An Integrated Model for Changing Patient Behavior in Primary Care

Joshua R. Dyer
Robert Levy and
Robert L. Dyer

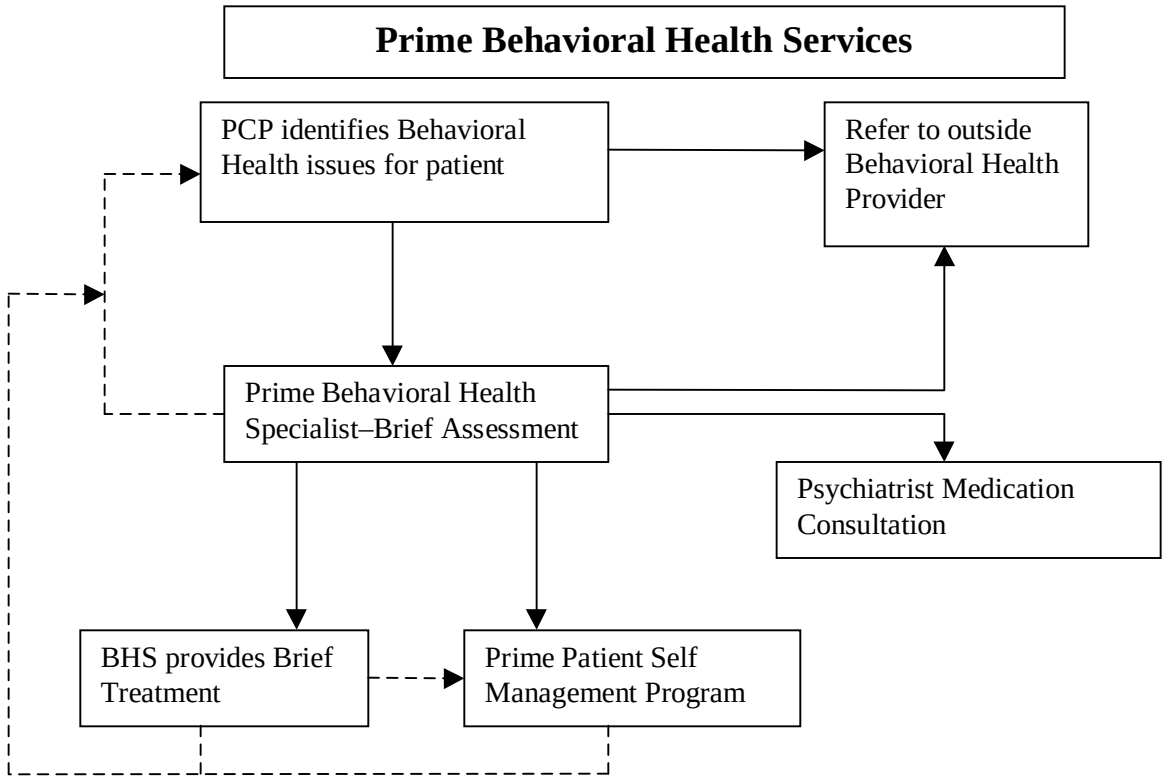
From: Psychological Approaches to Chronic Disease Management. Edited by Nicholas Cummings, William O'Donahue and Elizabeth Naylor. Context Press: Reno, NV, chapter 4, pp 71-86, 2005

Typical primary care patients enter the doctor's office expecting the expert to give them a pill or diagnose something significant and send them to a specialist in order to be cured. This system has been in place with largely unchanged expectations by either patients or medical staff since world war two; in spite of demographic changes in our society and advances in the behavioral sciences, it is still the norm. Fortunately, there is a growing movement of researchers and healthcare providers that now recognize the need to change both the method of service delivery, but also the very notion of the patient's activity in their own behalf. Patients, especially those with chronic conditions, are increasingly being seen as active partners in their care. Treatment and rehabilitation for these patients does not happen passively in the doctor's office; rather, both the patient and the health care staff create a treatment plan and share in the patient's implementation of it.

Patients with chronic conditions have unique needs that are difficult to meet in the typical 12-minute primary care physician (PCP)-patient interaction. Successful treatment often requires that patients make permanent lifestyle changes, such as changes in diet, smoking cessation, medication compliance, and implementing exercise regimens. These patients must also learn new skills such as self-monitoring and communicating with healthcare professionals. Likewise, patients with behavioral problems or mood disorders such as sleep disorders, depression, or anxiety can benefit from short behavioral interventions that are beyond the scope of the PCP's practice but do not necessarily demand referral to outside specialists.

