William O'Donohue
Alexandros Maragakis *Editors*

Integrated Primary and Behavioral Care

Role in Medical Homes and Chronic Disease Management

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ISBN 978-3-319-19035-8 ISBN 978-3-319-19036-5 (eBook)
DOI 10.1007/978-3-319-19036-5

Library of Congress Control Number: 2015942823

Springer Cham Heidelberg New York Dordrecht London

Printed on acid-free paper

Springer International Publishing AG Switzerland is part of Springer Science+Business Media (www.springer.com)

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Part I
Introduction

Chapter 1
Patient-Centered Medical Homes: The Promise and the Research Agenda

Alexandros Maragakis and William O'Donohue

What is a Patient-Centered Medical Home?

To address numerous problems with costly, unsafe, and inefficient fragmented care in the US health-care system, primary care reform has become a major area of interest. Proposed reforms have been centered around goals first articulated in the Institute of Medicine's (IOM's) *Crossing the Quality Chasm* (2001), namely reducing medical errors, controlling cost, increasing patient-centered care, improving access, increasing the use of evidence-based care, including preventative services, and overall improving both the quality and the efficiency of the health-care delivery. A new model that is fair to say has gained the most attention by professional organizations, and many health-care stakeholders are the patient-centered medical home (PCMH) (Rittenhouse and Shortell 2009). The PCMH is defined by five core functions (AHRQ 2014):

1. Comprehensive care
2. Patient-centered care
3. Coordinated care
4. Accessible services
5. Quality and safety

While not new, the term "medical home" was first used in 1967 to describe a system of care to meet the needs of children with special health-care needs. In 1992, this system of care was recommended by the American Academy of Pediatrics to be expanded into general care of children, including an emphasis on accessibility, comprehensiveness, coordination, and compassion (Kilo and Wasson 2010). From there, the concept of medical homes had been discussed for general use in the pri-

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care*,
DOI 10.1007/978-3-319-19036-5_1

mary care setting, but it was not until 2007 the term "PCMH" was agreed upon by multiple professional agencies. This new model came at an ideal time, given that rising health-care costs became a center of policy reform, and primary care was seen as playing a vital role in reducing those costs (Kilo and Wasson 2010). The five functions have been defined by federal agencies like the Agency of Healthcare Research and Quality (AHRQ). Below is a description of how each of these functions is described, and what their role in promoting quality primary care is.

Comprehensive Care

The primary care setting is the ideal location for patients to have the majority of their physical and behavioral health concerns addressed. To be able to provide the comprehensive care that patients need, the PCMH focuses on providing care in a team-based approach. These teams may consist of medical providers (e.g., medical doctors, nurse practitioners, and physician assistants), pharmacists, behavioral health providers (e.g., psychologists, social workers, and licensed clinical providers), and various other health-care providers that may provide enhanced preventative, acute, or chronic care for patients. These teams may be designed to be provided entirely within a clinic or may be built virtually by linking various providers in a community (AHRQ 2014).

While a comprehensive care team may sound ideal, it is still uncertain what professionals are needed to ensure that the comprehensive needs of patients are met. While various professions (e.g., behavioral health, nursing, and pharmacy) have written about their role in the primary care setting, there have been little data discussing how these teams should be formed, and what their goals are. For example, until recently, behavioral health professions were not consistently recommended as an integral part of the comprehensive care team.

Another issue faced with this new approach is who will pay for multiple providers seeing a patient on the same day. These team approaches may initially be more expensive than standard care, with the hope that they will produce healthier patients and offset future costs. While many have written on payment reform (Rosenthal 2008), there are still no consistent systems of payments, as these vary state by state.

Patient Centered

There has been a shift in the medical community to focus on a relationship-based orientation to health-care delivery. This new focus places the patient and their families as core members of the care team and moves to actively involve them in their treatment planning. It is within the role of health-care providers to support patients and provide them with skills to manage their own care at the level of their choosing (AHRQ 2014).

Patients are supported to better self manage and to take more responsibility for their health. To augment patient-centered care, the AHRQ offers four recommendations to help providers: (1) communicate with patients about the new model of care and what the patient's new role is in the model, (2) promote self-care by helping patients reduce risk factors and help patients with chronic illness create and achieve self-care goals, (3) partner with patients about decision-making by helping reviewing treatment options and aid them in understanding the likely outcomes, (4) improve patient safety, by allowing them access to their records (Peikes, Genevro, Scholle and Torda 2011).

Coordinated Care

Beyond being the setting for which patients receive the majority of their care, the PCMH is also responsible for coordinating care across the broader health-care system. These coordinated services are intended to be delivered in a "stepped-care" manner to match the needs of the patient. For example, a patient being discharged from an emergency room for a suicide attempt may require in-person consultation involving primary care and behavioral health specialists. Other consultations may achieve their goal of enhancing patient's needs with providers or support staff interacting over the phone (Croghan and Brown 2010). It is hypothesized that this coordination is particularly important when patients need to access specialty care or are being discharged from the hospital. By doing this, the PCMH acts as the hub between patients, primary, and specialty care to ensure that needs are met and health-care plans are followed (AHRQ 2014).

Accessible Services

In order to ensure that patients have access to more affordable primary care and rely less on emergency services when urgent needs arise, it is the goal of PCMHs to create short wait times. To accomplish this, PCMHs normally offer enhanced in-person hours (e.g., working past normal business hours), provide around-the-clock telephone access to health-care providers, and use alternative methods of communication such as e-mail (AHRQ 2014).

While it is not explicated how exactly this enhanced accessibility to services should be executed, the National Committee on Quality Assurance's (NCQA) recognition process (described below) offers very clear factors for how agencies are graded. For example, enhanced hours may include being open at 7 a.m. or closing at 8 p.m. or being open on at least two Saturdays during the month.

Quality and Safety

The use of evidence-based practices as well as clinical decision-support tools to guide treatment is a major component of the PCMH. Technologies like electronic health records (EHRs) are to be implemented to help guide decision-making and reduce the potential for error. In order to produce consistent increases in quality of care, it is also recommended that providers engage in performance measurement (e.g., number of patients within a normal blood pressure or blood sugar range). Through the use of this continued commitment to quality improvement (QI), PCMH will be able to provide more effective and safer care to their patients (AHRQ 2014).

It is hypothesized that all five of these functions must be met for primary care to fulfill its role in reducing overall health-care costs and improving the quality of care patients receive (AHRQ 2014). Therefore, creating a PCMH requires a radical shift from traditional primary care settings. This shift has given rise to national recognition processes to ensure that these services are adequately delivered. The following section describes one of these recognition models, designed to ensure the quality and integrity of a PCMH.

Recognition Process of Patient-Centered Medical Homes

Given the amount of new services required for a medical setting to deliver care consistent with the PCMH model, agencies have create national recognition standards. This process is designed to ensure that settings that use the PCMH label actually provide the enhanced services a PCMH is intended to offer. The largest recognition program in the USA, which about 10 % of all primary care clinicians operate under, is through the NCQA (2014). This section provides information on what services the NCQA requires from medical settings to achieve various levels of PCMH recognition status.

History of the Patient-Centered Medical Home Recognition Process

As more data have become available on the utility and practices of PCMH and health-care policies change, the NCQA's PCMH recognition has adapted to ensure that these new sources of information are integrated into practice. As such, the NCQA's PCHM standards have been through four revisions, with the latest in 2014.

The precursor to the PCMH was launched in 2003, under the name of Physician Practice Connections (PPC). The PPC model emphasized the use of information technologies (IT) and systematic change to reduce the amount of medical errors that occurred from standard practices, increase the use of evidence-based care, and ensure follow-up with patients and other medical providers (NCAQ 2014).

In 2007, the joint PCMH principles were released, and in 2008, the NCQA followed with its first standards of a PCMH, which included an emphasis on the ongoing personal relationship with physicians, a team-based approach to care, care coordination, and a focus on quality and safety. There have been two updates since the 2008 release of PCMH standards, one in 2011 and the latest in 2014. Each update has "raised the bar" in order to ensure that patients receive the highest quality of care. For example, the 2014 updates have included more emphasis on integration of behavioral health care and overall team-based approaches, focused case management for high-needs populations, and more QI initiatives (NCQA 2014). The following information reflects the NCQA's 2014 Standards and Guidelines for medication settings applying for PCMH recognition.

Who is Eligible for Patient-Centered Medical Home Recognition

As denoted by the NCQA, the PCMH recognition program is a practice-based evaluation for clinicians, who may be doctors of medicine, doctors of osteopathy, advanced practice registered nurses, or physician assistants who focus on primary care specialties. Those who do not offer primary care services are not eligible for PCMH recognition. Single practices and multisite systems (i.e., systems that involve three or more sites) are eligible for the PCMH recognition (NCQA 2014).

The National Committee on Quality Assurance's Standards of a Patient-Centered Medical Home

As of 2014, there are six PCMH program standards that are provided by the NCQA. Each of these standards was created in order to target key aspects of primary care. These general standards are broken down by elements that include specific details about performance expectations. Each element is further broken down into factors, which are specific services that the element is measured by. There are some key factors, referred to as "critical factors," that are required for settings to receive more than minimal, or any point, for the specific element. Table 1.1 lists all of the NCQA standards, their elements, and how many points each standard is worth.

Must-Pass Elements

Beyond the six standards, the NCQA lists six must-pass elements that are considered essential components of the PCMH. To achieve PCMH recognition on any

Table 1.1 Patient-centered medical home (PCMH) standards. (NCQA 2014)

Standard	Elements	Point value
PCMH 1: Patient-centered access	A. Patient-centered appointment access B. 24/7 access to clinical advice C. Electronic access	10 points
PCMH 2: Team-based care	A. Continuity B. Medical home responsibilities C. Culturally and linguistically appropriate services D. The practice team	12 points
PCMH 3: Population health management	A. Patient information B. Clinical data C. Comprehensive health assessment D. Use data for population management E. Implement evidence-based decision support	20 points
PCMH 4: Care management and support	A. Identify patients for care management B. Care planning and self-care support C. Medication management D. Use electronic prescribing E. Support self-care and shared decision-making	20 points
PCMH 5: Care coordination and care transitions	A. Test tracking and follow-up B. Referral tracking and follow-up C. Coordinate care transitions	18 points
PCMH 6: Performance measurement and quality improvement	A. Measure clinical quality performance B. Measure resource use and care coordination C. Measure patient/family experience D. Implement continuous quality improvement E. Demonstrate continuous quality improvement F. Report performance G. Use certified EHR technology	20 points

EHR electronic health record

level requires a minimum score of 50 % on all of these six elements. Table 1.2 lists all six of the must-pass elements as well as the critical factor and required number to pass.

Levels of Accreditation

The NCQA recognizes three levels of PCMH status. Each level indicates the degree to which a medical setting provides the services indicated by the standards. As mentioned earlier, points are awarded to settings based on the number of factors that a medical setting is able to provide for each element listed. The determination of a setting's level is based on the points earned by a medical setting. As mentioned earlier, regardless of the PCMH level, NCQA recognition requires that all settings meet the six must-pass elements in order to achieve any status. Table 1.3 provides the number of points necessary to achieve a certain PCMH level.

Table 1.2 Must-pass elements (NCQA 2014)

Must-pass elements	Factors	Minimum number of factors needed to achieve 50 % pass rate
PCMH 1: Patient-centered appointment access	1. Providing same-day appointments for routine and urgent care[a] 2. Providing routine and urgent-care appointments outside regular business hours 3. Proving alternative types of clinical encounters 4. Availability of appointments 5. Monitoring no-show rates 6. Acting on identified opportunities to improve access	Two factors including critical factor
PCMH 2: The practice team	1. Defining roles for clinical and nonclinical team members 2. Identifying the team structure and the staff who lead and sustain team-based care 3. Holding schedule patient care team meetings or structured communication process focused on individual patient care[a] 4. Using standing orders for services 5. Training and assigning members of the care team to coordinate care for individual patients 6. Training and assigning members of the care team to support patients/families/caregivers in self-management, self-efficacy, and behavior change 7. Training and assigning members of the care team to manage the patient population 8. Holding scheduled team meetings to address practice functioning 9. Involving care team staff in the practice's performance evaluation and quality improvement activities 10. Involving patients/families/caregivers in quality improvement activities or on the practice's advisory council	Five to seven factors including critical factor.
PCMH 3: Use data for population management	At least annually, the practice proactively identifies populations of patients and reminds them, or their families, or needed care based on patient information, clinical data, health assessments, and evidence-based guidelines including: At least two different preventive care services At least two different immunizations At least three different chronic or acute care services Patients not recently seen by the practice Medication monitoring or alert	Two factors
PCHM 4: Care planning and self-care support	The care team and patient/family/caregiver collaborate to develop and update an individual care plan that includes the following features for at least 75 % of patients identified for care management: Incorporates patient preferences and functional/lifestyle goals Identifies treatment goals Assesses and addresses potential barriers to meeting goals Includes a self-management plan In provided in writing to the patient	Three factors

Table 1.2 (continued)

Must-pass elements	Factors	Minimum number of factors needed to achieve 50 % pass rate
PCMH 5: Referral tracking and follow-up	1. Considers available performance information on consultants/specialists when making referral recommendations 2. Maintains formal and informal agreements with a subset of specialists based on established criteria 3. Maintains agreements with behavioral health-care providers 4. Integrates behavioral health-care providers within the practice site 5. Gives the consultant or specialists the clinical question, the required timing, and the type of referral 6. Gives the consultant or specialists pertinent demographic and clinical data, including test results and current care plan 7. Has the capacity for electronic exchange of key clinical information and provides an electronic summary of care record to another provider form more than 50 % of referrals 8. Tracks referrals until the consultant or specialist's report is available flagging and following up on overdue reports[a] 9. Documents comanagement arrangements in the patient's medical record 10. Asks patients/families about self-referrals and requesting reports form	Four to six factors including critical factor
PCMH 6: Implement continuous quality improvement	1. Set goals and analyze at least three quality measures from element A 2. Act to improve at least three clinical quality measures element A 3. Set goals and analyze at least one measure from element B 4. Act to improve at least one measure from element B 5. Set goals and analyze at least one patient experience measure from element C 6. Act to improve at least one patient experience measure from element C Set goals and address at least one identified disparity in care/service for identified vulnerable population	Five factors

PCMH patient-centered medical home

[a] Denotes critical factor

Table 1.3 Patient-centered medical home-level requirements

PCMH level	Points required
Level 1	35–59
Level 2	60–84
Level 3	85–100

PCMH patient-centered medical home

Outcome Data of Patient-Centered Medical Home

Given the intend goals of PCMH, multiple studies have focused on outcomes such as quality of care delivered, cost of care, patients experience of care, and the experience of professionals working in multidisciplinary teams. This section provides a brief overview of the results of these studies.

Quality of Care

An extensive literature conducted by Zutshi et al. (2014) investigating improvements to quality of care considered three distinct factors: processes of care, health outcomes, and mortality. They concluded of three rigorous evaluations of PCMH processes (i.e., studies that used randomly controlled trials and large health-care settings), only one study showed increased rates of medication use throughout a 2-year study, and increase use of psychotherapy or specialty mental health care during the first year but not the second. The other studies either did not show statistically significant changes in processes of care (e.g., increased rates of medication use, use of psychotherapy, and decreased hospitalizations) or statistical significance did not account for the clustered nature of the data making the results unclear. However, another study that evaluated PCMHs and process of care, the National Demonstration Project (NDP), concluded that after 26 months, the PCMH model helped improve the delivery of preventive services and chronic disease care (Jaen et al. 2010).

In regard to health-care outcomes, two studies showed improvements in some or all of the health measures. For example, the one study indicated reduced depression symptoms, improved overall quality of life, reduced overall functional impairment, and improvement in general health status over the 2-year course of the study (Zutshi et al. 2014). The other study indicated mixed results, with statically significant improvements on four of the eight Short Form (SF)-36 scales. Nonsignificant results in this study included improvements to activities of daily living and days in bed.

While these results are promising, another study investigating the impact of PCMH models on health outcomes did not produce any favorable results. For example, the data on seven of the eight scales on the SF-36 indicated no statistically significant change. The data on the final scale on the SF-36 indicated a statically significant *deterioration*. Therefore, the data are mixed on the impact of PCMH on health outcomes.

Finally, PCMH service effects on mortality did not produce statistically significant results. However, it is unclear whether or not this result is a function of PCMH services not changing care, or there was not enough time for mortality rates to be effected (Zutshi et al. 2014).

Cost

Reducing overall health-care costs by shifting care from specialized and emergency care and moving it into the primary care setting is one of the main hypothesized goals of the PCMH. However, current studies that examine the overall cost, hospital use, and emergency department use when PCMH systems are employed have produced mixed results.

In regard to overall costs, multiple studies produced an increase in cost by employing PCMH practices. For example, one study indicated an increase in cost of care by 12 % after the first year. Another study indicated an increase in cost of 28 % among all patients and 46 % among low-risk patients after the first year. The data from this study indicated that cost savings of 23 % were realized for high-risk patients during the third year, which was able to offset the still present 19 % increased cost of care for low-risk patients. Other studies reported no statistical difference in costs (Zutshi et al. 2014).

Hospital use across multiple studies indicates some positive results in the reduction of hospital stays and readmissions. One study indicated reduced hospitalization by 18 % and reduced readmissions by 36 % across all patients. Another study indicated a reduction in hospitalizations for high-risk subgroups for the second (44 %) and third (40 %) year of their study. Another study indicated a 22 % reduction of readmissions during the first 6 months, but these results were no longer significant after the next 6 months were included (Zutshi et al. 2014).

Emergency department also use produced mixed results. One study indicated a 24 % reduction among all patients included in the study and a 35 % reduction among high-risk patients in the second year of the PCMH system being used. Other studies did not produce statistically significant result in regard to use of emergency department use (Zutshi et al.2014).

Experience of Care

Patient centeredness is a defining characteristic of the PCMH. It is the goal of PCMHs to have patients and their families help create individualized treatment plans and be one of the primary drivers in their health-care experience. Therefore, measuring whether or not PCMHs influence the experience of care is an important metric.

In regard to patient experience, multiple studies show improvements in various aspects of care. For example, one study showed improved satisfaction with depression care after 3 months and again at 12 months. Another study indicated improvements in veterans' access to care, interpersonal experience, technical quality, communication. However, satisfaction with care was not significantly different (Zutshi et al. 2014). This result of not changing patient satisfaction over multiple domains (i.e., empowerment, general health status, and satisfaction with service relationship) was also replicated in the NDP that evaluated 36 practices over 26 months (Jaen et al. 2010).

Family and caregiver experience also produced mostly positive or uncertain results. One study indicated improved ratings of quality of care received by loved ones. Beyond satisfaction, one of the two measures assessing caregiver burden also showed statistically significant reduction (Zutshi et al. 2014).

Professional Experience

Professional experience is also hypothesized to change with the use of the PCMH model. By using new systems, like enhanced collaborative care teams, providers may focus on areas that they specialize in, and by improving quality of care for patients, increase their own personal work satisfaction.

In the one study described by Zutshi et al. (2014), there were no statistically significant difference between intervention and control groups in regard to satisfaction with care management, time spent on chronic care, knowledge of patients' personal circumstances, and coordination of care. There were also uncertain statistical results in regard to communication and knowledge.

However, professional experience in new PCMH was an area of concern and caution (Nutting et al. 2009). Change fatigue from the high-paced and new demands to meet the new model of care can be result in staff burnout and high rates of turnover if not properly monitored, and changes in practices are made to fast (Nutting et al. 2009). It is also recommended that physicians be assisted with the professional transformation needed to effectively operate with practices like working with practice teams and patient partnering (Nutting et al. 2009).

All of the preliminary results for PCMH within the literature review conducted by Zutshi et al. (2014) show mixed results across the various aspects that the new system is hypothesized to improve. It is important to note that there are smaller studies or studies that do not use rigorous methods of testing that indicate positive results for some of these factors. However, many authors have indicated that it is still too soon to come to any strong conclusions of whether or not PCMH work as intended, and that the model still holds much promise for addressing many of the health-care issues currently being faced in the USA.

The Role of Behavioral Health Providers

The role of a behavioral health provider in a PCMH is unclear. There are many conceptualizations of a PCMH that do have a behavioral health provider as a member of the core team. There are no studies showing the differential outcomes when a behavioral health provider is included versus omitted. Certainly, these studies need to be conducted. However, one study concluded that the delays in external referrals for psychiatric and psychological care adversely affected outcomes of a PCMH.

There are many technical questions that need to be answered related to the inclusion of a behavioral health provider in a PCMH including:

1. What kind or kinds of behavioral health providers—psychiatrists, psychologists, social workers, marriage, family therapists, etc.?
2. What kind or kinds of behavioral health providers—psychiatrists, psychologists, social workers, marriage, family therapists, etc.?
3. What exactly are the skill sets/core competencies of these behavioral health providers? Do they need specialized skill sets in order to function optimally in a PCMH, for example, in working in a team, in brief interventions and assessments, in medical psychology?
4. What full-time equivalency ratios are needed, for example, one full-time behavioral health provider for every *x* primary care medical provider?
5. Are there sufficient behavioral health providers currently available, or is there a workforce shortage of these (see O'Donohue and Maragakis 2014 for an argument that there is a significant workforce shortage)? If there is such a national workforce shortage, what can be done about this?
6. What are the optimal clinical processes for a behavioral health provider in a PCMH? What kinds of patients or problems should be prioritized? When do they treat internally versus refer? What behavioral health screens, if any, ought to be used? What are the evidence-based assessment and treatment protocols for the wide variety of clinical problems addressed? What behavioral health outcome variables ought to be measured? What is the optimal balance between preventative services versus clinical services? What is the optimal balance between treating typical mental disorders such as depression versus treating medical problems such as chronic pain or treatment nonadherence? What patients need more intensive team-based treatment?
7. How is the inclusion of a behavioral health provider in a PCMH to be financed? How is their billing to work? How can their role in contributing to final overall costs be parsed?
8. How are operational processes and work flows to be defined? Is the EHR optimal? Are there special procedures for dealing with sensitive behavioral health information? What is the role of the behavioral health provider in producing improved patient-centered care?
9. Finally, how do different conceptualizations of all these parameters contribute to the desired outcomes of a PCHM?

Conclusions

The PCMH should be viewed as a hypothesis not a conclusion. Epistemically, the positive outcomes of PCMHs are not well-supported facts: There are too few data showing that PCMHs achieves its aims regarding cost, effectiveness, patient centeredness, access, and safety, and it is fair to say that currently some data that show they do not. However, it is clear that health-care delivery needs reform and the aspirations of the PCMH appear sound.

One common mistake in health care is to treat an attractive notion as a well-corroborated fact. It might be argued that this is even happening with PCMHs. It has become a strong movement: It at times is even viewed as a necessity. However, the data—or in other words—measured experience—do not currently justify such a strong commitment—too much is currently unknown. It is recommended that all proceed with some caution. Reforms can fail or disappoint.

