtheoretical model (TTM), is based on the "stages of change" model. Using smoking cessation as an example, this model classifies individuals into one of the following groups based on their readiness to change: *pre-contemplation* (not intending to make a behavior change during the following six months), *contemplation* (thinking about behavior change), *preparation* (intending to take action within a month), *action* (making a specific change), and *maintenance* (prevention of relapse, with the behavior change persisting for six months to five years).[8] These concepts were initially formulated for problems of addiction but are increasingly being applied to chronic disease-related lifestyles (diet, exercise, taking medications).[8-11]

The other readiness-to-change model—offered by theorists of motivational interviewing (MI)—does not employ the specific stages proposed by the transtheoretical model. In the MI model, *readiness = importance x confidence.* For example, people who do not think physical activity is important are unlikely to begin such activity. People who view physical activity as important but lack confidence in their ability to succeed are similarly unlikely to initiate the change. Unlike the pre-contemplation stage, which lumps all non-ready people together, the MI model perceives that the interventions needed to encourage change when low importance is the barrier are very different than those needed when low confidence is the issue.

The TTM approach might be applicable when only one behavior is on the agenda, for example, tobacco or alcohol addiction. It is not applicable when patients are asked whether they are interested in changing any unhealthy behavior or when patients set the agenda on which behavior they wish to discuss. TTM is helpful when asking a patient, "Do you want to quit smoking?" It is not helpful when asking the question used by Kate Lorig in self-management classes: "Is

there anything you would like to do this week to improve your health?" This question allows the patient to set the agenda, thereby circumventing the issue of which "stage of change" the patient inhabits. Even if the patient sets the change agenda, there are still differences in readiness that are important to address. MI suggests some useful techniques to assess readiness to change (importance and confidence) and to encourage patients to increase their readiness.[12]

Motivational interviewing is a behavioral counseling approach that originally surfaced in alcohol-addiction treatment. MI fits within the collaborative model and stresses the importance of internal motivation. It might be particularly useful to clinicians caring for patients who have multiple health issues. A barrier to addressing multiple health issues is the time it takes to learn and carry out interventions for each particular issue. A generic intervention such as MI, which can be applied to many different health behaviors, can overcome this barrier.

The spirit of motivational interviewing can be found in the concepts of collaboration, evocation, and autonomy.[6] By active collaboration, the patient and counselor develop a non-judgmental, non-authoritarian relationship that more closely resembles a partnership than a traditional clinician-patient interaction. In a true collaboration, the clinician refrains from giving advice to a patient and instead evokes the experiences, beliefs, and ideas that motivate the patient. This process allows the clinician to obtain a truer picture of the patient's reasons to change or not to change and allows the patient to examine and reflect upon his or her feelings about behavior change. MI's recognition of the patient's autonomy is demonstrated throughout the entire process but particularly when the argument for change is brought up. MI assumes that most people are ambivalent about whether to change their behavior and tries to bring the ambivalence out into the open. Ideally, it is the patient, not the clinician, who presents the argument for change.

How does motivational interviewing work in practice? The MI counselor—who could be a physician, nurse, psychologist, health educator, or other caregiver—first assesses a patient's readiness to change health-related behaviors, then uses interviewing techniques to help the patient increase his or her willingness to change, and finally—if the patient is motivated to make an action plan—engages in concrete goal setting. (See the following section on Collaborative Decision Making: Goal Setting.) Primary MI techniques are: assessing the readiness to change by estimating the patient's level of importance and confidence; and encouraging "change talk" (i.e., patients making arguments about why behavior change would be a good idea) by the patient. The following dialogue demonstrates these techniques:

Readiness-to-Change Dialogue

Caregiver: I just got back your last HbA1c; it's gone up to 8.5.

Patient: It's supposed to be 7 or lower.

Caregiver: That's right. What would you like to do about this?

Patient: I'm already on a diet, and I'm so busy, I have no time for exercise. I don't know what to do.

Caregiver: Could we talk a bit about the exercise?

Patient: Umm, yeah, OK.