One way to better serve these patients is to integrate a behavioral health practitioner into the primary care practice. This will improve patient care and outcomes, and also ease the burden for the PCP. This behavioral health practitioner will have two functions. First, he/she will be available as a mental health professional at all times to the PCP. For example, if the PCP treats a depressed patient in crisis, he/she can immediately take the patient to the behavioral health practitioner who is trained to deal with this situation. The PCP and behavioral health practitioner can then work together to create a treatment plan. The second function is to serve high service utilizing patients in the practice. People with chronic conditions as well as many of those with behavioral problems often need to make lifestyle changes that a structured psychoeducational program can facilitate. The behavioral health practitioner will assess their readiness to change and, if necessary, use focused, brief interventions to help the patient become ready to change. Once it is determined that the patient is ready, he/she

will enter a self-efficacy based group self-management program. Figure 1 below depicts the essential component of this model, which is called Prime Behavioral Health Services. It is based on a review and analysis of systems issues, recognition of the different needs of individual patients as a function of their readiness for change, and



recognition of the importance of group self-management

A successful behavioral health program working in a primary care setting must: 1. help extend the primary care physician, 2. help the patient in a way they recognize, 3. be founded in science, and 4. make money for the practice.

Figure 1: Overview of Prime Behavioral Health Services

Realities of Primary Care

One of the most noticeable characteristics of the primary care setting is the speed of service delivery. The average patient-physician contact is 12 minutes. PCPs see 130 patients and bill over 50 hours per week totaling a financial productivity of gross billings exceeding $400,000 per year. (Note, the average productivity of a master's level psychiatric social worker include billing 26 hours per week and annual gross billings equaling $87,000- a significantly different standard.) From this, each PCP supports an average of 4.6 full time employees (Medical Group Management Association 2003 Annual Survey). So, what happens in the 12 minutes upon which this business is built? The physician and patient address an average of six symptoms. Over half of total visits are for chronic conditions (see Table 1). While behavioral health issues are diagnosed

in less than 10% of encounters, “psychological issues” are suspected in over 30% of encounters. Why is this?

Table 1: Disposition of primary care patients

- Diabetes (Estimated 15,700,000 have it)
- Anxiety (1/3 acute chest pain visits are anxiety or panic)
- Hypertension/ coronary disease (50,000,000 Americans)
- GI problems (>75% have no physiological basis)
- Chronic obstructive pulmonary disorder (10% health costs)
  - Pediatric asthma is “epidemic”
- Pain (50% physician visits, arthritis 12% office visits of elderly)
- Insomnia (when asked 69% primary care acknowledged)
- Depression (grief/loss) 6-10% PCP patients; 80% report physical symptoms of chronic medical illness first
- Substance abuse 5%, complicating physical factor
- Somatization- high users of primary care- with little physiological basis

(American Academy of Family Physicians, 2004)

Primary care physicians don’t have much incentive to refer patients out to a behavioral health specialist. Indeed, in the US Surgeon General’s Report on Mental Health (2003) it was reported 72% of patient encounters end in a prescription, *29% are referred for in house “counseling”* (diet, medication taking, activity planning, etc.), 5% are referred to another physician specialist, and *only 2% are referred out to a behavioral health specialist*. This said, physicians care about the well-being of their patients. As long as it will work financially and with minimal disruption to their patient flow, physicians are interested in increasing the breadth of care they offer by adding services targeting lifestyle management issues. The following are the results of a survey of 120 primary care physicians in the northwest:

- 71% of office visits were follow up to chronic conditions
- 70% to 89% prefer treating diabetes, hypertension, pain, asthma with lifestyle management
- Yet 71% of patients with these disorders only saw PCPs
- 74% of practices did not offer lifestyle management
- 86% of PCPs would be interested in adding revenue by offering lifestyle management
- 60% said revenue generation would increase utilization
- 80% interested in adding a “qualified health educator and care coordinator” to their practice

(Yurdin, Northwest Physician, 1997)

What Patients Need

Not surprisingly, one reason physicians don't refer patients out for counseling is that the patients send a fairly clear message they don't want "extra" help. They don't want the stigma or the inconvenience of another set of appointments. What they do want is a noticeable decrease in their symptoms and to achieve some insight into their pattern of symptom escalation. They want this, but only if they can attain it within the context of their "normal" health services. What they get is 12 minutes with the doctor to cover six symptoms and receive a medication prescription; this is not necessarily conducive to achieving insight into symptom escalation. As a result, half of the medications prescribed are not taken as directed within 60 days; over 80% of diets and over 70% of exercise routines are not maintained for 60 days.