We suggest that it is critical that a meta-position of science and QI be taken, and this meta-position is currently more important than any of the specifics of a PCMH. The view needs to be: We need to study the causal processes needed to actually instantiate the desired goals of the PCMH, and more specifically, we need to understand the role of a behavioral health provider (variously conceived) in producing these or failing to produce these. We conjecture that there are numerous technological problems that need to be solved in order for these aims to be instantiated, and it would be a mistake for these not to be explicated and treated as challenges to be solved.

We suggest that funding sources orient to these technological problems and explicitly call for proposals to study solutions. We suggest that journals produce special issues and prioritize papers that attempt to solve these. We also suggest that these be considered when students are looking for dissertation topics. A slight rephrasing of Gordon Paul's ultimate clinical question is relevant here: "What treatment, by whom, is most effective for this individual, with that specific problem, under which set of circumstances, and how does it come about?" (Paul 1969, p. 44). We might modify this: What outcomes (e.g., cost reductions), by what team, are most effective for this individual patient, with what problems, under which set of circumstances, and how does it come about? This question is properly nuanced but requires a lot of programmatic data collection to yield data to answer it.

Thus, we think that "research projects" are important but will be insufficient to provide the data necessary to answer this question. We conclude therefore that all PCMHs be conducted in the context of systematic QI programs (see Maragakis and O'Donohue 2014 in press for more information on QI and behavioral health). Because so little is currently known, the QI approach is ideal: Conjectures are tested in actual practice, and then reforms are hypothesized, and the testing cycle begins again. There are so many parameters that need evaluation that this is the only orientation that may be sufficient to produce the needed data. We believe that doctorate-level behavioral health providers have the capacity to help the team design and implement QI programs—however, it is also fair to say that typically, the doctorate-level training has too little emphasis on QI and too much on research designs that are less practical. Part of the agenda is to improve the competency of all team members to work within a QI system.

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Part II
An Overview of Integrated Health Care and the Patient-Centered Medical Home

Chapter 2

Integrated Care and Specialty Behavioral Health Care in the Patient-Centered Medical Home

Robynne M. Lute and Lesley Manson

Integrated Care and Specialty Behavioral Health Care in the Patient-Centered Medical Home

Integrated health care represents the contemporary recognition that holistic, whole-person, and patient-centered medical home (PCMH) services are effective in terms of improved treatment outcomes for mental health (MH), substance abuse, and physical illness (Jaen et al. 2010; Butler et al. 2008), as well as more cost-effective for both patients and health-care systems. These benefits are obtained, for instance, through a reduction in expensive emergency department visits (Chaiyachati et al. 2014) and overutilization of health-care services (Kurdyak et al. 2014) in service delivery settings with integrated physical health primary care (PC) and behavioral health services. In fact, evidence suggests that the myriad benefits of integrated care (IC) models, and more specifically, PCMH models encompass additional positive outcomes including increased consumer satisfaction, decreased provider burnout, increased access to care, improved patient adherence to treatment recommendations, and reduced stigma toward accessing behavioral health care (Blount 2003). Recent federal efforts toward health-care reform including policy changes such as those enacted through the Patient Protection and Affordable Care Act (ACA), as well as systems change reforms like PCMHs, dovetail nicely with the major paradigmatic shifts in health-care service conceptualization and provision occurring throughout PC and behavioral health (McDaniel and deGruy 2014).

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W. O’Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_2

IC: A Brief History

In the Social Transformation of American Medicine (1982), Paul Starr traces the historical growth of modern medicine (i.e., roughly 1760 forward) along two paths: "the rise of professional sovereignty" and "the transformation of medicine into an industry" (pp. ix). Together, these developmental tracks set broad and lasting foundations for present-day health-care systems in several ways. The unchecked development of increasingly specialized providers within the health-care system had the unfortunate effect of underscoring a tendency in health care for treatment to be rendered in "parts" to patients, as if patients themselves were able to be partitioned and as if treating a given patient's diabetes in one setting and his depression in another reflected an actual lack of interdependence and reciprocity among the endocrine and neuropsychiatric systems within a single patient, rather than these separations representing an artifact of outdated paradigms that still dominate modern approaches to health-care training, service delivery, and even payment and reimbursement policies. These carve-outs in health care perpetuate a fragmented health-care system that encourages passive and generally uninformed participation of patients in a complex system that is expensive and unable to meet their needs.

Specialized treatment and/or treatment providers for each of a patient's problems or symptoms, as opposed to a whole-person approach that presumes irreducibility—or at the very least, interconnectivity—among bodily and behavioral systems within a given human being may have very old roots. The seventeenth-century metaphysical dualism popularized by Descartes' "cogito ergo sum" promulgated the notion that the mind and the body are distinctly separate entities within a given person; (American) medicine embraced this dualism in force with respect to the separation of physical disease/health and mental disease/health. For centuries, medicine existed under the reign of the biomedical model, a reductionistic model of disease that bypassed nearly all levels of systemic and holistic considerations of a patient's presentation (e.g., the impact of psychosocial stressors on mental or physical illness; the patient's built environment or socioeconomic status) in lieu of reducible molecular processes that could, hypothetically, be treated with "magic bullet" cures. The biomedical model produced superb results during much of the twentieth century with respect to several areas, such as combating diseases caused by germs and/or poor hygiene, providing acute pain control, and successfully containing viruses (e.g., polio) with mass vaccination and prevention efforts. In the present day, however, the vast majority of disease-related morbidity and mortality is a result of chronic, comorbid conditions that do not have simple or linear causality and frankly cannot be effectively treated with a fragmented treatment system (McDaniel and deGruy III 2014).

In some cases, the fragmentation and specialization of health care are so extreme that even if providers of different specialties in separate care facilities wanted to consult or share information about the same patient; many times they are effectively not even speaking the same language when conceptualizing and communicating about patient care. George Engel aptly and cogently addressed this historical and incomplete approach to medical care in his seminal work elucidating the biopsychosocial model of care in the 1970s (Engel 1977). While Engel's model gained much ground over the past four plus decades in many circles and provider systems, the largest system of patient care in the USA is the PC medical setting, which in many ways maintains allegiance to the biomedical model. Given that the PC system appears particularly essential to the health of a given population (reference), continued efforts to broaden the scope of training for medical and behavioral health professionals (BHPs) to include the ability to deliver care in a comingled, shared fashion are vital.

PC generally followed (and in the majority of cases, still follows) the siloed model of care until early efforts at integrating medical and behavioral health care emerged in recent decades. The previously mentioned disadvantages of fractioned care plague the current health-care environment, such that in the USA, unprecedented costs and increased health-care expenditures have not produced commensurate improved treatment outcomes. The potential positive health and wellness outcomes linked to engagement with a PC clinic are limited in many cases by a myopic approach to diagnosis, assessment, and treatment that summarily dismisses attention to the care of mental, behavioral, and chronic health conditions. Fortunately, on the heels of Engel's seminal explication of and demand for a theoretical paradigm shift in medical treatment, practitioners and researchers eager to improve healthcare outcomes began efforts to explore and implement integrated care services, particularly in the primary care setting. For example, early pioneers of PC and behavioral health integration in Washington state during the 1990s developed care models focused on depression treatment in the PC setting. This work represented a population-based, epidemiologically sound model of care for depression that provided "the best care for the most patients most of the time" (Quirk et al. (2000), pp. 82). While a small percentage of depressed patients may ultimately require referral to specialty care outside of (or in concert with) the PC setting, in general, the majority of the population will not require such services in order to improve functionality and to decrease symptomology.

The Case for PC

The majority of patients with MH , substance abuse, and behavioral health conditions seek treatment in the PC setting, and accordingly, most of the treatment occurs in these settings as well (for instance, PC providers (PCPs) provide more psychotropic medications every year in the USA than do psychiatrists). Generally, patients prefer treatment for behavioral health issues at their PCP's office, as noted earlier, for multiple reasons including the convenience, reduced wait times, decreased stigma, and increased trust while accessing a broad array of services in a familiar and trusted (i.e., PC) setting Byrd et al. 2005. Major MH concerns and psychosocial stressors interfere with health status in a complex fashion. For example, mental illness and stress issues, including anxiety and depression, tend to worsen health outcomes; indirectly, these issues negatively impact adherence to treatment regimens (and are thus implicated in the course and prognosis of even the most "purely biological" of illnesses). Even when PCPs have the training and/or awareness to refer a patient for specialty behavioral care, the majority of patients do not follow through with these referrals. Furthermore, a case can be made that in systems lacking coordination and integration, treatment as usual does not translate into acceptable outcomes regardless of where it occurs (i.e., primary or specialty setting; see, for instance, Quirk et al. (2000)).

Typically, most medical professionals are not sufficiently trained in behavioral or MH treatment and desire and appreciate the support of BHPs (psychologists, licensed social workers, care managers) in patient care. In particular, the shift from acute illnesses toward chronic conditions as the nation's primary causes of morbidity and mortality (chronic conditions which are not adequately managed with traditional biomedical approaches) and the associated recognition of the necessity of behavioral, lifestyle, psychoeducational, and motivational interventions to improve overall health and wellness have reinforced the necessity for BHPs in the PC setting (Collaborative Family Health Care Association, CHFA; Peterson et al. 2014). Mokdad et al. (2004) examined modifiable factors that contributed to death in the USA: Nearly, half (48.2 %) of all deaths were explained by a limited number of largely preventable behaviors (i.e., by modifiable risk factors). Additionally, individuals with mental and substance abuse disorders may die decades earlier than the average person (Substance Abuse and Mental Health Services Administration (SAMHSA), n.d.). MH service use is underutilized but still overburdened with long waits and disproportionately so in minority populations, which may be a function of how distress is interpreted, defined, and communicated (Zuvekas and Fleishman 2008). PCMHs are defined to be culturally sensitive, to provide integrated, coordinated care, and to include social and community resources for health improvement (Peikes et al. 2011). PCMHs may reduce health disparities for racial and ethnic minorities (Petersen et al. 2011; Blount 2003; Sanchez et al. (2012) as well as improve access to care in rural populations (Smalley et al. 2012)). In discussing the multiple barriers to care for underserved, rural, and frontier populations, the case for medical and behavioral health integration is noted to positively impact barriers related to the “accessibility, affordability, acceptability, and availability” of behavioral health services (Smalley et al. 2012).

Conceptually speaking, the term “primary care” may be defined by some as simply put, the first point of contact with the health-care system (literally, a *primary* entrance). With this broad definition, PC services and settings may then range the full gamut from an acute illness or injury with an unplanned and costly emergency department visit to a scheduled, preventative care visit with one's own family physician, the latter of whom typically sees the patient as well as his or her family members for a wide variety of concerns throughout the life span. A more helpful and targeted definition of PC from the Institute of Medicine (IOM) defines “PC” as the provision of integrated, accessible health-care services by clinicians who are accountable for addressing a large majority of personal health needs, developing a sustained partnership with patients and practicing in the context of family and community” (IOM 2001).

IC typically occurs in PC settings. Bruce Chafee (2009) defines IC as such health-care service delivery models that integrate behavioral health providers

(BHPs/BHCs) into PC and/or specialty care settings and operations. BHPs are frequently colocated in medical clinics, and their scheduling and practice patterns may be altered from those of specialty behavioral health providers (SBHP/SMHP), for example, seeing patients in brief (15–20 min) sessions versus the traditional (45–50 min) psychotherapy visits.

A more concise definition from the federal Agency for Healthcare Research and Quality (AHRQ 2008): "Integrated care occurs when MH specialty and general medical care providers work together to address both the physical and MH needs of their patients (p. 1)."

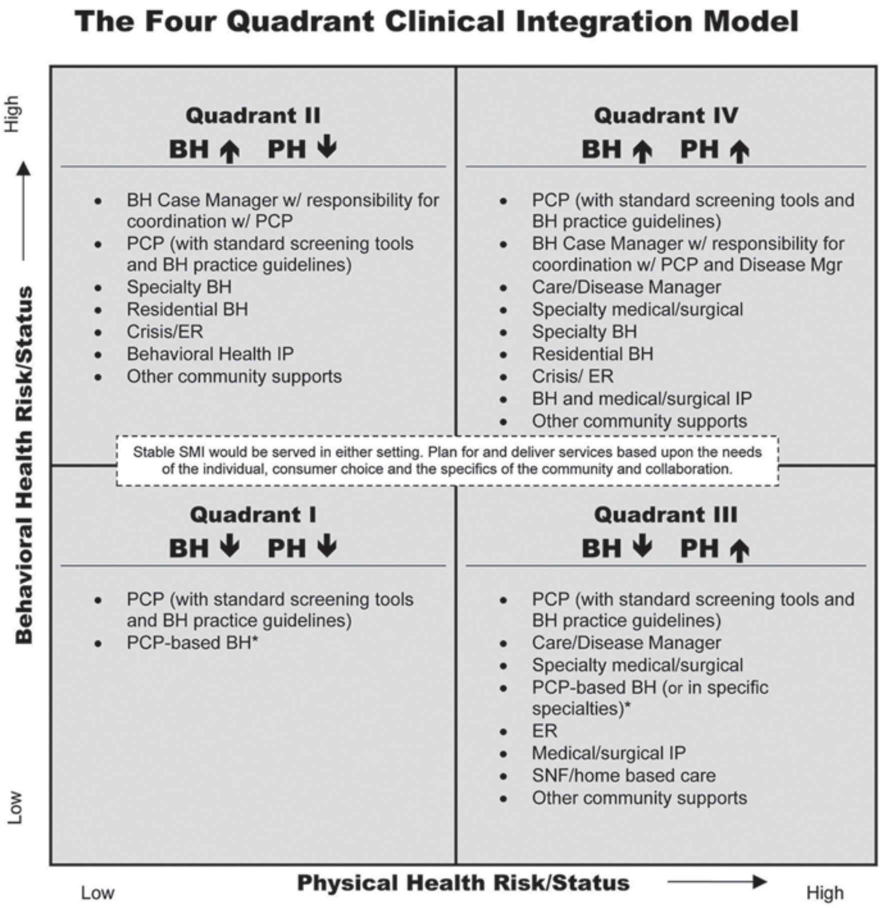
Specialty behavioral health care denotes the traditional care delivery model for behavioral health services as a separate medical specialty, typically initiated by either the patient or by referral from PC physicians; its associated services regularly include 60–90-minute initial diagnostic evaluations, the traditional "50-min hour" individual psychotherapy session, and group psychotherapy (Chafee 2009).

At this point in time, few believe that the mind and body are separate and should be treated as such. Some physicians may still hold this premise; however, with appropriate education and support, these individuals transition to what is accepted as common best practice knowledge. It is common knowledge that one's genetics and biology, mental and emotional health, and behaviors interact in complex and dynamic ways within the embedded context of one's social, socioeconomic, and physical environment. Recognizing these interactions between internal and external systems in the development of illness or disease within a given patient subsequently results in the need for a parallel system of care that provides treatment that also considers and addresses these systemic and contextual features. This method of providing treatment is the basis of evidence-based medicine.

Models of IC

Multiple models of integrated and collaborative care exist in the literature and in practice, and a full elucidation of each individual model is beyond the scope of this chapter. However, a review of some of the major or seminal programs is certainly worth discussion here. Additionally, core components shared by successful integrated programs, as well as functional pathways of care, also warrant consideration. Broadly speaking, models tend to differ across both system design (e.g., type of providers comprising the interdisciplinary team) and service delivery elements (e.g., integration of processes of care; Lambert and Gale 2014).

The widely adopted four-quadrant model is a population-based planning tool for health- and mental-health-related services developed by Barbara Mauer and the National Council for Community Behavioral Healthcare (Mauer 2003). The four-quadrant model assists providers with treatment decisions for individual patients by providing guidelines for assigning treatment location and responsibility between integrated and specialty services. See Fig. 2.1 which illustrates the four-quardrant model.



*PCP-based BH provider might work for the PCP organization, a specialty BH provider, or as an individual practitioner, is competent in both MH and SA assessment and treatment

Fig. 2.1 The four quadrant clinical integration model (NCCBH 2003)

Specifically, this model classifies levels of integration based on two dimensions: PC complexity and risk, and MH and/or substance abuse complexity and risk (SAMSHA–HRSA Center for Integrated Healthcare Solutions). Typically, individuals who fall into quadrant I (low BH/PH) and quadrant III (low BH/high PH) are often served in integrated behavioral health settings, although quadrant III patients may also need specialized medical treatment at times (e.g., emergency room). Individuals who fall into these quadrants (I and III) are often served in integrated behavioral health due to the low behavioral complexity and risk, common mild-to-moderate symptoms and functional presentations. The target for integrated BHPs is to positively impact overall health and wellness with conjunctive medical consultative with these patients and self-management support services. Quadrant I and III may also include of individuals with more serious and persistent mental illnesses dependent on functioning and presentation. While SBHPs most often serve and are allocated to quadrant II: high behavioral health, low physical health complexity/risk and quadrant IV: high behavioral, high physical health complexity/risk. Individuals who meet these quadrants are often served in specialty MH or reverse integration sites (reverse integration sites are sites which are primary MH and incorporate medical services) due to the common symptoms and functional presentations of persistent and severe mental illness, children and youth with serious emotional disturbances or conduct, co-occurring complex medical conditions, and requiring supportive services of case managers, disease managers, crisis care, inpatient care for medical or MH needs, and/or home health needs. Individuals who meet these quadrants are often served in integrated behavioral health due to the common symptoms and functional presentations of generalized mild to moderate anxiety and depression, and low to high complexity and risk regarding medical health conditions, with evidence of behavioral concerns needing addressing, which will positively impact overall health and wellness and conjunctive consultative and self-management support services. With appropriate assessment and screening of patients' physical, mental, behavioral, and substance abuse symptoms and needs, the most suitable referrals for care may be provided.

Doherty et al. (1996) developed a five-level classification system of mental and physical health-care integration: (1) separate systems and facilities, (2) basic collaboration from a distance, (3) basic collaboration on site, (4) close collaboration in a partially integrated system, and (5) fully integrated system.

Utilizing an imaginary continuum, one can imagine "no collaboration among service providers" on one end and "fully integrated service provision" on the other. No collaboration, of course, represents significant divisions in treatment and service delivery, which each "part" of a given individual treated by a different type of provider, at a different location, with no communication or shared treatment planning among providers. In this case, the PCP may serve as a "gatekeeper," who refers the patient to specialty services (e.g., specialty MH) as deemed appropriate. In some cases, patients may self-refer to SMHPs; in either case, this model is grounded in the limited biomedical model where specialty care is delivered in a disconnected fashion from PC.

With Doherty et al.'s model, moving along the proposed continuum toward increasing integration is "basic collaboration from a distance." This model is similar to the referral model above in that service providers do not routinely share in treatment planning. With this level of integration, however, there is at least basic communication among service providers when needed, although the team members do not share colocated space. Level 3 shares these same aspects of basic collaboration, yet the interprofessional providers are located in the same physical location. Of note, even with shared communication and shared location among providers, these services are still a long way from full integration and reflect more of an SMH model rather than addressing, for example, a patient's behavioral health needs from a functional perspective, or fully incorporating the biopsychosocial model of assessment, diagnosis, and treatment.

As systems move toward increased multidisciplinary IC, one finds models of both partially and fully integrated PC and behavioral health services. These models represent care provision that is theoretically driven by the biopsychosocial model of care, which emphasizes the reciprocal interactions among a given patient's biological, behavioral, psychological, social, cultural, spiritual, environmental, and economic circumstances, and health-care providers and systems factors in the development, maintenance, and exacerbation of disease and illness. In IC models, PCPs and BHPs are located in the same area of a clinic, and they collaborate and consult in a seamless fashion to provide patients with whole-person primary, behavioral, and MH treatment in a single PC setting. Treatment planning is completed in a collaborative fashion as well, meaning that PCPs, BHPs, and other team members (e.g., nurses, case managers) work together seamlessly to address patients' presenting complaints.

Wagner's chronic care model describes and emphasizes the need for integrated services with respect to chronic illnesses, in particular, depression (Coleman et al. 2009). Recognizing the massive rates and still burgeoning development of chronic physical and mental illnesses in the USA, along with the associated disproportionately high medical costs and utilization, provider burnout, and high rates of patient morbidity and mortality, this model aims to use integration as a means of improving the quality of service provision and even potentially reducing or preventing the exponential rates of chronic illness in America (Bodenheimer et al. 2009). The model is well grounded in systems principles and includes an "informed, activated patient" as a critical component of effective chronic care treatment. The contrast between the outdated model in which a given patient identifies as a passive recipient of medical treatment provided by an expert authority, and the notion of "activated and engaged patients" could not be more stark. Current policy initiatives toward the development of PCMHs in which patients are, quite literally, at the center of care vis-à-vis decision making for themselves and for the health-care systems (Peikes et al. 2011), support Wagner's model.

Patient-Centered Medical Homes

The world of PC was radically changed when the joint principles of the PCHM was introduced in 2007. These principles helped to define the fundamental features of a fully IC team for the delivery of PC services. The PCMH model of care is aligned with person-centered, coordinated, continuous, and comprehensive service delivery, addressing a person's whole health-care needs in a culturally competent manner. The success and proliferation of this model are underscored by the Patient Protection and ACA (ACA 2010), which further led the health-care industry toward health homes and IC coordination. The development of PCMH concepts and integrated health-care services has decreased the delivery of fragmented, siloed care and demonstrated improved patient satisfaction and health outcomes, all while decreasing costs ensuring the commitment and attainment of the triple aim (Paustian et al. 2014). To succeed, these models must establish IC teams of health professionals, care coordination and information sharing, and health information technology for quality improvement and tracking of service delivery (National Committee on Quality Assurance 2014; Matthews 2013).

The PCMH model is based on the premise of comprehensive, IC coordination, and service delivery while maximizing health outcomes. Although not clearly defined by PCMH, the care team is typically described as a partnership, consisted of the patient, the patient's family and/or support network, a personal physician (PCP), mid-level medical professionals, nursing staff, medical assistants, and behavioral team members (inclusive of behavioral health, case managers, dieticians, and/or health coaches). This team advocates for and supports the patient in receiving high-quality, coordinated care from a variety of medical and health professionals working to the full extent of their training. In addition, this expansion to team-based care assists and encourages medical practices to develop and expand the roles of other medical staff members, such as front-office staff to assist in the role of population health management and care delivery. Researchers have found common improvements in the delivery of coordinated care within self-management and outcomes, cost savings and containment, and decreased specialty, emergency room, and hospital admissions (Ackroyd and Wexler 2014; Cooley et al. 2009; Flottemesch et al. 2012; Graham et al. 2014; Nielson et al. 2012; Paustian et al. 2014). The National Committee for Quality Assurance (NCQA) leads practices toward PCMH accreditation, and in 2014, "raised the bar" toward a more refined evolution of practice standards, which emphasized behavioral heath's role in PCMH (National Committee on Quality Assurance 2014). Behavioral health team members are becoming even more essential in the medical care team due to their adaptability, flexibility, interpersonal communication skills, and knowledge and application of evidence-based practices, behavioral management, solution focused care, and assessment of biopsychosocial care needs. Team-based care is leading to improved patient outcomes, patient satisfaction, provider satisfaction, and quality of data reporting which may lead to higher levels of reimbursement (Bitton et al. 2012; Korda and Eldridge 2011).