Caregiver: How important is it to you to increase your exercise? Let's do this on a scale of "0" to "10." A "0" means it isn't important, and "10" means it's just about as important as it can get.

0	1	2	3	4	5	6	7	8	9	10
Not Important										**Important**

Patient: It's an "8." I know I really need to do it.

Caregiver: Now, using the same 0-to-10 scale, how confident are you that you can get more exercise? A "0" means you aren't sure at all; "10" means you're 100 percent sure.

0	1	2	3	4	5	6	7	8	9	10
Not Sure										**Very Sure**

Patient: It's a "4." Like I said: I have no time.

Caregiver: Why did you say "4" and not "1"?

Patient: I can exercise on the weekends, so it's not something that completely impossible.

Caregiver: What would it take to raise the confidence level of a "4" to an "8"?

Patient: Maybe if I could exercise with a friend, I'd enjoy it more, be more motivated. I have a friend at work that has diabetes, too.

Caregiver: Do you want to set a short-term goal about your exercise? We could agree on an action plan.

Lessons from the Dialogue

The caregiver allows the patient to approve the agenda: "Could we talk a bit about the exercise?"

If the level of importance is high—7 or above—the caregiver moves on to confidence level. If the level of importance is low, it might help to provide more information about the risks of not changing the behavior. If the caregiver decides to propose an action plan, it would be something like: "Would you like to read this pamphlet about diabetes and talk about it next time I see you?"

If the level of confidence is medium-low (e.g., 4), the caregiver asks why it is 4 and not 1. That puts the patient in a position to speak positively about why there is *some* level of confidence.

Asking what it would take to change the 4 to an 8 makes the patient think creatively about how to make a behavior change. In this case, it leads to an action plan. The action plan might be to talk to the friend at work tomorrow and ask about exercising together, an achievable goal that could lead to further activity planning (e.g., to walk with the friend for 20 minutes at lunch on Mondays, Wednesdays, and Fridays).

If there is a sufficient level of importance and confidence to make a behavior change, the caregiver suggests discussing an action plan. Some practitioners of MI believe that action plans are appropriate only if the readiness to change (importance and confidence) is high; others believe that action plans can be discussed at any level of importance and confidence but must be tailored to where the patient is on the 0-to-10 scales.

If patients or caregivers have difficulty working with 0-to-10 scales, other ways of demonstrating importance and confidence can be used, such as thumbs-up or thumbs-down pictographic scales.[13]

Collaborative Decision Making: Goal Setting

The latter part of the preceding MI dialogue demonstrates how motivational interviewing can be used in conjunction with goal setting to help patients set targets they feel they can achieve. Goal setting in self-management support is an interaction between caregiver and patient resulting in the patient agreeing to a concrete, usually short-term, goal. Goal setting is accomplished by caregivers and patients by formalizing an action plan. Goal setting is the process, and action plans are the result of the process. The actions are highly specific—such as walking around the block twice on Mondays, Wednesdays, and Saturdays before lunch, or reducing consumption of cookies from three to one per day.[14] The process of

agreeing on an action plan is a collaborative one, and it uses some motivational interviewing techniques.

The theoretical basis for goal setting is the concept of self-efficacy.[15] Self-efficacy is a person's level of confidence that he or she can carry out a behavior necessary to reach a desired goal. This confidence level can be measured using a simple questionnaire. In a randomized, controlled trial of a patient self-management course for people with a variety of chronic conditions, researchers found that patients attending the course had several improved outcomes compared with controls and that a significant association existed between improved self-efficacy and improved outcomes.[16] Self-efficacy in patients with diabetes is correlated with choosing healthy behaviors.[17] In a study of exercise, self-efficacy significantly predicted participation in exercise programs.[18] Other investigators confirm that self-efficacy is associated with healthier behaviors.[19-21]

In the process of making an action plan, meeting established guidelines (e.g., exercising for 30 minutes at least five times a week) is not so important. What is important is success: that the patient is able to carry out the action plan, thereby increasing his or her self-efficacy. In the traditional model, physicians tell patients what behavior change to make. Often, the advice is not concrete and not easily achievable: for example, "You need to lose 20 pounds." Advice that is not concrete or easily achievable often sets the patient up for failure, thereby reducing self-efficacy and breeding further failure to adopt healthy behaviors. Early in the process, it is important to explain the need to set clear and achievable goals.