The treatment given in this model is not matching the need. The current system of primary care evolved from a time when most patients were treated infrequently and most often only for acute diseases. Demographics, medical science and an increasingly health conscious America have conspired to change the role of the family doctor. As is evident in Table 2 below, there are key differences in the nature and treatment of acute versus chronic diseases. The end result of this is that the role of the healthcare professional shifts from solely selecting and conducting therapy to include the additional roles of teacher and motivator. Similarly, the patient no longer just follows orders for a limited duration of time, but now is responsible for his or her own daily management. The responsibilities of each have changed, yet the 12 minute interview ending with a prescription remains the standard of care.

Table 2: Acute versus chronic disease

	Acute Disease	Chronic Disease
Beginning	Rapid	Gradual
Cause	Usually one	Many
Duration	Short	Indefinite
Diagnosis	Symptoms align with diagnosis	Often uncertain, especially early
Diagnostic Tests	Often decisive	Often of limited value
Treatment	Cure common	Cure rare
Role of Professional	Select and conduct therapy	Teacher and motivator
Role of Patient	Follow orders	Responsible for daily management

(Lorig, Holman, Sobel, et al, 2000)

Being responsible for the daily management of (a) chronic disease(s) demands that patients make and sustain a number of changes. Nearly all of them will have to learn to become adherent to medications. Often dietary changes and exercise routines are necessary. They need to learn what to do during symptom flare-ups; this is especially relevant for patients suffering from chronic pain. They need to learn how to find and use

useful, relevant information. And they need to learn how to elicit proper support from family and peers during difficult times. These are all issues well suited to behavioral medicine interventions.

Readiness to Change

Given this laundry list of changes that patients need to make, it is critical that we ensure they are ready and committed to change. In the Stages of Change Model, Prochaska et al identify five stages through which people progress in order to successfully change health related behaviors (J. O. Prochaska, DiClemente, C.C., Norcross, J.C., 1992). The following table describes these stages and the types of interventions that help patients progress through each.

Table 3: Stage appropriate intervention strategies

Stage of Change	Description	Interventions
Precontemplation	Denial- no thoughts about change	Consciousness raising Dramatic relief Environmental reevaluation
Contemplation	Identify that there is a problem and consider change in the near future	Self-reevaluation
Preparation	Gathering resources, information and support to begin behavior change	Self-liberation
Action	Beginning and continuing change	Reinforcement management Helping relationships Counterconditioning Stimulus control
Maintenance	Incorporating lifestyle changes into core behaviors; adoption of behaviors into value system	

Interventions that utilize the Stages of Change Model have been successfully applied to smoking-cessation, exercise, mammography, safe sex behaviors, medical compliance, and stress management programs (J. O. Prochaska, Redding, C.A., Evers, K.E., 1997), for a review, see (Burkholder & Evers, 2002)). The findings of these programs are that the vast majority of people in need of change are not in the action stage. For example, aggregating across studies and populations 10-15% of smokers are prepared for action, 30-40% are in the contemplation stage, and 50-60% are in the precontemplation stage (J. O. Prochaska, DiClemente, C.C., Norcross, J.C., 1992). Similar percentages have

been found for weight loss, diet, and exercise (Campbell et al., 2000; Natarajan, Clyburn, & Brown, 2002). Additionally, the amount of progress individuals make following interventions tends to be a function of the pretreatment stage of change and progressing patients from any one stage to the next within two weeks is a strong predictor of later success (Miller, 2002; J. O. Prochaska, DiClemente, C.C., Norcross, J.C., 1992; Steptoe, Kerry, Rink, & Hilton, 2001).

One approach that can effectively help patients progress toward action is Motivational Interviewing (Miller, 2002). Motivational Interviewing is an evidence-based practice based on the Stages of Change Model. It uses brief, focused sessions to bring about behavior change and has been demonstrated to be effective for problems involving alcohol, drugs, diet, and exercise (Burke, 2003).

The real value of the Stages of Change model is as a heuristic to address patients' readiness to change. That is, in precontemplation and contemplation stages, brief motivational interviewing sessions or even phone calls may be an effective way to help patients progress to action. Once in the action phase, group programs provide the most efficient and effective format to accomplish sustained lifestyle changes.

The Effectiveness of Groups

The efficiency of groups is obvious. One provider can bill and treat multiple patients at the same time. However, the effectiveness of the therapeutic benefits may be surprising to readers.