Behavioral Health Providers in Practice

As BHPs engage in collaboration within the health system, their focus is on the mind–body–behavior connection and providing brief, solution-focused assessment, and intervention. BHPs utilize a multimodal approach to assessment and intervention developed with the care team delivery system in mind and focused on effective consultation, health promotion, symptom mitigation, and functional improvement (Hunter et al. 2009; O'Donohue and James, 2009; Robinson and Reiter 2007). BHPs may direct consultative care to the physician, care team, and/or patient. In addition, BHPs may provide individualized and group intervention and assessment. Consultation, individualized, and group care typically include skill development for effective management of medical, behavioral, or emotional difficulties through behavior change plans, lifestyle modification, resource building, and targeted person centered, culturally competent, brief interventions (Hunter et al. 2009; O'Donohue and James 2009; Robinson and Reiter 2007).

BHPs typically demonstrate proficiency and use of the following therapeutic modalities, but not limited to cognitive-behavioral therapy, solution-focused therapy, problem-solving therapy, goal setting, motivational interviewing, mindfulness, relaxation training, biofeedback, rational emotive behavioral therapy, acceptance and commitment therapy, behavioral analysis, and other specific evidence-based treatments (Hunter et al. 2009; Funderburk et al. 2011; O'Donohue and James 2009; Robinson et al. 2010; Robinson and Reiter 2007; Rollnick et al. 2008; Weisberg and Magidson 2014). Therapeutic services within IC typically follow a 30-min session model, averaging 1–4 sessions. These sessions are brief, solution focused, with interventions and communications modeled to support medical team, patient, and family efforts and goals (Beehler and Wray 2012; Funderburk et al. 2011; Hunter et al. 2009; O'Donohue and James 2009; Robinson and Reiter 2007; Weisberg and Magidson 2014). Communications and records within the integrated model are shared among care team members, inclusive of the patient, physician, BHP, and adjunctive medical personnel. Patients are referred by the PC physician or care team member. BHP in integrated settings must rely on skills of flexibility, rapidity, and generalizability.

(Glasgow and Nutting 2004; Glasgow 2010; Goldstein et al. 2004; Hunter et al. 2009).

Therapeutic sessions in integrated behavioral health focus on health and wellness with the physician's medical concerns in context and align with the 5A's of behavioral change in PC (Dosh et al. 2005; Glasgow and Nutting 2004; Glasgow 2010; Goldstein et al. 2004; Hunter et al. 2009). Refer to Fig. 2.3 for the 5As cycle. The 5As cycle, also known as behavior change counseling model, uses five key strategies to support people to manage their identified condition (health and wellness): assess, advise, agree, assist, and arrange. BHPs assess through exploring the patient's knowledge, beliefs, and values related to their health and wellness (Glasgow and Nutting 2004; Glasgow 2010; Goldstein et al. 2004; Hunter et al. 2009). BHPs assess the patient's specific knowledge about their illness and ability to effectively self-manage. Advising encompasses building on what the patient already knows about their health, wellness, and condition. BHPs target risks, health promotion behaviors, and adherence using the patient's own verbiage, avoiding medical jargon, ensuring direct communication, and shared understanding. Joint goal setting and action plans are created with the patient's strengths, confidence, conviction, priorities, and preferences in mind. Utilizing rating scales for assessing importance and confidence in ability to accomplish the plans is an associated intervention, which improves likelihood of accomplishment (Anstiss 2009; Britt et al. 2004; Rollnick et al. 2008). BHPs assist the patient through facilitating discussions surrounding identifying, problem-solving solutions to potential barriers, and identifying supportive resources and people. Arranging is inclusive of setting follow-up of communication with PCP, care team, and/or return with behavioral health, identifying time frame for achieving action plans or goals, and specific support planning (Glasgow and Nutting 2004; Glasgow 2010; Goldstein et al. 2004; Hunter et al. 2009) (Table 2.1).

Specialty care model therapy services often vary from a 45–50-min traditional session with averaging length of service dependent on population served and individualized treatment planning. Therapeutic modalities further include specialties such as, but not limited to eye movement desensitization and reprocessing (EMDR),

Table 2.1 Integrated behavioral health session structure (Adapted from: Hunter et al. 2009)

Time frame of session	Session structure
Minutes 1–3	Setting the stage, agenda setting, statement of time together (15–30 min), reason for visit, buy in, rapport building, and review of shared communication plan
Minutes 3–10	Functional and risk assessing, check in/follow-up on progress, listen, and elicit concerns
Minutes 10–15	Asking permission and advising
Minutes 15–25	Review session understanding, action plan, behavioral activation, practical application and negotiation, agree and assist
Minutes 25–30	Wrap-up, referrals, arrange, resources, support, homework, and follow-up communication planning. Session feedback

trauma-focused cognitive-behavioral therapy (TF-CBT), trauma-focused therapies, family and relational therapies, dialectical behavioral therapy (DBT), and substance addiction treatment. Treatment plans and interventions are focused on cognitive, affective, trauma, and substance use disorders. Communications and interventions follow formalized treatment plans and remain between patient and provider. BHPs in specialty care settings utilize skills specialized on specific narrowed therapeutic focus and populations. Review Figs. 2.1 and 2.2 for time frame structure of integrated and specialty sessions and Fig. 2.3 for a side-by-side comparison of the dif-

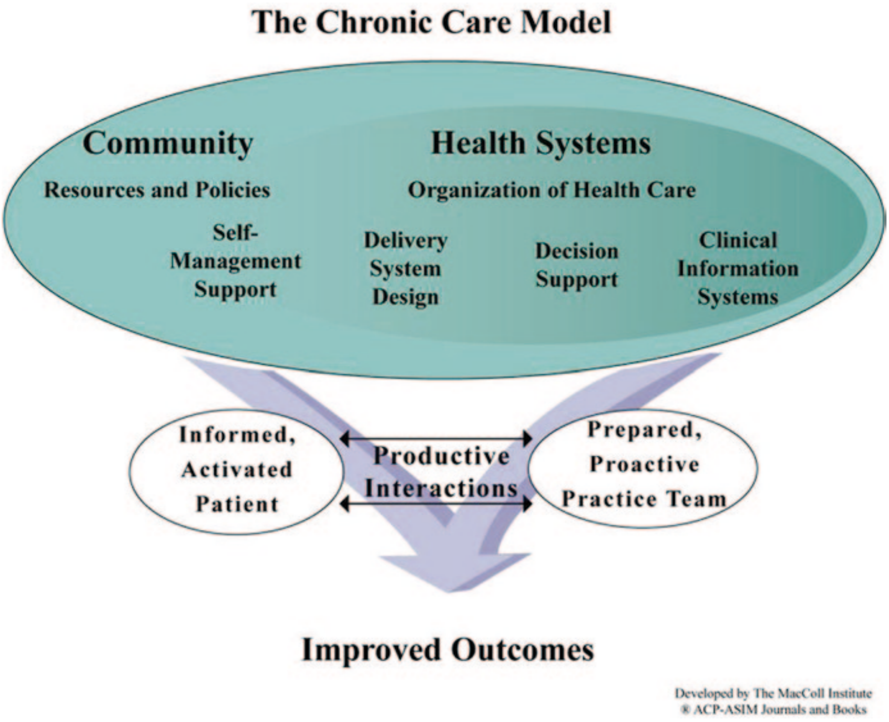


Fig. 2.2 Chronic care model (Wagner 1998)

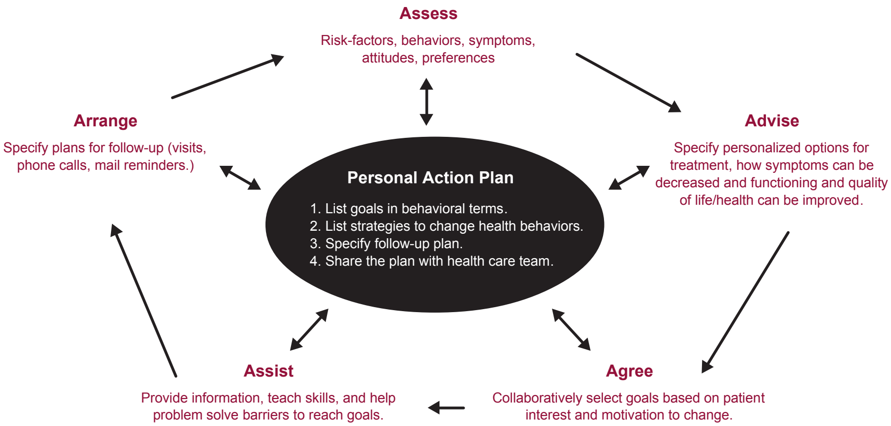


Fig. 2.3 5 A's of behavioral change in primary care

Table 2.2 Specialty behavioral health session structure (Beck 2011; Culley and Teten 2008)

Time frame of session	Session structure
Minutes 1–20	Check in, rapport building, assess, listen and elicit concerns, review last homework, new concerns
Minutes 20–40	Introduce the discussion, relate topic to client's current concerns, advice
Minutes 40–50	Explore the client's understanding of and reactions to the topic, assign and review plans, identify support, session feedback

ferences between integrated care models and traditional specialty behavioral health models (Table 2.2 and 2.3).

Assessments in Behavioral Health

Assessments and screening tools are common for both integrated and specialty behavioral health services. The main differences between the assessments and screening tools utilized in each setting are related to length and purpose. In PC, the nature of screening is to identify disease and disorders in a community (population) and is vital to public health. Universal (screening of whole and healthy populations) or case-specific (purposeful or disease specific screening due to biomedical risks) screening enables early intervention and management. "Screening simply provides the clinicians with additional data about their patient's functioning that may or may not be pursued in the service of diagnosis and treatment planning" (Byrd and Alschuler, p. 124; O'Donohue and James 2009). Screening does not result in diagnosis, while assessment, such as in specialty and reverse integration settings, is an individualized intervention following a hypothesis to determine appropriate diagnosis and to establish a formalized treatment plan.

Table 2.3 Differences with aspects of care within integrated and specialty care. (Adapted from: Integrated Behavioral Health Project 2013)

Dimension	Integrated behavioral health	Specialty behavioral health
Primary consumer	PCP	Patient/client
Care context	Team based	Autonomous
Accessibility	On demand	Scheduled
Ownership of care	PCP	Therapist
Referral generation	Results based	Independent of outcome
Productivity	High	Low
Care intensity	Low	High
Problem scope	Wide	Narrow/specialized
Termination of care	Patient progressing toward goals	Patient has met goals
Time	15–30 min	45–60 min
Session interval	Long	Shorter
Visit need	Functional/medical/health	Mental health/addiction
Follow-up	Rare	Commonplace
Consultation	Frequent with medical provider and care team discussing health and wellness	Little to no interaction with medical providers especially regarding medical condition
Activity	Fast, flexible	Focused
Therapeutic milieu	Solution focused, MI, CBT	Dependent on therapist and client preference
Description	Patient	Client, consumer
Location	Care team/primary care	Ancillary, exception reverse integration models
Determination of services	Population based	Client based, specific requirements for service
Flow	Informal flow, referred by PCP or care team, vulnerable to frequent interruptions	Formal, requires intake, assessment, and treatment planning, private interchange

PCP primary care provider, *MI* motivational interviewing, *CBT* cognitive-behavioral therapy

Medical and psychological literature is abundant with evidence of the biopsychosocial impact of undiagnosed and untreated MH conditions in PC (Means-Christensen et al. 2005; Fries et al. 1993; Kroenke and Mangelsdorff 1989). Although conflicting research indicates screening does not always result in outcomes, it is an efficient and effective form of identification and risk reduction in population-based health management. Screenings assist by opening doors to communication normalize and recognize societal behavioral concerns, reduce stigma, and strengthen possibility of self-management and resiliency. While extending the PC diagnostic decision tree to be inclusive of multidisciplinary team efforts, screening provides PC with a target for discussions surrounding specific clinical presentations, atypical responses, and the symptom and behavioral impacts to disease management and overall health and wellness.

Commonly universal and case-specific screening instruments in PC are brief, and completion includes paper and pencil or electronic/health information technology (through electronic medical record applications, private kiosks, and websites) questionnaires and/or interviews. Clinics may opt to universally screen prior to visits or screen related to medical etiology (known and unknown), atypical responses to treatment, symptomatology, self-selection, high utilization, or recommended staged behavioral screenings for competent clinical care. The most prevalent behavioral problems presented in PC are anxiety, depression, pain, somatization, and stress/adjustment concerns (O'Donohue and James 2009).

The most employed behavioral screening tools in PC include Patient Health Questionnaire (PHQ) in various forms (PHQ-A: adolescents, PHQ-2: 2 questions, PHQ-4: 4 questions, PHQ-9: 9 questions, and PHQ: 15 question formats), typically referred to as the "depression screening tool," measures the severity of somatic symptoms and assesses for depression symptomatology, derived from the primary care evaluation of mental disorders (PRIME-MD; Hahn et al. 2000); generalized anxiety disorder (GAD-7) checklist screens for generalized anxiety disorder and other anxiety disorders (panic disorder, social anxiety disorder, and post-traumatic stress disorder; Spitzer et al. 2006; DUKE Health Profile; DUKE; Parkerson et al. 1990) recognizing the World Health Organization (WHO) dimensions inherent to quality of life: physical, mental, and social health (Parkerson et al. 1990), developed by the Department of Community and Family Medicine, Duke University Medical Center, Durham, North Carolina; and screening, brief intervention, and referral to treatment (SBIRT) which is inclusive of various standardized screening tools for at-risk or active substance abuse disorders. SBIRT focuses on brief screening, intervention (targeting insight, awareness, and motivation toward behavioral change), and referrals for severity of substance use. The most commonly used screening tools for SBIRT include The WHO's Alcohol Use Disorders Identification Test (AUDIT), WHO's Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST), adolescent SBIRT screen using the CRAFFT, drug abuse screening test (DAST), alcoholism screening test (AST), Michigan alcoholism screening test (MAST), CAGE alcohol screening test, National Institute of Alcohol and Alcoholism's (NIAAA) 3-Question Screen, and National Institute on Drug Abuse's (NIDA) Modified ASSIST (Babor et al. 2007; Madras et al. 2009; SAMHSA 2014).

In addition to the commonly utilized screening tools, integrated BHPs may also use brief screening tools associated with specific specialty medical care. For instance, within obstetrics, use of the PHQ, Edinburgh Postnatal Depression Scale (EPDS), and the Postpartum Depression Screening Scale (PDSS) is common to assess and monitor depression symptoms in antepartum and/or postpartum women (Milgrom and Gemmill 2014; Goldberg 2014; Venkatesh et al. 2014). Depression in pregnancy is common, and the negative effects of maternal depression on infant development are profound (Canadian Pediatric Society 2004; Quevedo et al. 2012). Early identification and treatment allow for the possibly of minimizing (or, in best-case scenario, preventing) associated negative sequelae.

Screening for developmental concerns is often a priority within pediatrics. Screening tools are evidence based, best practice, cost efficient, and lead to earlier diagnosis and services (Regalado and Halfon 2001; Skellern et al. 2001; Glascoe 2003; Glascoe 1998). Within pediatrics child developmental inventories, Modified Checklist for Autism in Toddlers (M-Chat), and Ages and Stages Questionnaire (ASQ) are often utilized (Glascoe 2003; Regalado and Halfon 2001; Robins et al. 2014; San Antonio et al. 2014; Skellern et al. 2001). These structured tools assist with improving awareness and communication about a child's development.

Documentation in Behavioral Health

Appropriate clinical documentation and health record are not only essential and vital to health-care delivery but also it is also an ethical and risk management skill. High importance is placed on clinical documentation to be accurate, succinct, timely, and useful. Documentation has industry, legal, regulatory, and accreditation requirements related to profession, practice, and reimbursement.

Integrated BHPs need to meet the standard practice and quality improvement organization's (QIO's) requirements of their primary license, profession, and also the medical profession. This is especially true in organizations where integrated BHPs' clinical documentation is shared with and part of the medical record. It is essential that clinical documentation not only be written to meet standards but also for the patient, the BHP, and for the primary medical provider/care team. Documentation is a foundation for communication, and the BHP must always consider and balance a sense of privacy, confidentiality, and continuity of care. Specifically, integrated BHPs may wish to visualize the old adage of documenting while an over-anxious patient, an aggressive lawyer and auditor, and a confused medical care team watches.

In order to ensure accurate clinical documentation within an IC team model, the following characteristics of documentation are recommended (Table 2.4):

Integrated BHPs are responsible to document all patient interactions, communications, and consultations. In addition, in most medical settings, they also share the responsibility of maintaining an accurate master problem and diagnosis list in the medical chart. If the patient's condition related to behavioral health services is chronic, then it is appropriate to be documented in the medical problem/diagnosis

Table 2.4 Recommendations for documentation in integrated care

Individualized	Documentation must be linked to the patient
	Appropriate diagnosis/diagnostic impression
	Functional impairment
	History of concern
	Treatment plan with clear outcomes and monitoring
	Targeted goals, related symptoms (severity, duration, context, modifying/mitigating factors), prognosis, and progress
	Coping/self-management/resiliency skills
	Changes
	Adherence
	Culturally sensitive
Permanent	It is important to always remember that documentation is permanent. Especially with electronic medical records, everything we write is remembered and stored
Complete	Document the facts without personalization. Focus on what is important to communicate
	Collaboration and coordination planning for the delivery of care
	Meeting reimbursement requirements
	Meeting practice, legal, regulatory standards
Specific	Use specific quotes when appropriate
	Atypical responses
	Timelines, not descriptives
Standard	Date of service
	Reimbursement coding appropriately corresponding with patient and associated with documentation
	Time with patient
	Mental status
	Rationale for services/foundation for medically necessary
	Evidence-based interventions and treatment
	Assessment
	Biopsychosocial focus
	Recovery oriented
	Referrals needed or referral question
	Consent and confidentiality considerations
	Knowledge of documentation in medical record
Timely	Completed as soon as possible or within 24 h of patient interaction
Sensitive	Specific thoughts and feelings outside of symptoms or diagnosis; specifics of last traumas, counter transference or transference, and dream analysis should not be documented
	Remember documentation is a permanent record
	Reportable events must be appropriately documented

list. Relevant consultations with regard to adherence, modifying intervention strategies, and execution of responsibility should be documented.

It is the responsibility of all organizations and professionals to ensure appropriate documentation and to align efforts with standard organizational policies and procedures. Documentation policies and procedures operationalize and provide guidance. It is recommended to have consultation and organized efforts for documentation peer review to ensure monitoring and compliance standards. A policy with specific standards, examples, responsibilities, and procedures should be established. Policy should be reviewed annually and align with applicable federal regulations, accreditation standards, state regulations, professional practice standards, and reimbursement requirements.

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Chapter 3
Blending Behaviorists into the Patient-Centered Medical Home

Joel Hornberger and Dennis Freeman

The US media reminds us daily of the health-care drama unfolding before our eyes. They tell us of *change*, big change. Those of us on the front line of this unprecedented change have learned the lesson that simple solutions to fix our complex health-care system are elusive. We remember the “good old days,” when we tried to improve quality and control costs through a variety of means—wellness programs, preadmission review, concurrent review, retrospective review, preferred provider organizations, health maintenance organizations, fee-for-service contracts, capitation contracts, contact capitation contracts, employer coalitions, case management, care management, “1–800” health coaches, benefit redesign, cost sharing, cost shifting, and health savings accounts.

Our past attempts at improving quality while controlling costs have had only marginal success. Some would argue these early attempts have been just that, attempts, with little containment of the cost curve and questionable quality improvements. Today, the language of change in health care focuses on accountable care organizations, population health management, patient engagement, meaningful use, and value-based contracts. Health-care organizations across America are embracing these changes as they position themselves for a radically different future. Fee-for-service payment mechanisms, in place for decade after decade, are being replaced by “payment reform.” State after state and payer after payer are looking for innovative ways to pay providers in ways that align care delivery and cost incentives.

In this sea of change, a “new” delivery model is emerging—the patient-centered medical home (PCMH). The PCMH is quickly becoming a centerpiece of current strategies to reform the US health-care system. The PCMH model utilizes a team approach to provide primary care that connects patients and providers in a meaningful, comprehensive way at the time a patient needs care. Thus,

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Transformation, reform, integrated care, patient centered, value, and triple aim are the words that are reshaping health care today.

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W. O’Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_3

it focuses on access, coordination of care, prevention of disease, and patient engagement.

An exciting new development is occurring within primary care, and the PCMH in particular: the embedding of behavioral health professionals within primary care as members of the primary care team. The purpose of this chapter is to discuss major forces driving this phenomenon, to clarify the PCMH in the context of integrated care, to discuss the role of the behavioral health consultant (BHC) as a member of the primary care team, to present a strategy of financial sustainability, and to provide a glimpse of possible (or probable?) future trends in health care.

Forces Driving the PCMH

Driver #1: A Broken "System"

It comes as no surprise that we are facing unprecedented change in the US health-care system, seeking new and better solutions to improve quality and control costs. For too many, our health-care system is not working, and it has not worked for a long time. Runaway costs, coupled with questionable quality, produced a system of care that patients, providers, payers, and politicians alike could no longer tolerate.

Many questioned a system of care that excluded millions of US citizens from its rolls, enriched a few at the expense of many, cost billions of dollars, wasted untold millions of dollars, and delivered, overall, poor results. The most expensive health-care system on the planet tied for 34th place in the World Health Organization's rankings of national health systems, barely elbowing out Croatia and Cuba, countries where the health-care investment is much less than in the US (WHO 2014). Insurance company executives, brilliant at paying claims and calculating premiums, failed to control ever-increasing health-care costs, as costs (and premiums) climbed in all-too-often, double-digit fashion. For decades, insurers invested billions of dollars into claims-paying systems that churned out checks to pay providers for *fee-for-service contracts* that rewarded volume, not value. And so, volume is what we got.

Commonly, insurance companies fragmented care for millions of people who suffered from both medical and behavioral health conditions (note that when using "behavioral health" throughout this chapter, we are including both mental health *and* substance use disorders) by "carving out" behavioral health and handing over billions of dollars in premiums to for-profit, "carve-out" companies that had little interest in the integration of medical and behavioral health care. Current procedure terminology (CPT) codes, international classification of disease (ICD) codes, health-care common procedure coding system (HCPCS) codes, and diagnostic and statistical manual (DSM) codes formed, for some, the most important language of health care and established an entrepreneurial foundation for a "the-more-we-do-the-more-we-get" economic model that, again, rewarded volume over value. We have coded and coded and spent and spent.

The broken system was unacceptable and unsustainable, and everyone knew it. But what to do? Something *big* had to happen and needed to happen quickly. A political solution perhaps? Legislated health reform loomed on the horizon.