Goal-Setting Dialogue

Caregiver: Your last lab test shows your HbA1c has gone up to 9.2. What do you think about that?

Patient: I don't know. I'm taking my pills. I thought if I took them I didn't have to worry about eating candy and sweets every day; the pills are supposed to protect me.

Caregiver: What is it you like about eating candy?

Patient: I love chocolate; it's kind of comforting. I have all these things that stress me out, but I know that chocolate is one thing in my day I will definitely enjoy.

Caregiver: That makes sense. Is there anything you don't like about eating chocolate?

Patient: Well, it messes up that hemoglobin thing. But I don't want to give it up. Like I said: It makes me happy.

Caregiver: Is there anything else you enjoy doing that helps reduce your stress but doesn't get your HbA1c so high?

Patient: Maybe I could walk around the block a couple of times.

Caregiver: Do you want to give that a try?

Patient: Sure, but I'm not promising to give up chocolate.

Caregiver: I understand. Let's do a reality check. How sure are you that you can walk around the block a couple of times when you feel stress? Let's use a 0-to-10 scale: "0" means you aren't sure you can succeed, and "10" means you are very sure you can succeed. How sure are you about this?

Patient: I can do it; I'm 100 percent sure.

Caregiver: Let's try to make this as specific as possible. Rather than walking every time you feel stress, how about walking two times around the block every day after lunch?

Patient: Well, if I feel stress, that might be OK.

Caregiver: Why don't we call it your action plan: You will walk around the block two times when you feel the stress coming on. When do you want to start?

Patient: We'll see.

Caregiver: Do you want to start this week?

Patient: That might work.

Caregiver: OK. Why don't we agree that you will walk around the block two times when you feel stress? Could I call you next week to see how it's going?

Patient: OK.

Lessons from the Dialogue

When the patient mentions an unhealthy behavior (eating chocolate twice a day, for example), the caregiver doesn't challenge it but uses an MI technique: What do you like, and what do you not like about the unhealthy behavior? This encourages the patient, not the caregiver, to talk about change (what he or she *doesn't* like). This might uncover a topic for an action plan—in this case, relieving stress.

The caregiver does not judge the patient's behaviors. When the patient says: "I'm not promising to give up chocolate," the caregiver doesn't make a judgment but says, "I understand," and moves on.

The action plan should be very simple and specific. The 0-to-10 scale estimates the patient's confidence that he or she can succeed at the action plan. The purpose of the action plan is to *increase self-efficacy* (self-confidence that the patient can change something). It doesn't matter how small the behavior change is; the important thing is that the patient succeeds. To maximize the chance of success, the patient should have a high level of confidence, at least 7 out of 10, that he or she can succeed. If the level of confidence is low, the caregiver should suggest a more achievable action plan. If, for example, a sedentary patient proposes an action plan to walk five miles a day, with a level of confidence of 3 that he or she can succeed, the caregiver should suggest a more achievable action plan.

At the end of the dialogue, the caregiver tries to make the action plan more specific ("When do you want to start?"), but the patient resists ("We'll see" and "That might work"). Rather than challenging the patient, the caregiver goes with what the patient is willing to do. Sometimes, the patient will not want to make an action plan at all.

III. Impact on Behaviors and Clinical Outcomes

THE LITERATURE ON SELF-MANAGEMENT SUPPORT is plagued by unclear descriptions of the interventions being studied and a high degree of variability in the content and outcome measurements for these interventions. Given these limitations, however, the authors did consult several recent literature reviews, one meta-analysis on self-management interventions, and one lengthy review of self-management conducted by Kaiser Permanente to draw a few conclusions about the ability of self-management support to improve health-related behaviors and clinical outcomes.[14,22-26] This report categorizes interventions as: information giving only; collaborative decision making; goal setting; and motivational interviewing.