A group treatment modality offers the unique benefits of a shared sense of "normalcy" and decreased feelings of isolation, knowing that others experience similar symptoms; the experience of acceptance within the group that combats the sense of demoralization; and the opportunity to help others, thus re-building self-esteem and problem solving skills. Group treatment has been found to be superior to individual treatment for chronic pain, substance abuse, weight control, parenting problems, vocational problems, and when treatment lasted for ten or fewer total sessions (McRoberts, Burlingame, & Hoag, 1998). Otherwise, group psychotherapy was found to be an equally efficacious treatment modality regardless of patient demographic variables, diagnoses, amount of time spent in therapy, theoretical orientation approach to group of provider, and training level of provider(McRoberts et al., 1998). The finding that group format is more effective for 10 or fewer sessions when compared to individual treatment is both clinically and practically significant given that time and cost-efficiency are driving forces in today's health care industry, in addition to optimal patient care. The additional benefit of this improved efficacy in a short term intervention really becomes obvious when considering the modal number of sessions an individual sees a behavioral health practitioner is four.

The purpose of the treatment is to foster self-management skills, this structured approach to groups requires planning and a different approach to facilitation.

Self-Management Group Model

A self-managing patient is one who is informed, compliant to medications, adherent to necessary lifestyle changes, and, most importantly, is an active partner in his or her care. Successful programs rely on a collaborative process to define problems, set priorities, establish goals, identify barriers, create treatment plans, and solve problems(Glasgow et al., 1999).

An example of an established program adhering to this definition of making self-management key is Stanford's Chronic Disease Management Program (CDSMP). The CDSMP is a community-based intervention built on self-efficacy theory. (Bandura states "Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments. "(Bandura, 1997)) It is a six-week small group intervention taught by two lay leaders from a highly structured manual. The CDSMP emphasizes skill building, modeling, problem solving strategies, and social persuasion to achieve behavior change in patients with a physician-confirmed diagnosis of heart disease, lung disease, stroke, or arthritis. Lorig and colleagues found that after one year participants experienced statistically significant improvements in various health-related measures including cognitive symptom management, communication with the physician, self-efficacy, depression, and health distress. They also found health expenditure savings (K. R. Lorig, Sobel, D.S., Stewart, A.L., Brown, B.W., Bandura, A., Ritter, P., Gonzalez, V.M., Laurent, D.D., Holman, H.R., 1999).

There are several important lessons to be learned from the CDSMP.

1. A self-management program based on self-efficacy works. The benefits gained from achieving self-efficacy are still evident up to four years later (K. R. Lorig, Mazonson, & Holman, 1993).
2. Patients with different chronic diseases have similar symptom management problems, which a self-efficacy based program addresses. Put another way, heterogeneous groups shift the focus off the disease per se and onto symptom self-management. In terms of the reality of the primary care practices, it will be easier to constitute heterogeneous groups than homogeneous groups for a program. Furthermore, for the facilitators the focus is on the group process and does not assume specialized knowledge about the diseases.
3. Not only can more people be served within one program model, a single program will, by definition, be able to be more inclusive than one targeting only a single condition.
4. Lay leaders who complete a four-day training session can implement such a program effectively. No significant differences were found between groups led by two peer leaders, two professionals, or one of each (K. Lorig, Sobe, Ritter, Laurent, & Hobbs, 2001).
5. As effective as this program may be, it is not reaching its full potential. As a recent NIH report on treatment approaches to osteoarthritis stated, "Until

> sociobehavioral interventions are incorporated into medical care, their benefits may go largely unrealized (Felson, 2000)".

The Stanford work on self-management provides a framework for building self-management programs. Lorig and Holman recently defined three essential self-management tasks- medical management, role management, and emotional management- and six skills- problem solving, decision making, resource utilization, the formation of a patient-provider partnership, action planning, and self-tailoring (K. R. Lorig, Holman, H.R., 2003).

An Issue to Address for Effective Integration

An essential step when considering changing patient care is to define a model that will ensure that the program has a chance to be effective and will fit within the current healthcare system. Wagner and colleagues developed a heuristic model, called the Chronic Care Model (CCM), that identifies changes needed in the healthcare system, the provider, and the patient in order to improve patient outcomes (Glasgow, Orleans, Wagner, Curry, & Solberg, 2001; E. H. Wagner, Austin, B.T., Von Korff, M., 1996; E. H. Wagner, Glasgow, R.E., Davis, C., Bonomi, A.E., Provost, L., McCulloch, D., Carver, P., Sixta, C., 2001). They developed the CCM by reviewing and synthesizing successful interventions used across multiple settings and multiple diseases. Their findings provide a framework for tailoring a chronic disease program to fit the specific needs of the provider and patient population.

In a review of the CCM, 32 of 39 studies found that interventions based on CCM components improved at least one process or outcome measure for diabetic patients. Additionally, 18 of 27 studies across conditions (CHF, asthma, and diabetes) reduced health care costs or lowered use of health care services (Bodenheimer, Wagner, & Grumbach, 2002). The following are the six key elements identified by the CCM.