Driver #2: The Patient Protection and Affordable Care Act

On March 23, 2010, a political solution arrived. President Barack Obama signed into law the Patient Protection and Affordable Care Act (The "ACA"). Not since the 1960s, when Medicare and Medicaid were created to provide coverage for the elderly, poor, disabled, pregnant women, and children, has the USA seen such dramatic health-care legislation. This watershed legislation became known as "ObamaCare," a term used somewhat derisively by those opposed to the bill. (Those in favor of the legislation have sometimes used the term "ObamaCares" to describe the legislation.) The political hue and cry was loud and raucous and most likely will continue for many years into our future as politicians debate the best way to fix the US health-care system.

The legislation itself, along with millions of words of regulations, sought to improve quality, lower costs, protect consumers, and increase access. For all its length and complexity, the ACA was built on three overarching categories and seven key principles Table 3.1 shows the broad structure of the legislation (www.healthcare.gov):

In addition to these principles, the ACA incorporated two key concepts relevant to the blending of behaviorists into the PCMH: First, the requirement for mental health parity, and second, the PCMH model itself.

Table 3.1 Structure of the affordable care act

ACA category 1: Improving quality and lowering costs
Principles 1–4:
1. Free preventive care
2. Prescription discounts for seniors
3. Protections against health-care fraud
4. Small business tax credits
ACA category 2: New consumer protections
Principles 5–6:
5. Elimination of preexisting conditions
6. Consumer assistance
ACA category 3: Access to health care
Principle 7
7. Health insurance marketplace

ACA affordable care act

Mental Health Parity and the ACA The ACA required that health insurance plans on the health insurance marketplace must cover mental health and substance use disorders the same as any other medical condition. This meant that insurers were required to provide equity (covering behavioral health conditions the same as medical conditions) for lifetime limits, annual limits, deductibles, copayments, coinsurance, and out-of-pocket expenses. Equity extended to treatment of behavioral health disorders as well, requiring the same number of days, visits, day limits, etc. as for medical conditions. Additionally, health plans were required to cover certain preventive services like depression screening and behavioral assessments at no cost to the consumer. The law also eliminated denials for preexisting health conditions, which included behavioral health. In effect, the ACA expanded on the already-existing mental health parity and Addiction Equity Act of 2008 (www.mentalhealth.gov).

The PCMH and the ACA The ACA shined the spotlight on a promising "new" model of care—the PCMH. Nineteen provisions of the ACA deal with placing patients at the center of care, improving the patient experience, engaging patients in care, improving quality measures and mutual decision-making with patients (U.S. Congress 2010).

Historically, the model is not new. The American Academy of Pediatrics (AAP) began using the term "medical home" in the mid-1960s as a way to describe a system of care structured around the needs of a child and his or her family. The concept grew, and in the 1990s, the Institute of Medicine (IOM) embraced the "medical home" concept and promoted it throughout the country (Institute of Medicine (US) and Donaldson 1996). Then, in 2007, the model gained the joint endorsement of the Associations representing the four major primary care physician groups, the American Academy of Family Physicians, the AAP, the American College of Physicians, and the American Osteopathic Association (American Academy of Family Physician, et al. 2007). Representatives of these associations met and developed a document that articulated key features of the "PCMH." Table 3.2 shows the seven joint principles of a PCMH.

The impact of the ACA on driving the PCMH model cannot be underestimated. With the advent of the ACA and Medicaid expansion in many states, the PCMH became an important tool to accomplish the triple aim of improved care, better

Table 3.2 PCMH principles

The patient has a personal physician
The patient's personal physician directs a team to support the patient
The physician and the team have a whole-person orientation
Care is coordinated/integrated across a continuum of care
Quality and safety are key priorities
Enhanced access is available
Payment reform structures are in place

PCMH patient-centered medical home

health, and lower costs. The PCMH also forms the foundation for value-based contracts, population health, and risk management.

Payers saw the PCMH handwriting on the wall and soon followed suit and developed their own PCMH initiatives, often providing financial incentives to providers to adopt PCMH standards and guidelines, and in some cases, paying provider fees for national PCMH accreditation, recognition, or certification, and providing consultants to assist primary care practices meet PCMH standards, revise work flow, engage patients, and establish care coordination.

The ACA also drove the PCMH model through the US Department of Health and Human Services (HHS) and Health Resources and Services Administration (HRSA). They provided millions of dollars to federally qualified health centers (FQHCs) and look-alike FQHCs to support the development of PCMHs for vulnerable populations across the country.

As PCMHs grew, there was a need for common language and consistency of standards, guidelines, recognition, and accreditation. Organization such as the National Committee on Quality Assurance (NCQA), the Joint Commission, and others stepped in to accredit or recognize providers interested in building the infrastructure to transform their practices.

Driver #3: Accreditation and Recognition of the PCMH

In addition to a “broken system” and legislative drivers, PCMH accreditation (or recognition) provided standards, guidelines, definitions, and best practices that helped define the PCMH. Several national organizations began offering varying degrees of PCMH recognition, certification, or accreditation. The major bodies included the NCQA, the Joint Commission, Utilization Review Accreditation Commission (URAC), and the Accreditation Association for Ambulatory Health Care (AAAHC). These organizations provided structure and credibility to PCMHs. In short, they promulgated guidelines and standards, and through various on-site or off-site means, review a provider’s operations, policies, and procedures and supporting documentation to ensure that the PCMH candidate is compliant with those guidelines and standards. Each of the four major PCMH accreditation/recognition bodies uses slightly different standards (Joint Commission PCMH requirement comparison).

NCQA NCQA states it is the “nation’s most widely adopted way of organizing and evaluating patient-centered medical homes (PCMH)” (NCQA.org Newsroom 2014).

NCQA started its medical home recognition program in 2008 and updated its standards in 2011 and again in 2014. Their 2014 standards involve six key standards and 27 program elements:

NCQA uses a scoring guide for the elements. Level 1 recognition requires 35–59 points, level 2 recognition requires 60–84 points, and level 3 recognition requires 85–100 points. There are also high-priority, "must-pass" elements (www.ncqa.org/Programs/Recognition/…./PCMH2014Standards).

It is important to note that NCQA's 2014 standards include several enhancements over the 2011 standards, particularly related to behavioral health integration. These include:

1. *Integration of behavioral health:* Practices are expected to collaborate with behavioral health-care providers and to communicate behavioral health-care capabilities to patients. Embedding a behaviorist in a primary care practice supports this element.
2. *Care management with a focus on high-need populations:* Practices are expected to focus on special needs of patients, patients with complex conditions, and patients with socioeconomic challenges to receiving health care. Patients with behavioral health conditions will most likely fall into this category, as they are often complex and often have socioeconomic challenges. The concept of the "medical neighborhood" (practices that "surround" the medical home), collaboration, and coordination of care is introduced.
3. *Stronger team-based care:* Practices are expected to work as teams (as before), and this is now a "must-pass" item.
4. *Incorporation with the triple aim:* Practices must show how they are working to meet the goals of the triple aim of better care, better health, and controlled costs.
5. *Sustained transformation:* Practices must show how they are maintaining PCMH standards over the long term (NCQA.org Newsroom March 2014).

The Joint Commission As of September 1, 2014, the Joint Commission reports that it has 134 Joint-Commission-accredited PCMH organizations representing over 1300 sites with 4.2 million patients, 3000 primary care clinicians, and 12.7 million visits. (Note that the difference in the language "PCMH" (NCQA) and "primary care medical home" (JC) (www.jointcommission.org/standards_information.)

Their standards are based on the Agency for Health-care Research and Quality (AHRQ) and include the following:

Patient-centered care—focus on the whole person and their unique needs
Comprehensive care—multidisciplinary team of providers, collaborative care, treatment of physical, mental health, nutrition, prevention, acute and chronic care.
Coordinated care—across the continuum of inpatient, outpatient, specialty services
Enhanced access to care—expanded hours, use of e-mail and telephone, faster cycle time
Quality—evidence-based medicine, decision-support tools, satisfaction surveys, population health (www.jointcommission.org/standards_information)

URAC URAC offers organizations a PCMH "achievement." Their standards are based on the "joint principles of the PCMH" discussed earlier. These include improved access, care coordination, quality, and practice efficiency. Their achievement is offered to primary care practices, pediatric practices, multi-specialty groups that include primary care or pediatrics and "practices in multiple types of settings" (outpatient clinics, academic-affiliated ambulatory clinics; URAC.org).

Accreditation Association for Ambulatory Health Care (AAAHC) The AAAHC offers two options for organizations to achieve recognition as a medical home. These options include Medical Home On-site Certification and Medical Home Accreditation. The Medical Home On-site Certification encourages practice transformation through standards similar to the "joint principles," such as team-based care, comprehensive services, enhanced access, clinical data, and quality (AAAHC.org).

Forces Driving the Inclusion of Behaviorists in the Patient-Centered Medical Home

Limited Access to Behavioral Health care

Access to specialty mental health services is inadequate for many populations in the USA. Waiting lists are a frequent feature of the mental health sector, and many who seek care wait weeks or even months for an initial appointment.

Access has become especially challenging for low-income and uninsured Americans. Mental health care is expensive. The mental health safety net, the community mental health center system, was established to provide care to all community residents on an ability to pay basis. Most community mental health centers serve those with serious mental illness. Thus, the emergency room or the family doctor has become the access point for mental health care for a large segment of the population.

Less than half of those in need of mental health services in this country access that care (Wang et al. 2005), yet the system struggles to accommodate those who do. As presently configured, the mental health system is an inadequate match for the demand for services, let alone the unpresented need. Were it not for the significant barrier stigma continues to impose, access problems would be much worse.

The Behavioral Nature of Primary Care

For years, it has been established that more people seek, and receive, assistance for their mental health concerns in primary care rather than from the array of mental health specialty sector options. The majority of primary care providers screen for behavior health conditions, and most psychotropic prescriptions are written by primary care providers. For these reasons, primary care has been referred to as the *de facto* mental health delivery system in this country (Regier et al. 1993).

There are a number of factors that influence this pattern of service utilization. The widespread prevalence of mental disorders clearly exceeds the capacity of the mental health specialty sector. The National Comorbidity Survey Replication, an epidemiological study of mental disorders in the USA, reported an annual prevalence of around a quarter of the population and a lifetime prevalence of 48 % (Kessler et al. 1994). As noted above, the specialty mental health sector cannot accommodate these numbers and more seek help from their primary care provider than from a mental health professional (Wang et al. 2005). Most of the population has at least one primary care visit over the course of a year, so even if they do not request assistance for a behavioral health concern, they are available for intervention in the primary care arena. Primary care, then, is the gathering place for the population with mental health treatment needs. It is logical for mental health professionals to consider locating in the environment where the greatest number of those in need present.

Once mental health professionals enter the world of primary care, they are almost always surprised about the behavioral health nature of primary care practice. Every day patients with psychiatric conditions pack the schedules of primary care providers. Over and above these patients with clear-cut psychiatric diagnoses, psychological distress drives a good share of primary care utilization (Kroenke and Mangelsdorff 1989). Often an organic basis cannot be established for common somatic complaints. Psychosocial factors drive many visits (Strosahl 1998). Thus, the primary care population often presents in distress, and the majority of visits include a psychosocial component.

Impact of Behavior in the Management of Chronic Conditions

The organically based conditions that patients bring into primary care are often chronic in nature. Primary care providers frequently assist patients in the management of diabetes, cardiovascular problems, asthma, and hypertension. Successful management of these conditions is longitudinal and requires periodic visits in order to assess the condition and encourage self-management between visits by the patient. A major impetus to the patient-centered health-care home movement is to provide this level of continuity and generate better outcomes for these high-cost and debilitating conditions.

Patient self-management requires the articulation, selection, and promotion of health-enhancing behaviors. Skill sets frequently mastered by behavioral health providers have direct applicability to the initial negotiation with patients over the selection of self-management goals and to the ongoing lifestyle management these challenging conditions present. Assessing patients in accord with the readiness to change framework (Prochaska et al. 1994) and employing supportive and encouraging techniques like motivational interviewing (Rollnick et al. 2007) add structure and strategies to the process of patients coping with chronic disease. Many behaviorists are equipped to facilitate the prepared and activated patient prescribed by the PCMH model.

Comorbidities are the rule rather than the exception in primary care patients, especially as patients reach middle age. Patients with complex comorbid and interactive medical and psychiatric conditions are common in medical as well as psychiatric practice. Neither treatment setting is generally equipped to deal with the complexity. George Rust, Professor of Family Medicine and Director at the

National Center for Primary Care at Morehouse School of Medicine, reported that over half the Medicaid enrollees in Georgia had three or more co-occurring disorders including over 40 % with a psychiatric or substance use disorder. Seventy-three percent of enrollees with a substance use disorder had three or more co-occurring chronic medical problems (Rust 2009).

These numbers are not surprising to clinicians working with similar populations. The profusion of medical comorbidities furthers the argument for multidisciplinary teams to address the complex needs in evidence during many patient presentations. The frequency of psychiatric diagnoses co-occurring with chronic medical conditions and the importance of behavioral self-management in all chronic conditions, psychiatric, as well as medical support the inclusion of behaviorists on the primary care team. A team of health professionals is often necessary to provide appropriate care. No single treating professional is an expert with all these conditions and their behavioral ramifications.

Cost

There is no question that the high cost of health care is the main factor driving health-care reform in this country. Total expenditures for health-care goods and services are much higher in the USA than in any other nation on the face of the earth. Despite this financial investment, the health status of Americans is generally poorer than that of the citizens of most other industrialized nations.

Nations with a primary-care-based health-care system spend less and produce better clinical outcomes. This was led to the current emphasis in this country on the transformation of primary care practices in accord with the PCMH ideology. The PCMH model places a greater emphasis on coordination of care, tracking of clinical outcomes, and patient engagement. This is especially for those patients burdened chronic medical conditions.

About two thirds of the health-care expenditures in this country are spent on the care of individuals with chronic medical conditions like diabetes and cardiovascular conditions and the effects of unmanaged hypertension like strokes and asthma. These conditions have become the focus of payers who, more and more, see it is critical that these patients are enrolled in a primary care home, and their conditions are well managed within the primary care environment.

Payments to mental health professionals for the treatment of psychiatric conditions comprise a relatively insignificant portion of total health-care spending, generally 5 % or less for a commercially insured population, and only a few percentage points higher for Medicaid populations. However, the impact of psychiatric disorders on total health-care spend is much greater. Stephen Malik, an actuary with Milliman, Inc. (Melek et al. 2014), found the presence of a comorbid psychiatric disorder doubles or even triples the cost of treating chronic medical conditions. Other researchers have reported similar findings, and these findings are corroborated by health-care plans as they review their expenditure data. This argues for the inclusion of behaviorists on the primary care team. There is compelling data that the addition of a behaviorist improves clinical outcomes and reduces overall health-care cost. Melek's review of claims data, and the existing literature allowed him to conclude effective integration programming produces cost savings of up to 16 %.

The Behaviorally Enhanced PCMH

Given the frequent co-occurrence of medical and psychiatric conditions and the impact of the interplay of these conditions on health status and longevity (Parks et al. 2006), clinical outcomes (Druss and Walker 2011), and cost (Melek and Norris 2008), it is understandable there has been a rush to promote collaboration between medical and behavioral health providers. Over the past decade, a number of primary care practices have brought mental health professionals on to their staff. Although commonly referred to as integrated care, upon closer review, the majority of these initiatives are merely a co-location of a specialty mental health practice within the primary care practice. Although the proximity of the mental health provider may facilitate better access and coordination of care, the co-location of these professionals does not necessarily modify the practice style of either.

The leading practitioners of the effort to blend behavioral health and medical care have moved beyond co-location. There is an emerging consensus on what constitutes the best practice of integrated care (Table 3.3). In best practice integration, a specially skilled behaviorist is an embedded, full-fledged member of the primary care team. The behaviorist does not have an independent caseload but works with the patient panel of the primary care provider as clinically indicated. These providers share the same support staff and are physically located near each other, so face-to-face communication and patient hand off are readily accomplished. They utilize the same electronic health record system, so access to clinical documentation on shared patients is readily available. Frequently, there is direct, verbal communication about the plan of care during the patient visit. In best practice integrated care, there must be a reimbursement model in place which encourages, supports, and sustains the clinical model.

These behavioral health practitioners who are embedded in primary care teams are called BHCs. Like primary care providers, they are generalists and must have the knowledge base and skill set to support effective practice with the diverse patient population of a primary care practice. Along with other members of the team, they help patients manage chronic medical conditions initiating and supporting better health habits and support treatment engagement and adherence. BHCs employ evidence-based interventions to address a variety of conditions commonly presented in primary care. For example, they help patients stop smoking, manage stress, improve sleep hygiene, and manage pain. Patients with co-occurring psychiatric conditions and chronic medical challenges are best served by a multidisciplinary team in the primary care environment where the medical technology and ancillary supports

Table 3.3 NCQA standards (general; www.ncqa.org/Programs/Recognition/…./PCMH2014 Standards)

Enhanced access and continuity
Access to care
24/7 clinical advice
Electronic advice
Team-based care
Continuity
Medical home responsibilities
Culturally and linguistically appropriate services (CLAS)
Practice team
Population health management
Patient information
Clinical data
Comprehensive health assessment
Use data for population management
Implement evidence-based decision support
Plan and manage care
Identify patients for care management
Care planning and self-care support
Medication management
Electronic prescribing
Support self-care and shared decision making
Track and coordinate care
Test tracking and follow-up
Referral tracking and follow-up
Coordinate care transitions
Measure and improve performance
Measure clinical quality performance
Measure resource use and care coordination
Measure patient/family experience
Implement continuous quality improvement
Demonstrate continuous quality improvement
Report performance
Use certified EHR technology

EHR electronic health record

are readily available to assess and manage the complexity so many patients present. Table 3.4 shows the multidisciplinary team members and their respective roles.

BHCs maintain a broader scope of behavioral health practice than specialty mental health clinicians. In addition to assessing and intervening with psychiatric conditions, BHCs focus on the promotion of health and enhancing patient responsibility for their personal health and well-being. When patients with psychological conditions do present in primary care as they so often do, BHCs assist the team with definitive diagnosis, provide interventions, and, on occasion, triage to specialty mental health care when indicated and when the patient is willing to go. Often they are not.

Table 3.4 Interdisciplinary team and their roles

Primary care provider (MD, DO, ANP, PA)	Provides primary care
	Leads integrated care team
	Performs "warm" handoffs to behavioral health consultant
	Documents in EHR
Behavioral health consultant	Provides brief, problem-focused behavioral health services
	Accepts "warm" handoffs from PCPs
	Performs preventive and disease management services to patients
	Provides real-time consultations to PCPs
	Consults with real-time psychiatrist as needed
	Documents in EHR
Consulting psychiatrist	Provides real-time consultation to PCPs and/or BHCs. Telephonic or telemedicine
	Accepts patients for care, stabilizes medications, and returns to PCP whenever possible
	Patients can be seen in person or via telemedicine
Nursing staff (RN, LPN, MA, CNA)	Administers behavioral health and/or other screening tools
	Supports patients (education, engagement)
	Supports PCPs
	Supports BHCs
	Documents in EHR
Case manager	Coordinates with PCPs
	Coordinates with BHCs
	Assists patients as needed (housing, food, medicines, transportation, etc)
Care coordinator	Coordinates with PCPs
	Coordinates with BHCs
	Coordinates with case managers
	Conducts outreach to patients
	Performs patient education
	Engages patients
	Closes gaps in care
	Makes appointments

MD medical doctor, *DO* doctor of osteopathy, *ANP* adult nurse practitioner, *PA* physician assistant, *EHR* electronic health record, *PCP* primary care provider, *BHC* behavioral health care, *RN* registered nurse, *LPN* licensed practical nurse, *MA* medical assistant, *CAN* certified nursing assistants

The consultations and interventions provided by the BHC facilitate the flow of the primary care visit. They are available "on demand" to their primary care colleagues when their assistance is needed. They absorb the unexpected and time-consuming visits by patients who are experiencing personal crisis. Often, the primary care provider and BHC collaborate on a plan of care for a patient, and the BHC helps the patient implement the plan by reducing it into achievable action steps. The integrated care team-based model is not only compatible with the PCMH but synergistic as well (American Academy of Family Physicians March 11, 2014).

The most recent iteration of NCQA recognition standards places a greater emphasis on the behavioral aspects of care (NCQA.org Newsroom). Examples include an emphasis on practice collaboration with behavioral health-care providers and care management with a focus on high-need populations. Therefore, the presence of a BHC helps achieve recognition.

Clearly, these principles are important constructs as organizations transform practices to become PCMHs. We at Cherokee Health Systems (recognized by NCQA as a level 3 PCMH) think of them differently to better fit our integrated care model. We call this model a "behaviorally enhanced PCMH (BEPCMH)." Table 3.5 compares and contrasts the traditional PCMH model with the BEPCMH model.

Best Practice Integration

- Blended care team
- Shared support staff and physical space
- Well orchestrated clinical flow
- One clinical record, unified treatment plan
- Communication is immediate
- Shared patient population
- Reimbursement mechanisms support the model

Cherokee Health Systems
Together Enhancing Life

Sustaining the BEPCMH

The challenge for many organizations is how to sustain the BEPCMH. Clearly, the model has additional costs and increased overhead. Figure 3.1 shows a "Balancing Act" developed by Cherokee Health Systems that we find helpful in demonstrating how costs and revenues can be balanced to assure long-term sustainability of the model.

One of the most important things to note on Fig. 3.1 is that there is not just one "silver bullet" that provides the revenues needed to sustain the model. In fact, most organizations need to "cobble together" several funding streams to sustain the model. Complicating the discussion further is the fact that states and payers are in various stages of development with regard to payment and coding for integrated care. It is common for organizations to undertake an advocacy role with Medicaid directors, policy makers, elected officials, and payers to advocate for payment reform.