Before reviewing the evidence, two issues deserve brief attention. First, self-management-support interventions vary in their types and effect on outcomes, depending on the chronic condition or behavior that is the target for change. Second, outcomes measured generally include: health-related behaviors, usually self-reported; clinical outcomes (e.g., HbA1c levels, BMI, frequency of asthma symptoms, or arthritis-related pain; and self-efficacy (a person's level of confidence that he or she can achieve a certain behavior-change goal, usually measured by using questionnaires). These three categories of outcomes are associated with one another. For diabetes, for example, improved diet and exercise are associated with increased self-efficacy and improved HbA1c levels.[20,22,24] For patients with persistent asthma, regular use of controller medications is associated with fewer asthma-related symptoms and lower asthma-related deaths.[22]

Information Giving Only

Didactic patient education by itself does not improve health-related behaviors or clinical outcomes. Several reviews have shown the effectiveness of education for improving knowledge in diabetes care.[24,27-29] However, knowledge transfer alone is inadequate to influence human behavior; for example, diabetes education by itself seldom leads to improved glycemic control.[24,30-32]

A Kaiser Permanente review of information-only interventions in asthma concluded that "self-management interventions emphasizing improvements in knowledge or the provision of

information alone were not effective in achieving positive health outcomes or other benefits."[26] A 2002 meta-analysis of 12 randomized controlled trials on information-only programs for adults with asthma found no improvements in hospitalization rates, number of physician visits, frequency of asthma attacks, or medication usage.[33]

A literature search of arthritis self-management intervention studies published between 1993 and 2001 identified 18 studies that were divided into two groups. Group 1 contained true self-management education interventions involving both information giving and active patient involvement, and Group 2 studies provided information-only patient education or a weak program to motivate patients. All 10 of the studies in Group 1, compared with only two of eight studies in Group 2, improved clinical outcomes in the intervention group.[14]

Collaborative Decision Making

The preceding studies show that knowledge transfer alone is seldom enough to improve health-related behaviors and clinical outcomes.[34] The additional factor needed to improve patient self-management—in both the clinician encounter and the patient education intervention—is collaboration between caregiver and patient.

Collaborative decision making is an alternative to the paternalistic model in which physicians make all treatment decisions and tell patients what to do. Shared decision making is a process by which clinician and patient "consider available information about the medical problem in question, including treatment options and consequences, and then consider how these fit with the patient's preferences for health states and outcomes."[35] Currently, medical practice rarely employs collaborative decision making; in a study of 1,000 physician visits, the patient did not participate in decisions 91 percent of the time.[36]

An abundance of evidence suggests that the collaboration model improves patient outcomes. In a classic experiment, patients were provided a 20-minute intervention designed to increase their participation in decision making and information seeking with the provider.[37] The control groups received purely didactic information. In contrast with control patients, study patients showed significant decreases in HbA1c values from baseline, even though there were no differences in diabetes knowledge between the two groups.

In a comprehensive review, other researchers concluded that a participatory relationship between physician and patient is one of the most successful factors promoting healthy behaviors.[38] Another study found that patient participation in decision making increases the concordance of physician and patient goals, the understanding of physician recommendations, and self-efficacy.[20] Self-management improves when the opinions and values of both patients and physicians are taken into account in making treatment decisions.[39] Other investigators have found that collaborative care improves the chances that the patient is in agreement with the decisions made and thereby improves health-related behaviors.[24, 40-42]

Another study connected all the dots, finding significant associations between improved information giving by the physician, more participatory decision making, enhanced self-efficacy, healthier behaviors, and better outcomes in patients with diabetes.[43] The researchers concluded: "Enhancing patient-provider communication and shared decision making have been shown to result in greater patient satisfaction, adherence to treatment plans, and improved health outcomes... The consistency of these studies' findings of improved physiologic outcomes and reported health status is impressive."