- External healthcare organization - Make chronic illness care a key goal of the organization and insure that leadership is committed and visibly involved
- Community linkages - Provide linkages with community resources
- Patient self-management support - Collaborative process to define problems, set priorities, establish goals, identify barriers, create treatment plans and solve problems
- Provider decision support - Use evidence-based practice guidelines
- Care delivery design - Use specialists such as nurse case managers, pharmacists, or health educators to provide programs and follow-up
- Clinical information management - Establish a registry

While they have had success, in a 1999 survey of 72 chronic disease management programs, Wagner et al found that only one addressed all six key elements. Additionally, while the majority claimed to offer self-management support, only 18% emphasized patient activation/empowerment, collaborative goal setting, and problem solving, which have been shown to be more effective than traditional information-oriented programs (E. H. Wagner, Davis, C., Schaefer, J., Von Korff, M., Austin, B., 1999). The good news is that HRSA has adapted the CCM model and we can anticipate increased initiatives emphasizing these organized components in publicly funded disease management programs.

Logistics/Financial Issues

As is implied by these six elements, traditional mental healthcare providers must change their practice patterns in order to succeed in primary care. The 50 minute individual session is not practical in an environment where speed and accessibility are essential. Individual sessions should be brief, well under 30 minutes (15-20 minutes being ideal), and appropriate for the patient's stage of change. If more intense, longer duration therapy is needed, the behavioral health specialist should refer the patient to a traditional setting. When appropriate, patients utilizing behavioral interventions should be spending the majority of their time in structured groups focused on self-management.

A major impediment in adapting these new modes of service delivery is the historic payment system and the historic separation of bureaucratic systems. Behavioral health and physical health often report their services differently (physical health in the Classification of Procedures Terminology (CPT codes) and behavioral health in the American Psychiatric Associations Diagnostic and Statistical Manual of Mental Disorders terms (DSM-IV code). Often insurance payors are different and scope of service issues professionally keep the delivery fragmented and apart. In 2002 Medicare demanded that all program administrators adopt a new set of codes that allowed behavioral health practitioners to help in physical health even when a DSM-IV diagnosis is not primary or secondary (the 96150-155 codes). Commercial plans are adopting these guidelines. Previously we have observed the use of physician extenders in providing education and support have been addressed in most plans through the guidelines for billing services that are "incident to" the care of the physician. Several of the key management issues in billing are summarized in the Table 3 as a function of whether behavioral services are provided in the context of integrated care in a primary practice or as separate psychiatric services.

Billing Overview

Table 3:

	In PCP Practice as Primary Health	**As Psychiatric Practitioner Services**
Diagnosis	Physical	Psychiatric *
Authority	PCP prescribes	BH Practitioner

Billing under	PCP bundled services (incident to) 99201-5, 11-15 series 99242-5 office consultations 99078 educational services- group 99401-4, 11-12 prevention interventions 0108 & 0109 for diabetes	MH benefit * 90804-29 series, individual 90853,57 group 90846-49 family 99150-5 codes as come on line
Documentation	In medical chart	BH Practitioner records
Liability	PCP practice (& BHP as provider)	BH Practitioner

Another historic problem in incorporating behavioral health into a primary care setting has been the need to achieve "relevance". Too often the behavioral health professional comes into the setting but is quickly viewed as only relevant to see depressed adults, acting out children and domestic disturbances. This encourages the traditional 50-minute therapy hour and quickly means the behavioral health practitioner is only going to see twenty five people a week and not be readily accessible to the medical staff. In order to reach the scope of relevance in a practice, experience has shown the behaviorist must offer services that touch a significant percent of the practice patients-demanding brief, group oriented interventions. If the behaviorist offerings to the medical staff aren't relevant to over 30 per cent of patients in the practice they probably are not going to have much impact on the practice.

Examples of Successful Programs

By way of example, the following three presentations from 2004 conferences address different components necessary for the successful integration of behavioral health into primary care.

- The SAMHSA Prime-E Study (Primary Care Research in Substance Abuse and Mental Health for the Elderly) (Quijano, 2004) is a large multi-site (10) and year (now in its 6th year) study that examines the elderly's use of mental health and substance abuse services in primary care. They compare the effectiveness of two service delivery models: one incorporates enhanced referral to access behavioral health care in specialty settings and the other collocates the behavioral health services within the primary care settings. Preliminary results are encouraging in that they show significantly increased engagement 72% in the collocated services vs. 48% for specialty care. The differences are even greater for alcohol related abuse, 72% vs. 29%, respectively. The importance of engagement cannot be underestimated, that is, getting a person into necessary services is the crucial first step for an effective intervention.