Table 3.5 Contrasting the PCMH with the behaviorally enhanced PCMH

PCMH joint principle	PCMH	Behaviorally enhanced PCMH
Personal physician	Physician, FNP, ANP, or PA	Physician, FNP, ANP, or PA
Physician-directed team	Physician, FNP, ANP, or PA	Physician, FNP, ANP, or PA
	Nursing support, laboratory, X-ray	Embedded behavioral health consultant
	Care coordinator	Psychiatrist
		Case manager
		Nursing support, laboratory, X-ray
		Care coordinator
Whole-person orientation	Physical	Physical
	Mental—referral	Mental—in-house and referral
	Substance abuse—referral	Substance abuse—in-house and referral
	Culture	Women's health
	Language	Cardiology
	Socioeconomics	Nephrology
		Culture
		Language
		Socioeconomics
Coordinated care/integrated care	Referrals to medical "neighborhood"	In-house behavioral health in real time
		In-house "hard-to-find" specialist
		Referrals to medical "neighborhood"
Quality and safety	HEDIS	HEDIS
Enhanced access	Same day sick	Same day sick
	Medical access when needed	Medical access when needed
	Delay for behavioral health care	Real-time access to behavioral health care (BHCs and psychiatrists)
	Delay for "hard-to-find" specialists	Enhanced access to OB/GYN for Women's health
		Enhanced access for cardiology
		Enhanced access for Nephrology
Payment reform	Discounted fee for service	Discounted fee for service
	Risk-based contracts	Risk-based contracts
	Value-based contracts	Value-based contracts
	Quality incentives	Quality incentives
	Shared savings incentives	Shared savings incentives

ANP adult nurse practitioner, *PA* physician assistant, PCMH patient-centered medical home, *FNP* family nurse practitioner, *HEDIS* healthcare effectiveness data and information set, *OB/GYN* obstetrics and gynecology

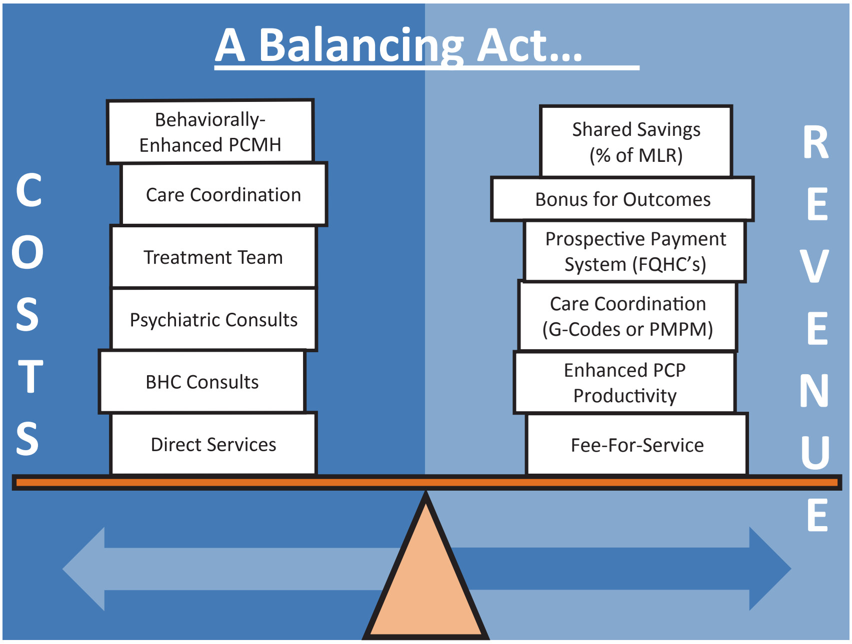

Fig. 3.1 Balancing of costs and revenues in an integrated care model. *PCMH* patient-centered medical home, *MLR* minimum loss rate, *FQHC* federally qualified health center, *PMPM* per member per month, *BHC* behavioral health consultant, *PCP* primary care provider

With regard to Fig. 3.1, "Direct Services" are those costs associated with providing patient care, such as primary care provider salaries and benefits, office space, medical supplies, laboratory, X-ray, and other costs relative to providing direct patient care.

"BHC consults" include the salaries and benefits of the BHCs, office space, and other costs related to providing direct patient care through brief interventions and to supporting the primary care provider through real-time consultations.

"Psychiatric consults" include the salaries and benefits of psychiatrists, telephone and telemedicine costs, office space, etc. related to providing direct patient care to patients and, more typically, providing real-time medication management consultations to primary care providers and BHCs.

"Treatment team" costs include the salaries and benefits, for the most part, of multidisciplinary team members who discuss patient care needs and develop strategies to manage the care of patients with challenging medical and/or behavioral conditions.

"Care coordination" costs include the salaries and benefits, office space, telephones, mileage, etc. of care coordinators, usually nurses at the clinic sites, who are working with patients to increase access, close gaps in care, conduct outreach, work registries, etc.

"BEPCMH" costs include any other expenses related to delivering the model. These could include case management, transportation, etc.

It is important to note that Fig. 3.1 demonstrates a fee-for-service arrangement on the revenue side of the balancing act. This is done because most provider contracts at this point are fee for service with added incentives. However, we believe that the future holds significant opportunities for payment reforms that will likely include a blended capitation to include primary care and behavioral health per member per month (PMPM) rates.

It is worth mentioning, too, that many organizations build start-up capacity for the BEPCMH through recurring and nonrecurring grant dollars. The US Department of HHS, through the HRSA, provided US $ 34 million in 2011 for quality improvement and PCMH development grants for approximately 900 community health centers and US $ 35 million for PCMH capital development and another US $ 300 million for behavioral health integrated care grants for community health centers in 2014. Additionally, HRSA funded an Advanced Primary Care Practice (PMCH) Demonstration project (2011–2014), where eligible Medicare providers were paid an additional US $ 6.00 PMPM for Medicare beneficiaries attributed to their practices to develop the systems and infrastructure to become recognized as a level 3 PCMH by NCQA. The problem with grants and demonstration projects, of course, is that they generally go away, and along with them, the start-up funds. Unless an organization has a realistic sustainability plan in place after the grants disappear, they are forced to return to pre-grant conditions.

As mentioned previously, we have found that bundling together multiple revenue streams is a viable sustainability plan. Figure 3.1 demonstrates the bundling of several revenue streams:

"Fee-for-service" revenue is, of course, fee-for-service revenue generated by primary care providers and BHCs. Typically, this revenue derives from visits paid from a negotiated fee schedule, often a percent of Medicare.

"Enhanced PCP productivity" is revenue generated by improvements in the primary care provider's productivity. We have found that one BHC can ideally support four family practice providers or three pediatric providers. We estimate that productivity can increase between 10 and 15 % *per primary care provider* by work in a team-based culture with an experienced BHC to support them. Operationally, to see this increased productivity, it is critical to have same-day access, aggressively manage no-shows and/or employ other means to schedule patients appropriately.

"Prospective payment system (FQHCs)" It can be argued that FQHCs and look-alike FQHCs organizations have a revenue advantage over non-FQHC practices due to their ability to receive additional cost-based revenue from Medicaid. This additional cost-based revenue comes from the "prospective payment system (PPS)" In simplest form, each FQHC or look-alike FQHC submits annual reports showing the number of visits they had and the amount of Medicaid funds they received for those visits. The state then makes up the difference between their costs and their receipts. Thus, FQHCs and look-alike FQHC organizations can receive enhanced payment to cover their integrated care costs (direct services, BHC consults, psychiatric consults, etc.).

"Care coordination." Another source of revenue comes from care coordination fees or HCPCS G-codes (G9001—care coordination fee, initial; G9002—care coordination fee, maintenance). Payers are increasingly interested in partnering with providers to coordinate the care of their members being seen by the primary care provider. To pay for this care coordination, payers and providers have settled on the G-code care coordination fees as a way to do so. Often, one fee is paid monthly, regardless of the number of actual visits the patient had that month.

"Bonus for outcomes." Payers are increasingly willing to pay significant incentives or bonuses when providers meet certain pre-negotiated quality measures, outcomes, or results. A typical bonus arrangement might be as follows: the payer and the PCMH negotiate goals for 10 healthcare effectiveness data and information set (HEDIS) measure. If eight to ten of the goals are met, then the PCMH keeps the full amount of care coordination; if six to seven of the goals are met, then the PCMH returns a portion of the care coordination fee to the health plan ("clawback provision"); if five or less of the HEDIS goals are met, then the PCMH returns an even greater portion of the care coordination fee to the health plan. HEDIS goals often include those dealing with diabetes (hemoglobin A1C (HbA1C) testing, low-density lipoprotein cholesterol (LDL-C) screening, etc.), immunizations (childhood immunization status, combo 10), breast cancer screening, controlling high blood pressure, and follow-up care for children prescribed attention-deficit/hyperactivity disorder (ADHD) medication—initiation phase (attention-deficit disorder, ADD). It is also common to incentivize access to care, particularly primary care follow-up after an emergency room visit or a hospital discharge (e.g., 70 % of members with an emergency room (ER) visit or a hospital discharge will receive primary care follow-up within 7 calendar days of discharge). Some plans incentivize same day appointments (e.g., 51 % or greater of all member visits must be delivered on the same day that a member calls for an appointment).

"Shared savings." In some arrangements, payers are incentivizing PCMHs to control costs, as measured by their medical loss ratio (total medical expenses/total premium). If the health plan's medical loss ratio is used as part of a shared savings incentive, it is important to tie quality metrics into the cost control goals, so as not to create any kind of perverse incentives to reduce necessary care in order to share savings. Typically, the quality measure and medical loss ratio goals must be met before any shared savings are distributed. Shared savings bonuses are often structured using a medical loss ratio risk corridor, and any *surpluses* below a certain threshold will be shared by whatever distribution is negotiated, and any *deficits* above a certain threshold are shared in the same proportion. In this scenario, the PCMH could end up owing money back to the health plan. The PCMH can purchase stop-loss insurance to limit its risk. Health plans may insist that the PCMH establish a restricted security fund in the event there are deficits.

The Future

Someone once said "The secret to accurately predicting the future is to predict it often." Change is occurring so rapidly in health care that the assumptions we make today will likely be outdated tomorrow. That said, here are ten health-care trends that will likely impact policy makers, providers, patients, and payers in the future as the BEPCMH model expands across the country.

1. *There will be a shift from fee-for-service payment systems to value-based payment structures*. As health reform and payer initiatives accelerate, providers will be faced with dizzying deals that contain some vestiges of traditional fee for service, but with bonus overlays for quality, cost controls, and access. We would not be surprised to see a return to provider capitation with selected quality metric as an effective long-term payer strategy. BCBS recently announced a US $ 65 billion dollar investment in value-based contracting arrangements (BCBS.com).
2. *Access to primary care will be a key success factor for primary care practices*. Increasingly, research is showing that if a person has at least one primary care visit in a year, then they use significantly less specialty, inpatient, and emergency room care. Access, access, access will become the new mantra. Primary care providers who are committed to same-day visits, who can expand care for existing and new patients alike, who can figure out walk in or real time scheduling, will be the winners. Providers whose business strategy is to churn existing patients with long wait times for appointments will be the losers.
3. *Behavioral health care will be an expected (and common) primary care service*. As evidence accumulates showing the impact of integrated care on patient and provider satisfaction, reduced costs and increased quality, the traditional wall between behavioral and medical will be torn down. In addition, accrediting bodies, such as NCQA and its standards, will drive integration. State policy makers will move toward this model and will write integrated care into managed care contracts. BHCs will be key players in primary care practices. Academic behavioral health training programs will see this trend and will gradually shift toward primary care psychology and social work.
4. *As a result of #3 above, traditional community mental health centers (CMHCs) will be "on the ropes."* We have already seen massive federal and state dollars flowing to community health centers, with far fewer dollars to CMHCs. CMHCs will be left searching for limited state funding to support a relatively smaller number of patients with severe and persistent mental illness. Community health centers, on the other hand, will increasingly provide behavioral health services through their primary care platform and will reap the rewards of new contracts and funding that support integration.
5. *The rate of strategic alliances, mergers, and acquisitions in health care will increase.* Organizations will be looking to expand integrated care services, geographic reach, competitive positioning, or strategic advantage. Organizations will seek to spread overhead and administrative costs over a larger base in order to be more efficient and effective, as economic pressures to do so increase.

6. *Inpatient providers will aggressively convert their traditional primary care practices to integrated care practices.* As accountable care organizations, risk-sharing arrangements, value-based contracts, and the population management expand, large inpatient health-care systems will see the integration of primary care and behavioral health services as an important strategic tool. Hospital systems will make behavioral health a priority in their primary care practices as accrediting bodies will increasingly require it, and as they see increased patient and provider satisfaction from integrated care.
7. *BHC training programs will play a larger role as workforce needs expand.* As a result of operational and funding trends directed at expanding integrated care, there will be an increased need and demand for stronger training programs that deliver a well-trained BHC able to work in primary care settings. Academic psychology programs will increasingly offer coursework, degrees, and internships in integrated care psychology. Continuing education and retraining of existing behavioral staff will focus on the development of integrated care skill sets and working effectively in a primary care setting. Psychologists, social workers, and other behavioral staff choose an integrated care career path, due in part to interesting and satisfying work and increased pay.
8. *Telemedicine will increasingly drive the expansion of integrated care into rural and inner city environments.* With the proliferation of mobile devices (phones, tablets, laptops, etc.), patient portals, and the near universal access to the Internet, providers will increasingly engage patients through telemedicine strategies. Connectivity costs are decreasing, and provider-developed portals, apps, and patient-friendly websites are increasing. An increasing percentage of patient visits will shift from the "office" to the "community." State medical boards will struggle to find the "right" balance of rules that increase access to care and maintain consumer protections.
9. *Health-care informatics will play an ever-increasing role in health care.* Solid data will increasingly drive best practices, quality, value-based contracts, patient and provider satisfaction, patient engagement, and panel management. HEDIS measures will play an even more important role in health-care's future. Providers will be forced to develop their own health-care informatics staff and skills, or partner with payers or other providers who have the technology and "number crunching" skills. Providers have always needed a good understanding of where their practices are vis-à-vis key performance metrics and where they need to be for future success, but this understanding will expand exponentially in the coming years. Providers will focus on real-time utilization data (inpatient admissions, ER visits, etc.) and longer-term utilization and cost data (using paid claims).

   One word of caution: While HEDIS measures and increasingly complex data analysis are likely to be the future for most providers and payers, there could be an eventual "simplification push back" by providers and payers alike. Proponents of simplification will point to research showing that one or two *key* metrics, such as an annual visit to a primary care provider, have the greatest impact on improved quality and reduced costs. The pressure to simplify data collection, data analysis, and information processing will come from an assessment of whether or not all of it is working.

10. *There will be increased transparency and partnering between providers and payers*. As providers and payers search for win–win solutions to achieve the triple aim, they will align funding, care coordination, and informatics incentives. There will be an increasing willingness to fund start-up grants for care coordination, purchase or develop software/apps, provide consultation, fund accreditation efforts, deliver paid claims data, fund integrated care, and other creative ways of working together. As the new roles of providers and payers take shape under health reform, greater cooperation and collaboration will become needed.

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Chapter 4
Training the Behavioral Health Workforce for the Patient-Centered Medical Home

William O'Donohue and Alexandros Maragakis

The argument that behavioral health providers (BHPs) require specialized training to meet the unique demands of the primary care than what is usually provided in, for example, the standard clinical psychology or social work curricula has been a topic discussed by others (Blount and Miller 2009; Rozensky 2012; O'Donohue et al. 2009). Recommendations about what basic competencies an integrated care BHP requires to be effective have also been provided by federal agencies, like SAMSHA (Hoge et al. 2014). One of the functions of these basic competencies provided by SAMSHA (Table 4.1) is to act as a guideline for what content and skill domains should be emphasized in workforce development. To be fair, most of these prior discussions have been concerned with training for BHPs to function in integrated care settings rather than the personally controlled health management systems (PCHMs). Integrated care is an earlier innovation to come on the scene, and thus it has a longer history of scholars exploring training implications. However, it is fair to say that no clear consensus has been reached on training needs regarding integrated care and probably of more concern there has been little implementation of training programs that can produce providers to meet current and future demand (see O'Donohue and Maragakis 2014 for a fuller treatment of this issue). There are weekend certificate courses, consultants who provide training, workshops, some specialty tracks in doctoral training programs, and even new doctorate degree in integrated behavioral health (e.g., the Doctorate of Behavioral Health at Arizona State University).

In general, there are two major questions regarding training (O'Donohue and Boland 2012). The first is the specification of training outcomes: What skills and knowledge is to be inculcated? Then, the second is the specification of training processes: What are the most efficient and effective methods to impart these? This

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_4

Table 4.1 SAMSHA core competencies for integrated care (Hoge et al. 2014)

Specific competency	Brief description of competency
Interpersonal communication	The ability to establish rapport quickly and to communicate effectively with consumers of health care, their family members, and other providers
Collaboration and teamwork	The ability to function effectively as a member of an interprofessional team that includes behavioral health and primary care providers, consumers, and family members
Screening and assessment	The ability to conduct brief, evidence-based, and developmentally appropriate screening and to conduct or arrange for more detailed assessments when indicated
Care planning and care coordination	The ability to create and implement integrated care plans, ensuring access to an array of linked services, and the exchange of information among consumers, family members, and providers
Intervention	The ability to provide a range of brief, focused prevention, treatment and recovery services, as well as longer-term treatment and support for consumers with persistent illness
Cultural competence and adaptation	The ability to provide services that are relevant to the culture of the consumer and their family
Systems-oriented practice	The ability to function effectively within the organizational and financial structures of the local system of health care
Practice-based learning and quality improvement	The ability to assess and continually improve the services delivered as an individual provider and interprofessional team
Informatics	The ability to use information technology to support and improve integrated health care

chapter investigates both. Part of the difficulty though is that there has been little discussion of this important topic. It seems as though patient-centered medical homes (PCMHs) are to be staffed by professionals who somehow and somewhere have acquired a rather unspecified skill set needed to make these successful. It reminds one of Victor Raimy's waggish and cynical comment about the definition of psychotherapy, "Psychotherapy is an undefined technique applied to unspecified cases with unpredictable results. For this technique rigorous training is required."

A discussion of training of BHPs for PCMHs needs to take place in a context where the following is understood: (1) PCMHs are a developing rather novel care delivery system and part of what is unclear about these is whether a BHP ought to be included as part of the core team. Some of the most influential descriptions of these BHPs were not included (American Academy of Family Physicians, 2008) in the core team. However, even if BHPs are to be included, exactly what their roles are, how many full-time equivalents (FTEs) are needed, and other key descriptive factors will of course play a significant role in helping to define their training needs. (2) The training of behavioral health professionals in general has been controversial and somewhat unsettled. For example, with regard to the training of clinical psychologists, there are controversies regarding what general model ought to be instantiated (clinical scientist vs. scientist–practitioner vs. scholar–practitioner, etc.). These differing models have produced schisms in the field and even two distinct degrees at the doctoral level—the Ph.D. and the Psy.D. Then, there are controversies regarding other issues such as psychotherapy model—for example, cognitive-behavioral therapy versus biological models. (3) Part of the general controversy also involves what level of training is needed to perform at certain levels. There are masters- and doctoral-level practitioners and even more recently bachelor-level practitioners (e.g., in applied behavior analysis). The field that has not made a lot of progress is defining the working relations between these. Behavior health lags significantly behind medicine in delimiting a range of professionals and paraprofessionals with distinct and complementary core competencies. (4) Training in behavioral health has been inefficient. It can take nearly 10 years to produce a generally trained, licensed, doctoral clinical psychologist (see O'Donohue and Maragakis 2014; O'Donohue and Boland 2012). In addition, the numbers that are trained are very small. The typical entering class in a university-based doctoral program in clinical psychology is less than ten students. Current levels of output do not meet the current and expected demand. (5) Creating some sort of advanced credentialing which provide valid indications of specializations and specialized skill sets has been messy and largely ineffectual. There is no strong consensus on what advanced credentials (certificates, diplomate status, workshop attendance from what organizations) significantly represents competency in any specialization. The behavior health field has nothing to correspond to passing specialty boards in medicine, for example. (6) There are a wide array of credentialing bodies, but all of these are also associated with a significant amount of controversy. Concerns are raised whether these credentialing agencies are doing a good job of assuring quality and efficiency. Gaining the fact that accreditation is often an expensive, a slow, and a mind-numbing process in possibly meaningless detail. Moreover, like any bureaucracy, these accrediting bodies can be slow to improve and meet innovations such as the training needs associated with PCMHs. (7) Finally, possibly as a result of these problems in recent years, a diverse alphabet of new degrees and new credentials (e.g., doctorate in behavioral health and masters in marriage and family therapy) has been created, and these often are poorly understood and have unclear quality, particularly in relation to a novel skill set such as PCMHs.

These considerations give rise to some pessimism regarding whether there will be a consensus soon regarding efficient and effective training for the BHP in a PCMH. However, the following section provides a brief review of the unique demands to be met in the delivery behavioral health services in primary care.

We first discuss the skill set necessary for BHPs to provide leadership. PCMHs as an innovation need leadership. It is a mistake to think that only clinical skills are needed. These are important to be sure, but what the behavioral health field often suffers from is a lack of managerial and entrepreneurial skills (O'Donohue and Fisher 1999). Fields such as computer science are always innovating, raising money for these innovations, testing these against benchmarks or consumer-centric criteria, and revising. The behavioral health field has much more of a staid, bureaucratic orientation that has direct implications for its involvement in the innovations needed to address the concerns associated with the Affordable Care Act (ACA). It is important to remember that these innovations have to be funded, created, managed, measured in order to see the extent to which goals are realized, and then modified to maximize the potential of these. These take a skill set associated with management, entrepreneurship, devising strategic plan, human resources, teaching, and most importantly quality improvement (QI).

Systems-Oriented Practice

Within the context of PCMH and integrated care at large, the BHP is a part of a system, and no longer in a "mental health silo". This shift for many from practitioners with independent practices to a large health-care setting may be new and sometimes unsettling. It is imperative that BHPs understand their role in the context of the health-care system at large and how various dynamics may influence that role. Thus, an interesting question becomes, what sort of extra-clinical training is needed, say in management and administration. Some BHPs will be asked to assume managerial roles yet there has been little formal training in traditional curricula (see O'Donohue and Fisher 1999). Perhaps a management track ought to be developed.

Leadership Skill I: Quality Improvement

A key emphasis with current health-care reform is the notion that health care should continually strive to improve services. After all, the PCMH is at its roots a QI hypothesis. This originated with the numerous concerns identified with safety, access, and overall quality in the series of reports known as Crossing the Quality Chasm (IOM 2001). While the field of medicine has adopted an increased orientation to QI (see Berwick 2013) and more consistently integrates QI principles in health-care delivery, behavioral health has not been as quick to join this critical movement (see O'Donohue and Maragakis in preperation). Given that many settings associated with innovations required in the ACA require QI processes, it is important that BHPs understand the basic principles of QI and are able to not only work within QI systems but also design and implement these. BHPs especially those trained at the doctorate level may be the best prepared to design, implement, and interpret these QI projects. The relationship between the epistemologies of QI and scientific research is identical. Understanding QI methodology, like the plan–do–study–act (PDSA) cycle, and tools, like benchmarking, using process maps, and constantly measuring quality indicators will help BHPs achieve the goals of improving services, as well as help with other competencies, like systems-oriented practice (O'Donohue and Maragakis in preperation).

Many of the QI principles important for BHPs to be successful in the PCMH setting may be taught through didactics or through various online webinars. While understanding these principles are important, it is also important that BHPs consistently apply these principles in practice. This could be achieved through the use of case examples, where BHPs are asked to create their own PDSA cycle or create process maps and identify potential barriers in systems.

Informatics

The use of technologies in medicine has vastly improved quality and safety. Given this, BHPs must also be trained on how to use these technologies to improve the quality of care that they deliver. While this is a relatively new field in behavioral health, technologies like electronic health records (ERHs) and eHealth websites discussed above may be critical to the success of BHPs in PCMHs. It is fair to say that the informatics associated with behavioral health have lagged behind those associated with physical medicine. There are few decision support tools in behavioral health, and behavioral health professionals need to take a leadership role in addressing these gaps. The goal should be high-quality EHRs that are inclusive of behavioral health that lead to the realization of all the goals of a PCMH.