Goal Setting

Goal setting is a feature of the Arthritis Self-Management Program (ASMP), a series of classes in which patients meet to learn problem-solving skills and develop goal-setting action plans. Four years after the six-week-long classes, patients reported a mean reduction in pain symptoms of 20 percent; a comparison group did not demonstrate this reduction. This reduction was associated with improvement in self-efficacy, patients' confidence in being able to cope with their arthritis.[44, 45] Similar classes (the Chronic Disease Self-Management Program) using goal setting for patients with multiple chronic conditions resulted in improved self-efficacy and decreased health distress.[16, 46]

In a meta-analysis and meta-regression of 28 diabetes self-management studies, goal setting in one form or another was a component in 21 separate interventions.[47-54] However, few of these studies include details of the goal-setting component or evaluations of whether the patients engaged in or completed their goals.

Goal setting in asthma self-management is different from that applied to diabetes or arthritis, generally focusing on symptom awareness and use of medications rather than lifestyle change. Asthma action plans are written instructions to patients and families on what to do if symptoms worsen. Studies of self-management interventions for asthmatic adults have found improved outcomes in patients who adjusted their medications using a written plan as opposed to those whose medications were adjusted by a physician.[55, 56]

Small studies of goal setting as a component of brief primary care interventions for behavior change are promising.[57-61] Researchers found moderate improvements in dietary behavior but small changes in clinical outcomes and quality of life for participants of a brief, computer-assisted dietary goal-setting intervention.[57] Adolescents[58] and adults[59] who "targeted" a nutrition or physical activity goal improved their dietary behavior and moderate physical activity more than partici-

pants who did not target behaviors. The challenge for most primary care goal-setting interventions will be finding ways to integrate them into the hectic 15-minute visit while maintaining a collaborative approach to decision making. Innovative computerized health-risk assessment, interactive technologies, and a team approach to self-management support might provide partial remedies.[60-62]

Several studies have examined goal setting unrelated to specific chronic diseases.[63-67] One study followed 95 young participants who chose lifestyle-change goals for exercise (53 percent), stress management (22 percent), and eating behavior (16 percent) and found that goal-setting skills improved with experience.[63] Another study compared client-participation in goal setting with provider-selected goals and found a significant difference between the groups for weight reduction and exercise levels, with the collaborative goal-setting group being more effective.[64] Researchers who identified six dietary intervention studies of intermediate and short-term goal setting found all six to have positive results.[65] In the Stanford Nutrition Action Program, intervention participants who set six weekly goals rated the goal-setting activity as very helpful and reported greater reductions in dietary fat intake and greater self-efficacy compared with participants receiving a general nutrition curriculum.[66]

In an extensive review of behavioral interventions to modify dietary intake, researchers found that most of the 104 randomized controlled trials were successful at increasing fruit and vegetable intake and decreasing fat intake and concluded that two intervention components seemed to be particularly promising in modifying dietary behavior—goal setting and small groups. Goal setting was associated with a greater likelihood of observing a significant effect for all three outcomes (reduction in total fat, reduction in saturated fat, increased intake in fruits and vegetables).[67]

Motivational Interviewing and Readiness to Change

Strategies tailored to patients' readiness to change fit nicely with goal setting as an increasingly popular self-management support intervention. Is there any evidence, however, to recommend either the transtheoretical model (TTM) or motivational interviewing (MI) for improving health-related behaviors or clinical outcomes?

TTM might be more appropriate for addictive behaviors than for other self-management issues. A 2002 review of 87 studies based on TTM found no empirical evidence to suggest that the stages of change are discrete.[68] Patients might be involved in more than one stage at the same time, causing the concept to lose much of its usefulness. Two investigators say that current evidence cannot confirm that behavior change occurs in distinct stages.[9] Other researchers, investigating TTM and dietary behaviors and exercise, found that classifying people in time-dependent stages was problematic and not as useful with complex behavioral issues such as diet and exercise as with smoking or alcohol addiction.[9-11]