- Swope Health Services in Kansas City, Missouri is in the process of implementing a major integration project (Wilson, 2004). Two important lessons from their work is the need to provide the behavior health specialist with behavioral medicine and psychotropic medicine training, coaching on how to

work in medical settings, and on the providing of brief interventions. The other side is the need to provide primary care physicians and staff with scripts that, for example, prevent them from using a phrase such as “refer you to the shrink.”

- The Air Force has had a large integration project under way for several years that follows a behavioral health consultant model (referral) using clinical psychologists and social workers (Oordt, 2004). They are members of the primary care team and are trained in brief assessments and interventions. Initial evaluations show superior levels of both patient and primary care physician satisfaction. They have found that less than 10% are referred to specialty care. Patients average about 1.5 visits with the behavioral health consultant with most of these being for depression (36.6%) and anxiety (15.7%). They reported that they will be doing more group work and addressing lifestyle issues.

Summary

From a physician’s perspective, the ideal patient is one who can adequately inform the physician of his or her symptoms and coping strategies and who is willing and able to carry out the physician’s advice. Unfortunately, this patient is rare, especially when significant lifestyle changes need to be made. Behavioral medicine technologies can help patients approach this ideal by focusing on empowerment and change. As previously shown, they can greatly improve patient outcomes, patient satisfaction, and cost-effectiveness. Additionally, since Behavioral Health Specialists are mental health professionals, they will increase the number and quality of services provided by the PCP’s office. Fifty to seventy percent of all primary care visits are primarily for psychosocial concerns. Also, up to 70% of depressed patients seek treatment solely from PCPs (Hoffman, Rice, & Sung, 1996). These patients take more time, are less compliant, and have more health problems than other patients. They are inadequately treated because they don’t fit into the current healthcare system and they are not seeking mental health treatment because of stigma, lack of awareness as to the nature of the problem, or simply because it is inconvenient. By including a mental health professional in the treatment team, stigma is minimized and behavioral issues can be addressed in a non-threatening, convenient manner.

However to do so requires a coherent model that addresses both the primary care practice’s management needs as well as the patient’s needs.

Putting it All Together: The Prime Behavioral Health Services Model

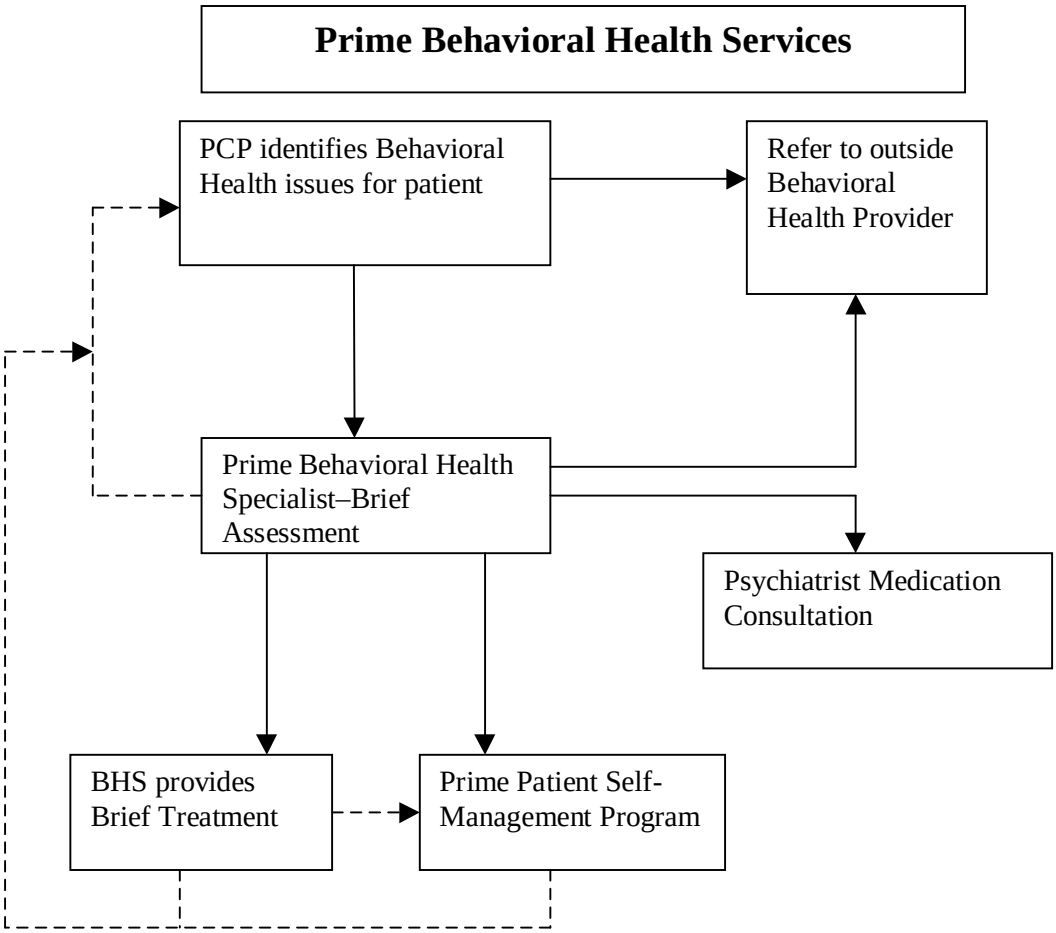
At the beginning of this chapter we introduced the Prime Behavioral Health Services model, which we now detail. The logic steps are straight- forward. The PCP identifies potential behavioral health issues for a patient and, using protocols, makes a decision to either refer the patient to an outside behavioral health provider or to the in practice Behavioral Health Practitioner, (BHP). The BHP is an independent practitioner level mental health provider, for example, clinical psychologist, MSW, or nurse equivalent who will have received specialized training on brief interventions and assessment as