Management Skills

BHPs must have a skill set that is involved in flourishing in an innovation such as a PCMH. It would be wrong to think all one needs are skills necessary to function in a static, well-defined clinical role. PCMHs need to be designed, built, managed, improved, staffed, and funded and thus need professionals to fill these roles. While not all behavioral health professionals need these management skills sets, the more that do the more likely behavioral health will have an optimal role in these innovations. Thus, basic management skills may need to be taught, such as strategic planning, human resource skills, financial and budgeting, marketing, and basic knowledge of health-care economics; health-care policy would also be helpful. We turn to this next.

Economics of Health Care

The “big picture” needs to be seen in order to understand the extent to which a PCMH is meeting the goals involved in this big picture. A large and often neglected factor in behavior health training is an understanding of the economics of health care (see Wendell et al. 2013). Given health-care reform’s emphasis on reducing costs while improving the efficiency and quality of care, BHPs must be able to demonstrate that their services are in line with those overall economic goals. This requires that BHPs be familiar with basic principles of economics and business and be able to design systems that capture how behavioral health services are influencing cost.

Competency I: Interpersonal Communication

There is some notion that interpersonal communication may be somewhat unique or more demanding in integrated delivery systems. For example, given the emphasis of PCMHs on patient centeredness, it is imperative that BHPs are competent in efficiently building rapport and a consensus with patients, their families, as well as other health-care providers, particularly those on the PCHM team. Coordinating care across these stakeholders may require unique communication and problem-solving skills. It is fair to say "patient centeredness" has not typically been an emphasis in traditional training of BHPs, although there may be related concerns (e.g., working with a client to establish a treatment plan). It is also important for BHPs to empower their patients and families to assume increased responsibility for the management of their health and health care. This can be a very challenging task especially with complex cases. This also must be done efficiently if PCMHs are to realize their goals of containing or reducing health-care costs. However, beyond motivational interviewing (Miller 2009), there are few empirically supported models for achieving these communicative goals or enhancing these communicative processes.

Competency II: Collaboration and Teamwork

Collaboration between patients and a team of health-care providers is considered an essential component of PCMH. Therefore, the BHP must be able to function effectively within the context of these teams, with both providers within their health-care setting and external health-care providers. Traditionally, team-building skills and working in a team are not taught in graduate programs, where the normative setting is assumed to be a solo practice model in delivery systems that are siloed. Ought the behavioral health professional with their possible more extensive training in "talk therapy" be seen as a key team member regarding team building? Therefore, training BHPs to operate effectively within these teams, understanding the roles of other professionals, and learning to be assertive, nonaggressive, consensus building, efficient communicators, who use and teach validation and interpersonal problem solving, might be important priorities to ensure their success in PCMHs.

Team-Based Care

Team-based care goes beyond the providers within a given health-care system and includes all health-care providers an individual client may come in contact with. The BHP must help, create, and implement a collaborative care plan that is agreed upon by the treatment team as well as the patient (see the section "Competency IV: Care Planning and Care Coordination"). Traditionally, students are taught to develop their own treatment plans that typically do not directly involve other healthcare professionals. Ideally in a didactic setting, behavioral health (e.g., psychology, social work, marriage and family therapy) and medical (e.g., medical doctors, nurse practitioners, pharmacists) students would be able to take a course together and have hands on experience of interacting with as a team using case examples. Although, admittedly, the processes and even the outcome for these interdisciplinary care plans are not well developed and/or well understood.

Medical Literacy

To help with the effectiveness and utility of a BHP within the team-based approach, it has been recommended that BHPs become medically literate (O'Donohue et al. 2009). This recommendation does not mean that BHPs must undergo intense medical training to be effective within the context of a PCHM. However, traditionally mental health professionals receive little or no training in medical terminology or basic pathophysiology. They might not be taught the difference between a type I and type II diabetic, for instance. If a behavioral health professional is not medically literate, then they cannot function as part of the interdisciplinary care team. They need to understand what is being said and what medical problems are at issue. The ability to understand discussions about common medical conditions seen in the primary care settings, like diabetes, coronary conditions, and chronic obstructive pulmonary disease (COPD) is consider imperative for a BHP to be effective. This medical literacy can be obtained through didactic courses that are designed to help nonmedical professionals understand medical terms and obtained through experience in supervised settings like graduate practica, internship, and postdoctoral fellowships. However, one must recognize that there is a fair amount that needs to be learned and learned rather well.

Competency III: Screening and Assessment

Effective screening and assessment of behavioral health concerns within the primary care setting is a key factor for the success of any integrated care setting. Without proper screening and assessment of behavioral health concerns that trigger primary care providers (PCPs) to initiate processes like the "hallway handoff," behavioral health problems are more likely to go unnoticed and individuals are less likely to receive the support and care they need. Given the importance of this step, it is important that training and workforce development focus on some key factors of screening and assessment to ensure that behavior health screening is successful in the primary care setting.

For behavioral health screening to be most effective in the primary care setting, these must be short and as easy as possible for PCPs and support staff to administer, score, and determine in a referral to the BHP is warranted. There are currently plenty of behavioral health screens that meet these specifications (e.g., the Patient Health Questionnaire, the Duke, the Pediatric Checklist). Given this, training of BHPs should involve understanding the utility of each these types of screenings and the strength and limitations of using these. Skills must also be taught to integrate these into multidisciplinary treatment planning. Beyond understanding the screening tools, BHPs must also be trained in how to properly implement and ensure that follow up assessment to screening indications is being conducted properly and again integrated into multidisciplinary plans. As mentioned earlier, if there is a problem with screening, then there is a high likelihood that proper referrals will not be made, and the BHP will not be able to perform the services needed to improve overall health outcomes.

Shifting from a Diagnostic Focus to a Functional Focus

A "diagnostic focus" on behavioral health concerns, for example, as found in the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 places both the PCP and BHP in a predicament of "curing" the patient of their mental health problems, which is rarely ever the case in the primary care setting(Robinson and Strosahl 2009). Rather than focus on alleviating mental health diagnoses that have poor inter-rater reliability to begin with, some have advocated for BHPs to focus on improving functional status while referring to traditional specialty care for those who require treatment for DSM-5 diagnoses (Robinson and Strosahl 2009). Training of BHPs should involve learning to ask and assess for functional status and recent functional problems that a patient may be experiencing (e.g., number of sick days at work, ability to parent, changes in self-care, changes in mobility). By training BHPs to focus and track these functional changes, rather than symptom reduction, patients, PCPs, and even third-party payers may be provided with more meaningful data on how interventions are influencing a client's life.

Competency IV: Care Planning and Care Coordination

Care planning and care coordination among internal and external providers is another key component of PCMHs. The goal of this competency is to ensure that all medical providers, in collaboration with the patient, are striving for the same goals. By doing this, redundancies caused from various providers conducting similar tests to rule out similar issues may be avoided, reducing medical costs and improving quality of care. A key problem in fractionated care is a lack of continuity of care. It is critical that the BHPs learn to work with care managers and others to improve this dimension.

Case Management Skills

Case management is a common and important function of BHPs. While some BHPs have more rigorous training in case management (e.g., social workers), others have limited to no formal training dedicated to helping clients find basic resources that may improve their current situation. The ability to provide case management services effectively is needed, because the roots of presenting behavioral health problems may be due to these kinds of pragmatic issues. For example, an individual experiencing panic attack due to their loss of a job and impending power being shut off may benefit more from applying for an energy voucher with the power company, rather than treatment for panic symptoms. Therefore, all BHPs who are planning in working in integrated care settings may benefit from didactic courses dedicated to helping providers navigate social security, disability, and other entitlement agencies.

Competency V: Intervention

Behavioral health interventions are the cornerstone for BHPs. Training in evidence-based practices is a must for BHPs to meet the needs of patients seen in PCMHs. However, for BHPs to be most effective in the PCMH, they require specialized training in interventions that are not commonly emphasized in current training paradigms. Without this various methods of delivering evidence-based interventions, BHPs are likely to fail and not to impact quality of care. PCMHs also have an emphasis on health literacy and prevention which again have received far less attention in traditional training programs.

Shifting from the 50-min Appointment to Meet Clinic Needs

Many BHPs are traditionally trained to interact with patients within the context of the 50-min therapy appointment. In addition, in traditional psychotherapy, “short-term” psychotherapy is considered to be 12–15 50-min sessions. While this may be the appropriate modality of treatment for some clients, many advocate for a more fast-paced style of intervention to match the pace of PCPs (Cummings 2011). Given the high volume of individuals seen by PCPs, a BHP who engages in the traditional modality of intense, individual therapy for each referral made, will find themselves with a full but low-volume caseload that cannot meet the current demands of clients presenting to the PCMH. This, in turn, will result in long wait times for those referred and will only allow access to behavioral health services to a select few, effectively minimizing many of the potential benefits of integrated care services.

Therefore, BHPs must be trained in brief interventions that will allow them to address behavioral health concerns, while allowing them to see a high volume of patients. However, it is also fair to say that the evidence base of these does not currently exist and needs to be developed. Some have advocated for empirically supported principles to be used—for example, exposure with anxiety problems or behavioral activation with problems such as depression (O'Donohue and Fisher 2012). However, the exact details of these as well as tests of these need to be studied urgently. The evidence-based and dosage effect questions for the 1–4-session 20-min contacts are currently too underdeveloped.

Group Interventions

Connected to the concept of creating an environment that BHPs can meet the high demand of the primary care setting, an emphasis on providing group interventions is needed. It is estimated that 75 % of patients who are engaged in behavioral health treatments are exclusively involved in individual treatment (Crane and Payne 2011). However, group interventions hold many advantages that are important to consider in PCMHs. For example, groups allow for clients who may require further assistance from the brief individual interventions to receive these services, while allowing BHPs to meet the high-volume needs of the primary care setting. An example of the use of groups and its effects of productivity has been demonstrated in the review conducted by the Department of Veterans Affairs, which indicated that group psychologists saw approximately six times the amount of patients in comparison to individual psychologists (Department of Veterans Affairs 2013). It appears that groups have the potential to increase the productivity of the BHP and to drive down costs (see O'Donohue et al. 2014 for a further discussion of this). Therefore, the ability to form and conduct groups effectively is an important skill for a BHP to master.

Stepped Care

While some individuals who present with behavioral health problems may require further assistance than brief individual therapy, others may have positive outcomes with less. A BHP's ability to effectively use stepped-care approaches that involve the least invasive or minimally disruptive interventions first is a key skill to be successful in the primary care setting (O'Donohue and Draper 2010). Evidence-based treatments in the form of bibliotherapy or eHealth interventions for depression and anxiety are readily available and, in many cases, are free to use. By providing these types of interventions to those who do not require more intensive forms of treatment allows for patients to achieve maximal benefit without placing extra burden on them or the health-care system. However, BHPs need to be trained to triage patients into the appropriate level of care and to administer these.

Population Management and Prevention

Population management and prevention is a major emphasis of PCMHs. BHPs thus need some training in epidemiology and to address both preventative and treatment protocols for high-frequency problems that traditionally have had less emphasis in mental health curricula such as obesity, smoking, exercise, pain management, chronic pain, and chronic disease management. Recommended training for all of these various types of intervention skills usually involves both didactic and practicum training. Didactic training focused on evidence-based practices for brief and group interventions would expose BHPs in training to the tools currently available. However, beyond didactic training, practicum experience implementing these brief and group interventions would also be required. This practicum experience is of upmost importance, because other factors, like writing notes effectively and efficiently, are also critical.

Competency VI: Cultural Competence and Adaptation

There are many aspects of behavioral health care, such as behavioral health screening devices, that have been created and validated in different languages to meet the need of those who receive services and do not speak English fluently or ask various questions depending on the individual's age to capture relevant issues during their phase of life. Being informed on where and how to access these materials can be valuable of providing the highest quality of care for future clients. A key issue can become identifying resources in patients' native languages (most often Spanish).

Training Processes

Traditional processes of education such as the face-to-face semester-long lecture have increasingly come under criticism. These traditional academic methods have been seen as expensive, intrusive, having access problems, and producing unknown or problematic outcomes. These sorts of criticism have spurred the development of innovative training processes. For example, the well-known Kahn Academy is widely recognized as producing a more efficient, less costly processes to help elementary and high school students learn a variety of academic subjects.

As previously stated though the bureaucratic structure of the educational establishment has been slow to embrace these innovations. These are often seen as threats rather than welcomed problem solutions to the numerous problems facing education. It is critical that training for the knowledge and skill set recognize these overarching problems and seek to address these with a strategic vision for workforce development.

A twenty-first-century health-care delivery system such as PCMHs needs a twenty-first-century educational and training system for workforce development. It is fair to say this is nearly completely missing at the present time.

Although it is beyond the scope of this chapter to completely define these processes, here are some broad outlines:

1. Educational processes themselves need to be designed and implemented within systematic QI systems. These need to show how efficient and effective they are by showing how these satisfy educational consumers, are low cost, reliably impart skills and knowledge in the shortest amount of time, and are comprehensive as well as other quality indicators.
2. Educational processes need to optimally use technology. The bricks and mortar semester-long lecture class are anachronistic. Educational content needs to be on the web, and distance learning technologies need to be used.
3. Organizations need to embrace the view that they are "learning organizations," where education is a constant. There are precedents for this, and the wheel does not need to be reinvented.
4. A strategic plan for workforce needs to be developed at the national level. While many are concentrating on the initial problems of implementing the ACA, fewer are focusing on probably one of the most difficult problems associated with it; workforce gaps (see O'Donohue and Maragakis for a discussion of this with related to BHPs and integrated care). This is a national or even an international problem, and a coordinated strategic plan is needed.

Summary and Conclusions

Therefore, in summary, the training agenda related to PCMHs has been a neglected topic. It is certainly difficult given controversies that have surrounded both the role of behavioral health in PCMHs and longstanding controversies regarding behavioral health training. PCMHs are an innovation requiring new skills sets, although some important areas of building consensus about these remain. Perhaps gap analyses need to be conducted to see what remains with regard to traditional training or training in integrated care. It is also important to recognize that the research base needs to be further developed, for example, more randomly controlled trials of brief interventions that are used in these settings, particularly developing and evaluating dimensions of these interventions that have been typically ignored such as being patient centered, team designed, and implemented. Training questions cannot be resolved until there is sufficient content from the research to identify what is effective and useful. Finally, training processes have to be developed that impart these skills in an efficient and effective manner. This is also a large task and requires an innovative mindset and a QI orientation.

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Chapter 5
The Patient-Centered Medical Home Model within an Integrated Primary Care System: Towards a European Model?

Christos Lionis and Elena Petelos

Global Issues and Introductory Remarks

During the past few decades, three strong trends have emerged in health-care provision: a strong focus on specialized and tertiary care, marked fragmentation due to multiplication of projects, programs, and piloted interventions, and the pervasive commercialization of health care in unregulated health-care systems (Starfield 1998). These elements highlighted the need for placing emphasis on primary care. This need was recognized in both the USA and Europe, with the World Health Organization (WHO) placing additional emphasis on primary health care (PHC); (WHO 2008) by stating in its report:

> The starkly different social, economic and health realities faced by countries must inform the way forward for primary health care. […] Despite the need for contextual specificity, there are crosscutting elements in the reforms, common to all countries, which provide a basis for globally shared learning and understanding about how PHC reforms can be advanced more systematically everywhere.

Health reform efforts in the 1980s and 1990s, to address pressing issues, lacked consistent focus to allow the systems to gravitate towards PHC to efficiently tackle the cost-related challenges that triggered them. They, also, insufficiently addressed chronic illness challenges in an increasingly aging population. As a result, health-care systems have become more fragmented and pulled away from rational priorities and contextually relevant, need-driven interventions that take into consideration public health issues and population health-care aspects.

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W. O’Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_5

The resulting situation has been an even more disproportionate, and very costly, focus on tertiary care, often referred to as "hospital centrism" (WHO 2008). Although the value of modern hospitals, with state-of-the-art technology and subspecialists, should be acknowledged—they do have a pivotal role in health systems—the disproportionate focus on them has resulted in inefficiency, inequality, and waste, elements that have proved extremely resilient, with subspecialization taking up an inordinate amount of resources, priorities, and overall focus.

In high-income countries, some of these trends have been successfully offset to a degree by investment on additional programs and implementation of models focusing on chronic care and prevention. However, in countries where health care remains underfunded or primary care is not well-structured or remains underdeveloped and/or where regulatory capacity and policy making have been limited and misaligned, such issues have been exacerbated, leading to access chasm, inequalities in health provision, and, ultimately, to frustration for providers and patients. In recent years, the economic crisis, felt across continents and leading to austerity measures across European countries, has further worsened the situation, with socioeconomic determinants affecting access to resources and giving rise to health disparities across social strata. Of course, in countries where the crisis has been severe, and in cases where this was coupled by lack of funds, isolated and irrelevant reform measures, the effect has been exacerbated. The impact of the crisis on health and welfare has been reported and discussed in many papers in the literature, where many examples have been drawn from Greece. A much discussed report by Kentikelenis et al. (2014) elaborates on how austerity measures have affected the health and overall well-being of the Greek population, along with access to public health services, while at the same time it examines the political response to the mounting evidence of a Greek public health tragedy. In addition, a number of Greek rural general practitioners (GPs) from Crete, and feeling strongly about what they experience in their daily practice, have submitted a letter to the *Rural Remote Journal* expressing their unmet professional expectations and their concern and great uncertainty surrounding the future quality of primary care services available, as well as their role as providers of care in Greece during this unprecedented and protracted austerity period (Tsiligianni et al. 2013).

Additionally, overall global shortage of physicians and nurses is rapidly increasing and is estimated to rise steeply in the near future (World Health Organization. The World Health Report (WHO) 2006: working together for health (WHO 2006)). It is important to understand this is not a major issue only for developing countries but is rapidly becoming a serious health-care provision and public health issue in developed countries, especially in countries that were affected by the recent economic crisis, which happens to be the case for most European countries. The main reason for this is the population ageing, as it is shifting the demand curve for primary care provision upwards. In the USA alone, it is estimated that over 30 million "new" patients will drive the demand causing a serious undersupply of primary care physicians. In member countries of the Organization of Economic Cooperation and Development (OECD), the number of physicians has risen by 35 % during the past 15 years, driven by the number of specialists—the rise has been in the area of approximately 50 % between 1990 and 2005—compared with only a 20 % rise in the number of GPs (OECD Health Data 2007). This number is nowhere near sufficient to meet the rising demand for GPs. Another factor that should be taken into consideration is attrition in trainees, in developed countries, as for example, in England, where incentives for entering and staying in general practice have not managed to sufficiently compensate for the challenges encountered for this specialty (GP Taskforce Report 2014).

Another recent report from the UK (CFWI 2013) focusing on identifying reasons for attrition and ways to tackle these new challenges, including shortage, highlights the need to redefine the shape and scope of general practice in the context of integrated care. The report goes as far to state that practices should expand the range of services they offer, however, with nurses and pharmacists potentially taking a larger role. It, also, highlighted the seamless provision of care between primary and secondary care, for an improved patient experience, ideally, utilizing communications technology (ICT) tools—as, for example, electronic patient records—and addressing governance, insurance, and professional issues.

In the European Union (EU), the European Commission has announced calls in the Horizon 2020, the biggest program for research and innovation, focusing on the societal challenge of “health, demographic change, and well-being” for the years 2014 and 2015. It includes 34 topics on “personalizing health and care,” with particular emphasis on quality, patient centeredness, and cost-effectiveness, with three specific topics (PHC-20, 21, and 22) strongly addressing the issues of prevention and health aging through information and ICT innovation.

It is important to note that although maldistribution is the issue for some specialties/regions, in the USA, there are nowhere near enough primary care physicians virtually everywhere, as there is no policy-making mechanism to ensure sufficient distribution of physicians.

Programs and policies, both new and already existing, will focus on producing more family doctors, while issues of quality of care and patient safety have been broadly discussed within family medicine and general practice (FM/GP) during the past years, with FM/GP practice and research being the center of heated discussions in both Europe and the USA. This is especially true for the USA, where the recent reform is the first one attempted since Medicare was introduced in 1965, with a multitude of issues regarding fragmented primary care having amassed over decades. Similar considerations are relevant for some European countries stemming from the fact that contextual factors impede the implementation of a unified model.

These issues are relevant for the USA, with additional emphasis on the following:

- The patient-centered medical home (PCMH) model of care, which focuses on team-based care, centered on the patient, will continue as the model for care optimization
- The US health-care system has been undergoing major modifications in recent years.

The major policy driver has been to render primary and preventive care a reality, with universal access and comprehensive coverage. Various elements were introduced with the 2010 Patient Protection and Affordable Care Act (ACA) (2010), aiming to create a patient-centered system with a strong focus on primary care and integrated care provision. The staggered reform, with implementation elements during the 5-year period following the ACA (i.e., 2010–2015), specifically aimed to lower cost and improve quality, and, also, to increase access and consumer protection. Linking payment to quality outcomes and incentivizing through the accountable care organizations (ACOs) to organize the coordination of patient care, along with introducing standards for billing and the use of electronic health record (EHR) has been a strong element. Also, introducing incentives of provider coordination and quality improvement has been performed through various payment bundling mechanisms and additional funding for state Medicaid to cover preventive services.

Linking physician payment to care quality has been the last element to conclude this reform. With the US health-care system undergoing reform, US primary care remains fragmented, with PHC often being provided by a medical generalist, and any continuity of care at primary level attempted as provision by specialists, particularly from internal medicine or pediatrics (Clarke and Cohen 2013). Such provision is, of course, resulting in much higher costs, burdening the US health-care system, and consuming an excessive proportion of funds. Additionally, with even minor conditions being investigated by specialists, it only follows that there is a degree of over-testing, along with potential overdiagnosis and overtreatment, given differing practices in terms of gate keeping, continuity of care, and, of course, even higher costs and inappropriate use of very limited resources. Indeed, until very recently, although the US spending was far higher than most other countries, the capacity in IT/ICT utilization and PHC practitioners continued to seriously lack, with few incentives for after-hours care and targeted support for improving PHC (Schoen et al. 2009; Clarke and Cohen 2013). Nevertheless, the measures, recently taken, in context of the health-care reform happening in the USA, do encompass PHC. A number of high-level physician organizations have coordinated their efforts to produce a statement about a new way to organize primary care, namely, the "Medical Home". The statement release incorporates notions and ideas about quality, organizational aspects, ICT, and the continuity of care. This effort, and its respective output, is examined in detail in further sections of this chapter.