A systematic review of motivational interviewing found this technique to be generally effective for people with drug and alcohol addition.[69] An MI intervention for patients with hyperlipidemia found significant improvements in dietary habits, fat intake, and BMI, although there were no differences between the MI group and the standard dietary advice control group and no reduction in serum cholesterol.[70] A 1999 study aimed at increasing exercise that used a no-treatment control group, a one-session MI group, and a six-session MI group found that the six-session group showed significant reductions in weight and blood pressure compared to the control group, and the one-session group had significantly decreased alcohol intake and salt intake.[71] The other two study measures—smoking and physical activity—were not significantly changed in any of the groups. A 1999 study reviewed by

researchers found that an MI intervention for adolescents had positive, significant effects on reducing the proportion of calories from fat and dietary cholesterol.[72-73] The adolescents reported high satisfaction with the intervention. Other studies have addressed MI as an intervention for prevention or management of chronic disease and have also come up with results that, while mixed, are generally positive.[74-78] A handful of MI-based studies have targeted smoking cessation, with small positive results.[79, 80] A 2002 review concluded that more studies are needed to determine the effectiveness of this approach for smoking cessation.[6]

Motivational interviewing has been found to work equally well for women and men[81-83] and appears to be more effective with individuals who have a low readiness to change.[79, 84-85] It also appears to increase readiness to change as much as, or more than, alternative interventions.[6, 86-90]

Reviews of MI studies have found results to be mixed. One possible reason is a lack of "intervention fidelity"; few studies provide "evidence of counselor competence or fidelity to MI principles and practices." Poor study outcomes might also be attributable to limitations such as inadequate follow-up, small sample size, and low rates of treatment completion.[73]

IV. Summary

A NUMBER OF GENERAL STATEMENTS CAN BE made about the effectiveness of self-management support interventions.

- Self-management support does improve health-related behaviors and, as a result, clinical outcomes.

- The self-management support intervention for which the evidence is strongest is a collaborative interaction between caregiver and patient.

- Providing information is a necessary—but not sufficient—intervention to improve health-related behaviors or clinical outcomes.

- A collaborative relationship between caregiver and patient must be added to information giving to improve behaviors and outcomes.

- Informed, motivated patients tend to have better health-related behaviors and clinical outcomes.

- Collaborative decision making has been found in several studies to improve health-related behaviors (diet, exercise, taking medications) and clinical outcomes (particularly for diabetes).

- Some evidence suggests that goal setting using action plans can result in better diet, exercise, and weight loss.

- Most of the goal-setting literature has not measured whether goals were achieved nor whether there was a relationship with self-efficacy.

- Counseling patients using the transtheoretical model's "stages of change" appears to be helpful for smoking and alcohol addiction but has not been proven effective for behavior change related to self-management of chronic disease.

- Motivational interviewing appears to be effective in helping people addicted to tobacco and alcohol; evaluations of its effectiveness in improving health-related behaviors such as diet and physical activity are mixed, though several studies show a positive effect.

- Goal setting and motivational interviewing are specific approaches for engaging in collaborative interactions.

Although these two methods have not been rigorously demonstrated to be evidence-based, they provide a sensible guide that helps caregivers to engage in a collaborative process with patients.

The Challenge for Primary Care

Providing self-management support presents a major challenge to primary care practices because self-management support takes time, a limited resource in primary care. Physicians cannot provide adequate self-management support amid the competing agendas of a typical 15-minute office visit. Therefore, primary care practices must create care teams in which some non-physician caregivers are trained to work with physicians in offering self-management support—information giving and collaborative decision making—including assessment of readiness to change health-related behaviors and behavior-change goal-setting. Exactly which personnel perform which self-management support functions will vary widely, depending on which caregivers have available time. Training in self-management support techniques and tools for all personnel is essential if primary care practices are serious about helping their patients to become informed and motivated.

In different primary care practices around the United States, self-management support functions have been carried out by physicians, nurse practitioners, physician assistants, nurses, health educators, pharmacists, nutritionists, medical assistants, community health workers, coaches, and other trained patients. Information giving, assessment of readiness to change, and goal setting can occur in private or group settings.

Recently, experimentation has begun in the use of electronic methods to help with self-management support. Some of these include interactive phone messaging systems, telemedicine hookups, touch-screen computers, personal digital assistants (PDAs), and Web-based goal-setting software. These new methods are described in two related CHCF reports, *Patient Self-Management Tools: An Overview* and *Using Telephone Support to Manage Chronic Disease.*

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