well as on working in a primary care setting. This person will be available to the PCP as much as possible. The BHP will conduct a brief assessment and either provide a brief intervention, or, if appropriate, refer the patient to a more traditional service model outside behavioral provider. The other option is that the BHP can refer the patient to the Prime Self-Management program either on its own or in conjunction with the brief treatment they would provide. Either the BHP or a trained "behaviorist," who would work with the BHP, delivers the Prime Self-Management group program. The behaviorist also would provide the patients with prompting on their medication compliance as well as other life style programs.

Figure 1: **Overview of Prime Behavioral Health Services**

Brief Assessment
Standardized protocol based on…
Refer if…

Brief Treatment



Motivational interviewing to progress patients toward action stage for a given behavior.
Or depression/anxiety booster sessions?

Prime Self Management Program

Prime Health Program addresses the three essential self-management tasks- medical management, role management, and emotional management- and six skills- problem solving, decision making, resource utilization, the formation of a patient-provider partnership, action planning, and self-tailoring defined by Lorig and Holman (K. R. Lorig, Holman, H.R., 2003). However, Prime Health Program utilizes professional Behavioral Health Practitioners in the primary care practice. This means that they are accountable and available to the physicians and the patients at all times, including the ability to provide assessments and brief interventions for such behavioral/emotions problems as depression and anxiety, the ability to help the physician make decisions about referrals to behavioral health practitioners if longer term interventions are needed, and the ability to help move patients toward an appropriate level of readiness to make the lifestyle changes needed to more effectively become a partner in their care, which may also include participation in a self-management group. Finally, providing these services within and as a part of the primary care practice also means that they are billable.

Impact

The decision to extend the services offered in a primary care setting is not new. Primary care groups have long included education and support, what we have learned is that organized, structured experiences can significantly impact emotional well being, and adherence to the steps necessary for minimal adverse symptoms in patients life. In staff model health maintenance organizations organized disease management programs are routine for chronic illnesses. What is still novel is finding a way to offer cost effective programs in small commercial settings. Building a program that:

- Provides quick, brief assessments
- Assists in improving prompt appropriate referral to specialized behavioral health services
- Provides in practice brief interventions to emotionally unstable patients,
- Provides in practice brief interventions to patients needing assistance in making lifestyle adjustments to medication, diet or activity, and
- Provides in practice interventions to high service utilizing patients

Can make a difference in peoples lives and the bottom line of a medical practice.

AmericanAcademyofFamilyPhysicians. (2004). Mental Health Care Services by Family Physicians. Position Paper.

Bandura, A. (1997). *Self-efficacy: The Exercise of Control*. New York: W. H. Freeman and Company.

Bodenheimer, T., Wagner, E. H., & Grumbach, K. (2002). Improving primary care for patients with chronic illness: The chronic care model, part 2. *JAMA*, 288(15), 1909-1914.

Burke, B. L., Arkowitz, H., Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. J*ournal of Consulting & Clinical Psychology*, 71(5), 843-861.

Burkholder, G. J., & Evers, K. A. (2002). Application of the Transtheoretical Model to several problem behaviors. In P. M. Burbank & D. Riebe (Eds.), *Promoting exercise and behavior change in older adults: Interventions with the transtheoretical model* (Vol. xxii, pp. 317). New York, NY: Springer Publishing Co.