Similar issues in Europe, despite different settings, cultural context, and policy-making considerations, have resulted in various efforts that are indicating a cross-border effort may be not only relevant but also possible. For example, the National Health Services Research Institute of the Netherlands (NIVEL), also, a WHO collaborating center, developed instruments for the monitoring of the quality of primary care and to assess the level of its integration in primary care provision (http://www.nivel.nl/en/european-health-care-systems). Based on one of those instruments that were developed during the 2008–2009 period, data from 31 European countries have been collected and resulted in a standardized comparison and analysis of key dimensions (or functions) of primary care (Kringos et al. 2013). The first results of this EU-funded Primary Health Care Activity Monitor for Europe (PHAMEU) project that evaluate the strength of primary care structures and the service delivery process have been published in the *British Journal of General Practice* (Kringos et al. 2013). Based on a systematic review, Kringos et al. (2010) identified that strong primary care consists of seven core dimensions at the structure and process (service delivery) level of primary care. The structure of primary care consists of three dimensions: primary care governance, economic conditions of primary care, and primary care workforce development, while the primary care process is determined by four dimensions: accessibility,comprehensiveness, continuity, and coordination of primary care. According to the authors of the PHAMEU study, the main conclusions were (Kringos et al. 2013):

a. There exists a high variation in the strength of primary care across Europe.
b. It indicates a discrepancy in the responsibility given to primary care in national and international policy initiatives that needed a focus and investment.
c. Several countries need to improve their primary care information infrastructure to facilitate primary care performance management.

With another instrument and under the EU funds, NIVEL designed and implemented a second European project named the Quality and Costs of Primary Care in Europe (QUALICOPC),and this study aims to analyze and compare how primary healthcare systems in 35 countries perform in terms of quality, costs, and equity (Schäfer et al. 2013). The data generated from this program are currently being analyzed.

We can, therefore, surmise that in both, the USA and Europe, there is an ongoing debate on quality improvement in primary care, with the US reform still unfolding and a number of efforts in Europe to support relevant research, collect data, select indicators, and report on them so as to allow the selection and implementation of relevant elements and/or new models based on patient-centered care. It is important to note that Europe is placing more emphasis, given the heterogeneity of systems, practices, and cultural contexts, on staying focused on the measurement of diversity and the need to see the integrated primary care as the only solution. Despite variation, the same challenges are currently faced in both the USA and Europe. Keeping in mind it is policy makers that need to ensure that interests of patients and, indeed, citizens, and how they are best served in the long run, we shall attempt to examine in detail the concept of the "medical home", its relation to integrated care, and coordinated care. Although it is still at a nascent stage, there are reports on its effectiveness, and indeed, it correlates well with other models focusing on chronic care, so we shall attempt to look at relevant considerations and to see why and how Europe can best learn from this particular US effort in terms of organizing primary care.

The Principles of the PCMH: Theoretical Underpinning of the US model and Core Elements in Implemented Actions

The term "medical home" was originally used to describe a practice providing children with special needs with an "accessible, coordinated, family centered, culturally effective care by a pediatrician who in addition provides primary care and manages and/or facilitates all aspects of the care for these children" (Cooley and CCD 2004). This concept was first presented in a book published by the American Academy of Pediatrics in 1967 (AAP 1967).

Different efforts and definitions have come along over the last decade, but this is essentially a transformative way of organizing and delivering care, going beyond setting limitations, and proposing groundbreaking changes on who and how delivers primary care to patients. The Agency for Healthcare Research and Quality (AHRQ 2011) working with other agencies, and an amassing body of research, defined a medical home not simply as a place, but as a model to organize PHC, encompassing five main functions and attributes to organize PHC (AHRQ, 2011).

Comprehensive Care

The majority of the patient needs, both in terms of physical and mental health care, will be addressed. This includes, and, indeed, places additional emphasis on prevention and wellness. It includes both acute and chronic care, and at the core of such care provision, lies the combination of skills of a team of care providers. This entails an understanding of the abilities, competencies, and tasks of each team member; these teams go well beyond more "traditional" models of physicians and nurses and include physician assistants, pharmacists, nutritionists, educators and social workers, and care coordinators. The community into which such a team deploys its effort will determine external resource utilization (e.g., community facilities) and the size of the practice or perhaps even the geographical position (e.g., islands, mountainous, and/or other isolated areas) will determine whether a team should supplement its composition by expanding through virtual environments and/or generating a virtual team and linking with other providers and services. It is, therefore, apparent that even for this first core attribute, ICT can play an instrumental role overcoming limitations, ensuring continuity, optimizing resource utilization in a cost-efficient manner, and bridging gaps.

Patient Centeredness

The orientation of care should be focused on the needs of the patient. Quality of care should be defined by patient needs and preferences, and the relationships built with providers within the primary care medical home should always be guided by the concept of patient centeredness. In other words, the concept emerging should be that of a PCMH. Providers should partner with the patients and their families, taking into consideration the values, cultural sensitivities, and sensibilities of the patients and understanding and respecting the unique needs of each patient. This is an essential element to allow the practitioner–patient to build a relationship of trust, which can in turn form a robust basis to allow shared decision making to take place to help the patient manage and organize his/her care at the level she/he chooses, and—ultimately—allow the launch of self-management for any patient—citizen, attending the PCMH. Essentially, this defines the PCMH as an institution that actively supports the education of practitioners in patient preferences, expectations, wishes, and the learning of patients on self-management within a partnership basis.

Coordinated Care

All health-care needs, including community services, but also tertiary care, are to be organized at the level of the PCMH. This is critical when transitioning between sites of care and levels of care, for example, when following up with a chronically ill patient being discharged following after hospitalization for an acute episode. Establishing clear and open communication, tracking decisions, responding to queries, and facilitating the overall communication of the broader care team, allows for well-coordinated care.

Accessibility

Access is facilitated in all ways possible, with particular attention being paid to patient needs. Prioritization allows for urgent needs to be addressed in a timely fashion, whereas the use of ICT tools allows for phone, remote, and/or electronic access to resources and to team members. E-mail and telephone care are emerging aspects, with round-the-clock care becoming a reality to help the patient better manage her/his needs.

The PCMH delivers accessible services with shorter waiting times for urgent needs, enhanced in-person hours, around-the-clock telephone or electronic access to a member of the care team, and alternative methods of communication such as e-mail and telephone care. The medical home practice is responsive to patients' preferences regarding access.

Quality and Safety

As previously mentioned, quality improvement is at the core of all efforts and activities, supported by practicing evidence-based medicine and utilizing decision-support tools to allow the team and patients to engage in an open dialogue and shared decision making. Patients and families are encouraged and supported to engage in measurement and improvement, and efforts are made to elicit patient preferences, track patient experiences, and ensure patient satisfaction. Public health needs are also taken into consideration to better manage resources and to allow team members to practice taking into consideration population health management. All quality and safety data are generated in a robust manner, with data being shared publicly, thus, ensuring transparency and system-level commitment to quality. All of these elements are described in detail, along with mapping recent efforts and relevant reporting on the site of the AHRQ http://pcmh.ahrq.gov/.

It is important to note that the "medical home" or "primary care medical home" or "PCMH" model in the USA is, as previously mentioned, at an early stage of development, largely because the predominant form of payment to primary care physicians is still fee-for-service and the independent nature of most physician practices does not lend itself to the formation of the more integrated service delivery systems and networks familiar to many European nations. Nevertheless, early findings from several demonstrations are encouraging and the ACA of 2010 promotes the adoption of patient-centered care (Patient Protection and Affordable Care Act, S. 6301, 111th Cong., 2nd Session, 2010).

Considerations for the Relevance and Translatability of the PCMH Core Elements in the European Context

To establish which core elements, and combination thereof, of the PCMH are the most relevant for the European context, it is important to examine the various types of PCMH efforts that have taken place, to allow for the assessment of their effectiveness and sustainability in terms of reorganizing PHC and meeting the challenges discussed in the first section of this chapter. However, as formulation of the PCMH is relatively recent, and efforts are relatively sparse and highly heterogeneous, along with the limited evidence generated on its overall effectiveness, we need to identify ways to align previous efforts with the current framework. For example, substantial evidence for the key characteristics described in the previous section aligns well with the empirically derived framework of the Wagner Chronic Care Model (Wagner 1998; Pawlson et al. 2011). A number of ICT tools and shared decision-making tools, such as clinical information systems and registries, and quality of care instruments, such as performance measurement indicators, feedback systems, etc., have been described in the context of improving clinical outcomes and the patient's experience of care(Wagner et al. 2001; Adams et al. 2007; Pawlson et al. 2011). Additionally, isolated model components have been identified and have been the object of randomized controlled trials (RCTs). Such RCTs have allowed the assessment of effectiveness of quality measurement, benchmarking, and feedback and the results have been reported (Tsai et al. 2005; Shortell et al. 2004; Kiefe et al. 2001).

For example, the Community Care of North Carolina (CCNC) project was implemented in 94 communities in North Carolina (NC), in an approach essentially modeled so as to incorporate many of the core attributes of the PCMH for the NC Medicaid patients—a total of over 650,000 patients—and having performed two evaluation studies they have reported not only substantial cost savings to the NC state Medicaid program but also considerable improvement across counties for patients with asthma, congestive heart failure, and diabetes (Pawlson et al. 2011). Additionally, the Commonwealth Fund has published evidence for the role of PCMH in successfully reducing disparities. They refer to a practice offering enhanced access to physicians with regular source of care provided through a "medical home", reporting that patient experienced improved access and received a higher level of preventive and chronic illness services independently of instance status, race, or gender. Furthermore, there was a specific comparison with patients receiving care in practice lacking these characteristics (Beal et al. 2007; Pawlson et al. 2011).

To examine efforts in Europe, it is important to visit historically the perspective of the GP and the starting point could be considered the emergence of a new definition of GP in Europe. It has been considered as a high priority for the agenda of the World Organization of Family Doctors chapter in Europe (WONCA Europe) since 2000 and the new definition was approved in 2002 (Allen et al. 2002). This definition highlights 12 characteristics of the discipline of GP/FM, clustered into six independent categories of core competence, namely primary care management, person-centered care, specific problem-solving skills, comprehensive, community orientation, and holistic approach (Allen et al. 2011), while the characteristic "patient empowerment" has been added to the new version (Gay 2013). Up until now, ten translations in different European languages have been reported (http://www.woncaeurope.org), while this definition has affected the educational policy of many GP colleges and associations (Lionis et al. 2008), and it has guided the research agenda of WONCA Europe (Hummers-Pradier et al. 2009b). By reviewing this European GP approach under the light of the PCMH model, we found certain similarities in terms of their essential attributes with the person-centered care, comprehensive, and holistic approach to be comparable with the comprehensive and patient-centered and coordinated care of the PCMH model. The primary care management of the European definition presents also certain similarities with the accessible services of the US model, while quality and safety as independent core competences or functions are not represented in the European definition.

As an effort of the European General Practice Research Network (EGPRN), the research agenda for the European GP has been recently formed. It summarizes the evidence relating to the core competencies and characteristics of the WONCA Europe definition of GP/FM, and its main purpose is to assist both researchers and policy makers to identify gaps on existing evidence and needs for research (Hummers-Pradier et al. 2009a). In this context, Van Royen et al. (2010) reviewed the literature on the three core competencies ("person-centered care," "comprehensive approach," and "holistic approach" and they concluded that there is an important body of opinion papers and (nonsystematic) reviews, but all the three person-related aspects remained poorly defined, researched, and that validated instruments to measure these competencies were lacking. The EGPRN team in its last paper of the series of this project concluded that "Primary care evolves towards more interdisciplinary care, and research should focus more on the core competency of person-centered team care. There is an urgent need to develop clear definitions and appropriate research instruments for this domain. It will be a particular challenge to study comprehensive approaches in primary-care patients with multi-morbidity" (Van Royen et al. 2011).

As we have already stated, based on the findings of the literature, Kringos and colleagues (2010) attempted to develop a set of indicators as a composition of the characteristics (dimensions and features) of primary care systems with the name primary care monitoring system (PC monitor). In their subsequent comparative study, Kringos and colleagues (2013) identified that strong primary care consists of seven core dimensions at the structure and process (service delivery) level of primary care with the structure of primary care to be consisted of three dimensions (primary care governance, economic conditions of primary care, and primary care workforce development) and the primary care process to be determined by four dimensions (accessibility of primary care, comprehensiveness of primary care, continuity of primary care, and coordination of primary care). This European set of indicators also presents many similarities with the PCMH, since it includes four of the five the attributes and functions of this model, as application in the European setting has revealed. In terms of the feature of comprehensive primary care services, both curative and preventive, countries that rated high in the list include Belgium, Bulgaria, Finland, France, Lithuania, Norway, Portugal, Spain, Sweden, and the UK (Kringos et al. 2013). This comparative study reported that electronic patient records systems are not the case in many European settings, and they are not frequently used for advanced purposes, such as prevention and public health activities, information exchange with peers, and medical record keeping. With simple words, continuity is one of the visible needs for a unified primary care system in Europe, and we could add that the European primary care consumers are relatively dissatisfied with primary care providers' communication skills and the duration of the consultation, as clearly Kringos and colleagues (2013) summarized in their paper. In terms of the coordination, the authors of this study reported that the cooperation and coordination between GPs and medical specialists encounters specific challenges and barriers in many countries, while in general, nurses and other primary care providers have limited tasks in primary care. At the moment, additional evidence reporting is expected in terms of quality and cost of primary care services in Europe from the QUALICOPC study, an EU-funded program that aims to analyze and compare how PHC systems in 35 countries perform in terms of quality, costs, and equity (Schäfer et al. 2013). This study carried out amidst the economic crisis that has affected all European countries, albeit some much more severely than others, is concluded with results currently expected with high interest from researchers and policy makers alike.

In essence, it is apparent that the core attributes of the PCMH have been discussed in Europe either on the basis of the European definition of GP or the EG-PRN Project on research agenda and in the context of the two NIVEL European comparatives studies. As previously highlighted, the only exception seems to be the feature of patient involvement in quality and patient safety, which has not so far been researched at a cross-border level in Europe. Finally, it is very important to mention that the high diversity and variability of primary care services in the European health-care systems has led to disparities and further fragmentation and that empirical evidence and discussion across professional bodies indicates these elements have been exacerbated by the recent economic crisis.

Additionally, with many different terms being utilized to describe the same thing or umbrella terms used to describe very divergent practices and concepts, another concern in adopting a comparative approach between the USA and Europe is that it is still rather unclear which attributes and functions are clearly understood and applicable in the various local settings across regions and countries of Europe. This is further complicated by the lack of standardized and validated tools and instruments to measure those functions; a well-documented fact by the EGPRN and numerous studies.

Patient-Centered Care and Integration: Two Essential Partners?

Although the term "integrated care" has received a lot of attention in the literature, with a lot of debate ensuing across continents, there is comparatively very little academic writing and reporting from the European primary care academics and healthcare practitioners. This seems to be a paradox, especially in a period with extremely limited resources and under the pressing conditions of a well-recognized economic crisis. There are European countries, including Greece, where clear evidence indicating integrated primary care is completely lacking (Lionis et al. 2009). It is also true that the term "integration" meets several definitions, but for the purposes of this chapter, we prefer to use the one adopted by the WHO, with integration referring to:

> […] [The] management and delivery of health services so that the client receive a continuum of preventive and curative services according to their needs over time and across different levels of the health system […].

In simple words, integration is at the core of the essential components of the previous US definition of PCMH or the NIVEL definition of effective primary care. Such a definition indicates teamwork, comprehension, coordination, and accessibility.

This chapter section aims to address two fundamental questions; the first being why integrated care has received so little academic writing, and the second being why and how are integrated care and patient-centered care interrelated? A third issue that, also, deserves some exploration is why we currently need to focus on both concepts, what the pressing challenges we are facing are necessitating we turn our interest to that direction.

To address the first question, it is important to make clear what we mean when referring to integrated and coordinated care and how we differentiate between the two. Coordination is particularly understood to be needed and/or to take place when transitions between sites of care, such as when patients are being discharged from the hospital or moving across the various communities health care services. Integration is a wider term, more relevant to describe how various services either preventive or curative are delivered to one person over time in an integrated, seamless fashion. Differences in contextual and organizational settings or in understanding multidisciplinarity, and roles and responsibilities, within teams may place barriers in the delivery of integrated care. The extent, to which those differences are a result of or can be addressed by training and/or continuous professional development, is a matter requiring further study. There is certainly a lack of coordinated efforts with specific focus on these aspects at a wider European level and with consistent investment and policy support.

The second question requires a more thorough exploration of the five attributes and functions of the PCMH with the aim to examine the components and details and assess their overall fit in with the concept of integrated care delivery.

An example of such exercise is given by the joint work that representatives from six national family medicine organizations namely the American Academy of Family Physicians (AAFP), the American Board of Family Medicine (ABFM), the Association of Departments of Family Medicine (ADFM), the Association of Family Medicine Residency Directors (AFMRD), the North American Primary Care Research Group (NAPCRG), and the Society of Teachers of Family Medicine (STFM) have signed together. Those organization together with other five organizations, namely the American Academy of Pediatrics (AAP), the American Osteopathic Association (AOA), and the American College of Physicians (ACP), the Collaborative Family Healthcare Association (CFHA), and the American Psychological Association (APA) have produced and recently published joint principles on integrating behavioral health care into the PCMH (2014). This joint statement offered a complementary set of joint principles that recognize the centrality of behavioral health care as part of the PCMH. In this document, the US organizations were mentioning the principle of personal physician, the physician-directed medical practice, the whole-person orientation, the coordinated and integrated care, the enhanced access, and payment system. In a similar way, we think that compassionate care could be considered as an integrated part of the PCMH. Similar was the approach of (2014) in stating:

> […] can assume that compassion may incorporate other concepts frequently utilized in GP/FM including patient centeredness and empathy. However, there is still much room for GP to place more emphasis on non pharmacological treatment and to emphasize a crossroad of medicine with other disciplines, particularly the psychological and social sciences […].

Finally, the last issue on which current conditions indicate the implementation of integrated care within effective models of primary care in Europe or the PCMH in the USA needs a focus on two clinical entities that they are accountable for the fragmentation of care services and high cost of health care, namely multimorbidity and frailty. Multimorbidity refers us, to the management for individuals with two or more health conditions (Mercer et al. 2009), while frailty is a clinical syndrome, rather than a disease, that involves individuals who present an increased risk for poor health outcomes including falls, incident disability, hospitalization, and mortality (Qian-Li Xue 2011; Bandeen-Roche et al. 2006; Fried et al. 2001; Gill et al. 2006; Graham et al. 2009).

Multimorbidity and frailty are two interrelated conditions and much literature has been dedicated on suitable interventions to manage related burdens. It is clear that effective management of multimorbidity requires integrated care and it is more visible when mental illness meets multimorbidity. Langan and colleagues (2013) recognize that:

> […] The central role of mental illness within the multimorbidity continuum and invite psychiatrists, GPs, researchers and policy makers urgently to discuss how best to develop and evaluate services that will improve physical, psychological and social outcomes […].

In a similar direction, Akner (2009) underlines that:

> […] an important challenge for future research and developments regarding the management of frailty and multimorbidity in elderly patients is to shift the focus from managing isolated diseases to managing multiple health problems and to expand the traditional medical organ-based examination and treatment with regularly recurring analyses of various system and functional domains […].

However, both patient-centered and integrated care arrive in a time, where Huber et al. (2011) propose the formulation of health as the ability to adapt and to self-manage. This statement opens a new avenue in approaching the patient orientation to health-care services and its potential effectiveness.

It is worth exploring further a particular facet of care provision that of the ever-rising need for psychosocial support at the level of primary care. This is particularly true given the chronic illness and aging population aspects previously discussed—with dementia and anxiety having the dimensions of a true global epidemic and with impact not only on the quality of life of the patients but also on the overall well-being, productivity, other family members, friends and relatives, and the overall cohesion of communities. The provision of psychological support for dementia and anxiety at primary care level—with rates on the rise as the population ages but with high prevalence across all age groups—and with multimorbidity limited mobility and death being additional issues patients have to deal with, is, perhaps, one of the most important elements to consider in any health-care system either side of the Atlantic. This applies both in terms of resource utilization, as well as in terms of optimizing how various resources can be used, for example, to examine the degree to which PHC, community resources, and virtual teams can further help alleviate such issues, as early on as possible and even on a preventative basis.

To provide some insight as to why this is such an important issue, it is worth quoting empirical evidence compounded by recent reports; more than 70 % of primary care visits are related to psychosocial issues, including anxiety and depression. Although few primary care physicians currently have the resources to help patients address those issues, a new program at the Harvard Medical School Center for Primary Care may show that investing in those services is worthwhile both for the provider and the patient. As part of the Center's Academic Innovations Collaborative, six of the 18 medical practices under the center will integrate behavioral health services into their primary care facilities. The initiative is funded through a 2-year grant, and the remaining 12 sites can apply next year.

PCMH and its Potential Relevance in Primary Care in Europe in the Austerity Period: A Shifting Paradigm?

To answer such a question, there are several others aspects to consider. For example, what about the impact of PCMH on clinical outcomes and doctor–patient consultation and satisfaction? Why do we need the patient-centered approach and to what extent this approach differs between the USA and Europe? What is the relevance of these aspects and how are they affected during harsh economic restrictions making investment in new efforts practically impossible?

There is much literature on many of these questions, and there is an agreement that in both settings that cost savings would allow to shift investment to primary care and improve quality overall health-care system quality (Davis et al. 2005). As previously mentioned, there is already evidence emerging with reports on patient-centered approaches resulting in reduced hospitalization and improved prevention. However, the question remains: How can we achieve patient-centered approaches especially in a changing world where primary care meets an aging population with multimorbidity and polypharmacy within a setting affected by the current economic crisis and health inequalities being exacerbated? An Australian document outlines the international perspective, trends, and initiatives in primary care where patient-centered approach and integration are underlined (Brown et al. 2013).

To further assess the current emphasis on cost-saving aspects and the role and impact PCMH could have in primary care setting severely affected by the economic crisis, we need to examine them under the lens of cost. In other words, whether and how they can offer not only a cost-effective but— rather—a cost-saving solution in a Europe affected by the crisis. We briefly examined examples of reports on establishing cost-saving practices in programs incorporating elements of the PCMH. What can European nations currently learn from the US experience in terms of cost-saving? Perhaps the most obvious lesson is that the PCMH model—with its emphasis on patient-centered, comprehensive, and continuous primary care—has some excellent ideas about how to promote health, prevent disease, and contain costs, as part of compassionate, affordable care for people with complex or chronic conditions. In the USA, the success of this approach will depend on aligning the necessary political will, policy support, underlying incentives (financial and professional), and creative, inspired training to implement and disseminate the Medical Home model throughout the health-care system (Fields et al. 2010). Indeed, the same challenges would be faced in all nations. Policy makers need to assess how patients' interests may best be served in the long run. However, much discussion is needed to determine to what extent this model is feasible and would be successful in a changing Europe, in a Europe with extensive heterogeneity primary care and enormous variation in paying systems, and in a Europe where, in many countries, the economic crisis has had a massive impact on the performance and the quality of PHC services. This, of course, despite the fact that access in countries with well-developed primary care systems appears to be unimpeded, with a very high percentage of patients experiencing no problems visiting their primary care provider because of costs even when there are out-of-pocket payments (e.g., Belgium, 24% of patients pay out of pocket, but 95% do not experience any barriers because of cost; Faber et al. 2013).