Campbell, M. K., Tessaro, I., DeVellis, B., Benedict, S., Kelsey, K., Belton, L., et al. (2000). Tailoring and targeting a worksite health promotion program to address multiple health behaviors among blue-collar women. *American Journal of Health Promotion*, 14(5), 306-313.

Felson, D. (2000). Osteoarthritis new insights: Part 2 treatment approaches. *Annals of Internal Medicine*, 133(9), 726-737.

Glasgow, R. E., Orleans, C. T., Wagner, E. H., Curry, S. J., & Solberg, L. I. (2001). Does the chronic care model serve also as a template for improving prevention? *The Milbank Quarterly*, 79(4), 579-612.

Glasgow, R. E., Wagner, E. H., Kaplan, R. M., Vinicor, F., Smith, L., & Norman, J. (1999). If diabetes is a public health problem, why not treat it as one? A population based approach to chronic illness. *Annals of Behavioral Medicine*, 21(2), 159-170.

Hoffman, C., Rice, D., & Sung, H. Y. (1996). Persons with chronic conditions: Their prevalence and costs. *JAMA*, 276(18), 1473-1479.

Lorig, K., Holman, H., Sobel, D., Larent, D., Gonzalez, V., & Minor, M. (2000). *Living a health life with chronic conditions: self-management of heart disease, arthritis, diabetes, asthma, bronchitis, emphysema & others (2 Ed.)*. Palo Alto: Bull Publishing Company.

Lorig, K., Sobel. D., Ritter, P., Laurent, D., & Hobbs, M. (2001). Effect of a self-management program on patients with chronic disease. *Effective Clinical Practice*, 4, 256-262.

Lorig, K. R., Holman, H.R. (2003). Self-management education: History, definition, outcomes, and mechanisms. *Annals of Behavioral Medicine*, 26(1), 1-7.

Lorig, K. R., Mazonson, P. D., & Holman, H. R. (1993). Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. *Arthritis and Rheumatism*, 36(4), 439-446.

Lorig, K. R., Sobel, D.S., Stewart, A.L., Brown, B.W., Bandura, A., Ritter, P., Gonzalez, V.M., Laurent, D.D., Holman, H.R. (1999). Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization. *Medical Care*, 37(1), 5-14.

McRoberts, C., Burlingame, G. M., & Hoag, M. (1998). Comparative efficacy of individual and group psychotherapy: A meta-analytic perspective. *Group Dynamics: Theory, Research, and Practice*, 2, 101-117.

Miller, W. R., Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2 ed.). New York: Guilford Press.

Natarajan, S., Clyburn, E. B., & Brown, R. T. (2002). Association of exercise stages of change with glycemic control in individuals with type 2 diabetes. *American Journal of Health Promotion*, 17(1), 72-75.

Oordt, M.S. (2004). Behavioral health optimization: An update on integrated primary care in the Air Force medical system. *Society of Behavioral Medicine*, Baltimore.

Prochaska, J. O., DiClemente, C.C., Norcross, J.C. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist*, 47(9), 1102-1114.

Prochaska, J. O., Redding, C.A., Evers, K.E. (1997). The transtheoretical model and stages of change. In L. F. Glanz K, Rimer BK (Ed.), *Health Behavior and Health Education* (2 ed., pp. 60-84). San Francisco: Jossey-Bass.

Quijano, L.M. (2004). Preliminary results: PRIME-E study. *National Council for Community Behavioral Healthcare,* New Orleans.

Steptoe, A., Kerry, S., Rink, E., & Hilton, S. (2001). The impact of behavioral counseling on stage of change in fat intake, physical activity, and cigarette smoking in adults at increased risk of coronary heart disease. *American Journal of Public Health*, 91(2), 265-269.

Wagner, E. H., Austin, B.T., Von Korff, M. (1996). Improving outcomes in chronic illness. *Managed Care Quarterly*, 4(2), 12-25.

Wagner, E. H., Davis, C., Schaefer, J., Von Korff, M., Austin, B. (1999). A survey of leading chronic disease management programs: Are they consistent with the literature? *Managed Care Quarterly*, 7(3), 56-66.

Wagner, E. H., Glasgow, R.E., Davis, C., Bonomi, A.E., Provost, L., McCulloch, D., Carver, P., Sixta, C. (2001). Quality improvement in chronic illness care: A collaborative approach. *The Joint Commission Journal on Quality Improvement*, 27(2), 63-80.

Wilson, S.B. (2004). Mind and body: Integrating approaches to reduce health disparities. *National Council for Community Behavioral Healthcare*, New Orleans.