The PCMH is considered to be one of the most promising institutions to reform care delivery systems. Hussey and colleagues (2009) suggest that viable cost-control options that improve patient outcomes exist for both the public and private sectors. However, as there are various manners and approaches of implementing the model, thus resulting in a number of permutations in terms of implementation, it is important to identify and reinforce the elements that can be replicated, as well as the elements, which generate true values (Fields et al. 2010). It is also important to note that despite the growing interest in the PCHM approach, very little is known about the costs it actually entails, with lack of evidence analyzing the relationship between costs and “medical home” activities, per se, for the various practices that have adopted this approach as a model to follow (Zuckerman et al. 2009). As previously discussed, the founding principles set forth for medical homes encompass a broad list of characteristics, without, however, outlining the specific elements required to determine whether a practice can be considered to be a PCMH. In other words, there exists no single set of criteria to benchmark against and/or to compare initiatives, thus, introducing additional difficulties when the PCMH approach is discussed within the broader and more diverse European setting.

Recent reports (Fields et al. 2010; Fendrick et al. 2010; Webber 2009) identify four main elements as essential in evidence provided from reporting on the seven largest medical home pilots are:

1. Dedicated care managers
2. Expanded access
3. Performance management tools
4. Effective incentive payments

US federal policy emphasizes focus on such elements and investment in related initiatives. These efforts ought to be concerted and cannot take place without reform in health insurance legislation and guidance on how to best incorporate these core elements, offering in an effective and efficient manner guidance and incentives. Additionally, quality standards are required to be able to identify which practices achieve integrating these elements and, thus, gain “medical home” designation. The US National Committee for Quality Assurance (NCQA) developed a list of 30 elements at three different levels, with 10 of them considered mandatory for such a designation to be given (Fields et al. 2010), updating its guidelines twice over the past 3 years. The three dimensions emphasized by the 2014 standards are team-based care coordination, behavioral health integration, and care for high-need populations.

When examining the feasibility and transferability of any intervention, it is, of course, important to examine all contextual factors. This is of critical importance when we discuss the transferability of a model and additional initiatives to encourage its adoption. The USA has a very different system from the EU countries, in terms of payment for and reimbursement of services, with the fee-for-service payment being a core element in payment mechanisms. However, in the PCMH, there are, already, a number of different mechanisms adopted that differ from the fee-for-service payment and a combination of such mechanisms to support cost minimization for the PCMH. Although, this in itself makes comparison of PCMH initiatives difficult, it allows greater flexibility when discussing transferability, as the focus should be on practices that work rather than on attempting to transfer isolated organizational elements that will probably fail to instigate the same response out of context.

For example, there is evidence demonstrating that incentives should aim to motivate and/or modify behavior among providers and that these should be targeted, but not necessarily large (Fields et al. 2010). There are, for example, reports indicating that financial incentives designed to lower overall health-care spending can be effective even if they are modest (Gaynor et al 2004). Additionally, the overall reimbursement model for primary care should encompass the adoption of indicators to monitor and to allow the incentive mechanisms in place to reward the clear and consistent adoption of the desired medical home elements. It is, also, important to note that it would be worth examining how to reward collective teamwork, as for PCMH efforts to work, the practices must optimize their performance at team level (Grumbach and Bodenheimer 2004). They must "unlearn" inefficient behaviors and modify the practice management to respond to performance and quality indicators, something that implies there are new skills to learn, such as the ability to understand and interpret the meaning of the indicators and to develop new skills to translate results into efficient action for continuous improvement, particularly at the level of team action.

For Europe, additional effort has been made to address the overall cost and expenditure aspects. Recently, the Expert Panel on Effective Ways of Investing in Health (EXPH) was formed and convened to report on a definition of a frame of reference in relation to primary care with a special emphasis on financing systems and referral systems, acknowledging the interrelation between generalists and specialists, primary care, and care provided by specialists because primary care structures may be underdeveloped or totally absent (EXPH, EU 2014). Notably, the EXPH concluded that

> It is difficult to estimate and compare spending on primary care among EU countries due to the absence of a uniform definition of the services and providers involved in primary care. While some countries have found ways to define their primary care services and costs, there is a need for comparative research to improve our understanding of differences among EU countries.

However, in a manner consistent with the core attributes of the PCHM and of integrated care, the panel recommended that

> […] all EU Member States ensure an adequate level of financing for primary care, promote equitable access to primary care and provide incentives for efficiency and quality in primary care delivery, including care coordination.

Towards a European Patient-Centered Medical Home Model

As previously discussed, the PCMH provides a model of comprehensive care. At its core, it has the personal physician or the registered nurse, supported by a proactive team and IT tools. Given the recent efforts to improve primary care provision and curb costs in a heavily burdened health-care system, particularly for the chronically ill, frail, and economically disadvantaged groups in Europe, it would be important to compare and contrast the elements that have been or can be assimilated at the various European country settings. This brings us to amassing relevant evidence to allow for contextual analysis. In other words, the academic sector should focus on such topics, and a boost should be given on efforts to map, analyze, and pilot the elements of the PCMH that would be relevant for Europe. Additionally, educational curricula should familiarize practitioners with concepts of continuous quality improvement, integrated care, and compassionate (Shea et al. 2014), subjects that are often neglected in the training of physicians, but, also, other health practitioners. Modular courses, especially when offered in an accessible manner across teams would, also, allow practices to bridge the educational gap that may inhibit the understanding, adoption, and execution of such integrated care practices. The academic sector can be instrumental in supporting such efforts but for sustainable results, not without support from regional, national, and pan-European institutional frameworks. This applies both in terms of policy and of investment, as previously discussed.

To start with, it is always important to examine the evidence emerging from comparisons to the US model, bearing in mind the great variation on how PHC is organized in different European countries and that systems are heterogeneous both in terms of organizational aspects, degree of development, but, also, to a large extent, in terms of the context in which policy making is taking place. Additionally, the resources available to countries in the EU vary greatly, but the need to cut costs is evident in all systems, albeit for different reasons: in Western countries, for example, the well-developed primary care system has additional burden. In the Netherlands, the gatekeeping role of the Dutch GPs, and the recent efforts to strengthen it, have resulted in a demand-satisfying attitude contributing to the delivery of too much care at the system's point of entry (Wammes et al. 2014). Consequently, any resource redistribution should be planned and realistic priorities should be set. As the first few years of implementing any national or regional initiatives, both for incentivization and for boosting ICT tool utilization, virtual care and other such elements would be part of a greater learning curve, expectations should be realistic and performance should be monitored but along realistic goals. Furthermore, policy makers need to understand that isolated efforts cannot ensure a sustainable result, and the best starting point would be to adopt core values, describe, and assess limitation of primary care provision at their respective setting, but long-term commitment even to incremental improvement at system, rather than at practice, level.

Given the recent efforts to ensure cross-border health care and to safeguard patient rights in Europe, future EU funding should reinforce the emphasis on cross-border alignment for primary care. According to the Cross-Border Directive of the European Parliament (2011), the aim should be to meet the patients' expectation for the highest quality health care, which is even higher when seeking treatment from home. The PCMH could be the institution, supported by strong ICT efforts and virtual teams with cultural and linguistic context and financially through EU-HORIZON programs support, to allow for better quality and improved safety. It would, also, strongly reinforce an aspect clearly lacking, that of helping them maintain self-management, engage in shared decision making, and—ultimately—make informed choices if already abroad or before going abroad for health care.

Finally, as there are a number of European countries that have implemented aspects of the medical home and reporting of positive results (Rasmussen et al. 2007; Gulliford et al. 2007), and as this trend is bound to be increasing with implementation on the rise, albeit currently in isolated efforts, the USA should, also, try and learn from Europe, a fact highlighted by the ACP in a recent position paper (APA 2010). In terms of academic research, but, also, policy making, a starting point could be a more structured collaboration between the two continents, with lessons learned and best practice experiences being shared even ahead of reporting. There is currently an important effort on eHealth, supported by a Memorandum of Understanding between the USA and EU. This supporting basis for ICT has been focused on EHRs, specialized and tertiary care, but it could complement such an effort and serve as a starting point for an expanded dialogue to include primary care.

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Chapter 6
The Importance of Stepped-Care Protocols for the Redesign of Behavioral Health Care in Patient-Centered Medical Homes

Robert E. McGrath and William O’Donohue

The demonstration of treatment efficacy under relatively idealized conditions (e.g., participants are randomly assigned to treatment, excluded for comorbid conditions, and paid to enhance retention) remains the appropriate starting point for the development of evidence-based psychological health-care systems.[1] Once efficacy treatment has been established, other considerations can become more prominent. Common targets for subsequent research include treatment effectiveness (symptom improvement under more naturalistic conditions; e.g., Fleischhacker and Goodwin 2009; Seligman 1995) and dissemination efforts (e.g., Woolf 2008).

This chapter focuses on another set of questions that can follow the demonstration of treatment efficacy, having to do with the integration of that treatment in stepped-care protocols. While stepped-care research has received somewhat less attention than effectiveness and translation research as successors to efficacy research, we believe the development of evidence-based stepped-care protocols is essential for the optimal evolution of psychological services, particularly in the context of the significant problems facing the existing health-care system (Wendel et al. 2013). After introducing the concept of stepped care, we outline five reasons for the importance of developing evidence-based stepped-care protocols for patient-centered medical homes (PCMHs). We then finish with a review of some of the obstacles to their development and implementation.

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[1] We use the term *psychological health care* broadly, to encompass any clinical approach that is derived from psychological theory or that is intended to address conditions with a significant psychological component. The term intentionally encompasses behavioral interventions for traditionally medical conditions, psychotherapy, behavior therapy, and psychopharmacology.

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W. O’Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_6

An Introduction to Stepped Care

Stepped care represents a special case of *adaptive interventions*, that is, interventions in which treatment models are individualized through adjustment over time (e.g., Nahum-Shani et al. 2012a). The administration of adaptive interventions is a dynamic process in which data collected during the process of treatment determine subsequent transitions. The implementation of adaptive interventions is central to the provision of evidence-based care. According to Weisz et al. (2004), evidence-based practice occurs when failure to respond to a particular intervention is not treated as a "treatment failure" or as a sufficient justification for extended administration of that intervention, but as a basis for adjusting the intervention. From this perspective, evidence-based practice is a process of adaptive intervention based on the available empirical evidence.

Stepped-care protocols are distinct from other adaptive interventions in that many, if not all, transitions involve some escalation in the "burden" of treatment. The protocol typically begins with a relatively low-burden intervention. Interventions with a higher burden are introduced based on the patient's response—or lack thereof—to prior treatment. This process continues until an adequate treatment response is demonstrated. The concept of treatment burden is a multidimensional one: It can include variation on the basis of level of professional interaction, cost, effort required of the patient, length or intensity of treatment, and/or severity of the intervention's side-effect profile.

Stepped-care protocol research complements other forms of intervention research. Where effectiveness and translational studies differ from efficacy studies primarily in their focus on naturalistic rather than artificial *treatment conditions,* stepped-care studies differ from efficacy studies primarily in their focus on multiple interrelated treatments rather than single *treatments*. Where effectiveness and translational research focus on the *application* of efficacy evidence across situations, stepped care also has to do with the *integration* of that evidence across interventions. Where effectiveness and translational research extends what efficacy research reveals about a specific *treatment,* stepped-care research extends what efficacy research reveals about the *target* of treatment (e.g., the patient diagnosis).[2]

As with all evidence-based adaptive interventions, a well-developed stepped-care protocol consists not only of a series of coordinated evidence-based interventions but also involves a series of decision rules for initial triage and for shifting from one intervention to the next. Ideally, these decision rules are also evidence-based, though in the section on research below we will discuss some of the obstacles to achieving this ideal. In integrated care contexts, such as PCMHs, another consideration is the involvement of multiple professionals in triage and the delivery of the stepped-care protocol—for example, the PCP or the BCP, or the team may decide on an initial level of treatment and failure at one level—say a brief intervention delivered by the BCP may at the next step involve increased involvement of another professional on the team—for example, the PCP in prescribing psychotropic medications.

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[2] It may help clarify our point to insert the word "diagnosis" here instead of "target of treatment." Later, though, we will discuss the value of broadening the scope beyond diagnoses.

The use of stepped care in the treatment of depression will be used as a general illustration of the stepped-care model. Using depression as our example has both advantages and disadvantages. On the one hand, it is unlikely any other diagnostic category has been the subject of more efficacy research, and there is even a decent body of literature on the stepped care of depression. On the other hand, the development of a *comprehensive* stepped-care protocol—a term we will use to refer to protocols that take into consideration the entire spectrum of empirically supported treatments, even if these are nontraditional and do not rely on contact with professionals—is particularly problematic for depression, because the existing literature suggests that a wide variety of treatments capable of enhancing behavioral engagement or a sense of hopefulness can potentially mitigate the severity of the problem.

With that caveat in mind, the following is an example of a stepped-care protocol for depression. This protocol is based on one introduced by O'Donohue and Draper (2011), though it has been refined in light of additional empirical literature. We will use this protocol to illustrate latter points about the advantages of stepped-care protocols:

1. Watchful waiting: Depression may also differ from other disorders in its spontaneous remission rate. It has been estimated that about a third of major depressive episodes remit within 6 months (Whiteford et al. 2013). In some cases, the best first step—especially for mild depression or depression of recent onset— may be simple monitoring over a period of perhaps several weeks to a month.
2. Bibliotherapy: Several meta-analyses have now demonstrated that outcomes from bibliotherapy are consistent with those of other treatments for depression (Cuijpers 1997; Gregory et al. 2004).
3. E-health self-management: The Internet has created the potential for self-guided programs such as moodgym.com or Meyer et al.'s (2009) Deprexis to help patients manage their own depression.
4. Guided E-health: The evidence suggests that intermittent contact with a therapist during the course of an E-health intervention, in person, by phone, or by email, results in an increase in the effectiveness of the treatment (Berger et al. 2011; Gellatly et al. 2007), and that effects can be similar to those for psychotherapy (Cuijpers et al. 2010).
5. Brief evidence-based intervention: This could be one to three sessions of at most 30 min, perhaps in a group setting, with a therapist focusing on behavioral activation and other issues chosen specific to the patients' report (e.g., problem solving, cognitive restructuring, acceptance and commitment, interpersonal dynamics). This brief intervention approach has proven effective in primary care settings (Bryan et al. 2012), and it is indirectly supported by research finding little relationship between number of sessions and efficacy (Cuijpers et al. 2013).
6. Individual therapy: There is relatively little evidence in the case of depression that the type of therapy affects the size of the effect (e.g., Barth et al. 2013), so the selection of an intervention strategy could be based on patient variables and perhaps on therapist preferences. This step could even be offered in a flexible way that allows an integration of techniques from multiple therapeutic models at the discretion of the therapist. Augmenting the frequency of sessions may also contribute to efficacy (Cuijpers et al. 2013).

7. Medication: Given evidence that therapy is associated with better long-term outcomes than medication (e.g., Hollon et al. 2005), and the more dangerous side-effect profile of medications, the bias in the treatment of depression should be towards medication as an augmentation to rather than replacement for psychotherapy (Cuijpers et al. 2010; Dekker et al. 2013). There is also evidence to support the use of an alternate or augmenting medication in the absence of response to the first medication (e.g., Warden et al. 2007).
8. Inpatient treatment: This step is typically only warranted if the patient is at risk of harm to self or other, or has become incapable of self-care.
9. Electroconvulsive therapy.

This example can be used to highlight several features of stepped-care protocols. One is the various types of transitions that can be incorporated into a stepped-care protocol. These can include horizontal shifts to a treatment with approximately equivalent burden (e.g., from one form of therapy or medication to another), within-step vertical shifts (monotherapy augmentation), or between-step vertical shifts (e.g., shifting from psychotherapy to medication or combined therapy). It is this last set of transitions that distinguishes stepped-care protocols from other adaptive interventions, but stepped-care protocols need not rely exclusively on between-step vertical shifts.

Second, the inclusion of a higher burden of interventions later in the protocol need not be justified by evidence of superior outcomes. For example, the transition to medication from psychotherapy cannot be justified on the basis of any evidence indicating medication is a more effective treatment (Antonuccio 2012). The transition to the higher burden of medication is justified simply by the failure of psychotherapy, and the treatments preceding psychotherapy, to produce an adequate treatment response for the patient. One could even envision a transition to a higher-burden treatment with a lower response rate if prior interventions have failed, though only if no alternative treatment with better outcomes remains to be tested.

Third, the example can be used to demonstrate the various decision rules to be considered in a comprehensive stepped-care protocol. The most important of these have to do with defining an adequate treatment response and the time limit for each intervention step. For example, Wang et al. (2005) recommended at least 2 months for an adequate trial of medication and eight sessions for psychotherapy.[3] Though research protocols typically involve objective standards for identifying remission and response, in clinical practice the patient often plays an important role in determining whether a transition in treatment will occur, a topic we return to when discussing obstacles to implementing stepped-care protocols.

Those rules should also reflect potential moderators of treatment selection such as symptom severity or duration, comorbid conditions (personality disorder and cognitive impairment being two particularly important issues), and patient choice.[4] Watchful waiting is probably not an appropriate option for individuals demonstrating

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[3] We use these values only for exemplary purposes and do not necessarily consider them optimal. However, lack of change within 2 months should cause consideration of at least a within-step shift, either involving replacement or augmentation.

[4] Nahum-Shani et al. (2012a) correctly pointed out that the variables used to tailor treatment should not be equated with moderator variables, which include all cases where the size of the

persistent depressive disorder, for example. The patient's preferences may for some conditions prove to be the most important moderator of step selection apart from failure of prior treatment steps (Geers et al. 2013). In contrast, there is surprisingly little evidence that—at least in the case of depression—the severity of the condition is predictive of treatment efficacy for psychotherapy versus medication (e.g., Bower et al. 2013; Hollon et al. 2005), though there are other steps (e.g., watchful waiting and electroconvulsive therapy) where severity of disruption should clearly be a consideration.

Fourth, health-care agencies should modify empirically based stepped-care protocols to reflect local resources and populations. For example, in recognition of the extent to which depression is influenced by socioeconomic factors, a community health center might modify a standardized protocol so it explicitly incorporates steps involving community resources such as domestic abuse agencies or food pantries, or the involvement of churches and fraternal organizations in treatment. Specialty mental health practices may find watchful waiting is never appropriate by the time they are approached by a patient for treatment.

Having outlined the basic elements of stepped care, our next topic is a summary of the reasons why we consider stepped care so important to redesigning psychological health care, particularly in the PCMH. We will focus on six issues all of which are consistent with the overall goals of PCMHs: (1) Stepped care is more patient centered and can reduce the burden on patients. (2) It potentially enhances the cost–benefit profile of psychological services. (3) The implementation of stepped-care protocols can contribute to establishing a system of care capable of meeting the need in the context of increasingly stressed resources. (4) Stepped-care protocols will be increasingly practical and valuable as integrated health-care settings emerge that incorporate psychological services. (5) These protocols are often by their nature multidisciplinary and thus are ideal for integrated care settings such as PCMHs. Finally, (6) these protocols provide a basis for overcoming long-standing problems associated with the diagnosis of mental disorders. The first three are general points about the value of stepped care. The last two are particularly important specific instances in which the first three points are relevant.

Reducing Patient Burden

An optimal health-care system would be one in which patients receive evidence-based treatments that create the smallest burden required to achieve recovery. By that definition, the current fractionated psychological care system is poorly designed for purposes of achieving optimal health care. When some providers—usually reflecting their disciplinary or personal preferences—solely focus on biological interventions and others on psychosocial interventions, the choice of treatment is typically determined more by the biases of the provider than by the best interests

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effect varies across subgroups. Tailoring is only empirically justified when moderation involves actual reversal of the direction of an effect.

or preferences of the patient. Psychologists and other psychosocial providers tend to offer psychotherapy for mental disorders while general medical practitioners and psychiatrists tend towards medication; individuals with physical disorders potentially receive higher-burden medical procedures when a less burdensome behavioral intervention could have been as effective. While it is true that patients may choose a provider based on their preferred mode of treatment, far too often the entry point for the patient into the psychological care system is a matter of expediency or prior experience. The provision of psychological services primarily through specialty care also means little incentive exists for providing low-burden treatments that minimize specialist contact.

The principle of minimizing patient burden is consistent with Principle A: Beneficence and Nonmaleficence of the American Psychological Association (2010) *Ethical Principles of Psychologists and Code of Conduct*. The principle obliges psychologists to attempt to avoid or minimize harm and safeguard the welfare of patients, yet patients are regularly exposed to higher-burden treatments than necessary because of personal predilections. Current fractionated practice is particularly problematic when patients are prescribed medications with significant physical side-effect profiles without prior consideration of less risky interventions.

Stepped-care protocol research can be distinguished from the other research strategies described above—strategies that typically focus on one treatment at a time—in that the development of such protocols directly challenges the adequacy of a health-care system in which the choice of treatment is based on factors other than minimizing patient burden. The existence of evidence-based comprehensive stepped-care protocols highlight the need to design systems of care that are capable of reserving high-burden interventions only for those individuals where treatments of limited cost and risk have already failed.

Cost–Benefit Issues

As noted previously, a key feature of stepped-care protocols is that higher-burden treatments are reserved for individuals who do not respond to lower-burden treatments. A system of care based on a stepped-care model will therefore cost less than a system in which only higher-burden interventions are deployed. This statement is likely to be true whether we are talking exclusively about monetary cost or more broadly about total economic cost. Options such as watchful waiting and supported self-management minimize professional involvement, travel time, and demands on the patient. Comprehensive stepped-care protocols reserve more intensive professional involvement for those who have not responded to other treatments. In fact, we suspect some health-care providers will resist the implementation of comprehensive stepped-care protocols for what they perceive as inadequate professional involvement despite the evidence base.

Stepped care therefore has the potential to reduce the overutilization of high-burden treatments when lower-burden treatments can be potentially efficacious. The more desirable cost–benefit ratio associated with stepped-care versus traditional models of professional care (which tend to emphasize provider interaction) will play an important role in our discussion of the issue of diagnosis below.

Meeting the Need

Where the previous point had to do with the overutilization of psychological services, we now turn to issues having to do with underutilization. Wang et al. (2005) estimated that 59% of individuals meeting criteria for a mental disorder received no treatment of any kind in a 1-year period. Of those who received treatment, 67% received inadequate care according to existing treatment guidelines. These results suggest the need for increased access to psychological services, but given a 12-month prevalence of 25% (Kessler and Wang 2008b) for mental disorders, creating a system capable of addressing the unmet need using traditional delivery systems that emphasize the use of high-cost professional care would quickly overwhelm those systems (Kazdin and Blase 2011).

We believe the implementation of comprehensive stepped-care protocols provide the best solution for addressing underutilization. With the identification of efficacious treatments that require minimal professional involvement, these protocols create an opportunity for reaching a broader spectrum of the population in need in a way that will minimize stress on available resources. In the case of low-burden interventions it may even be possible to use trained paraprofessionals as primary service providers, reserving license professionals for those individuals who do not respond to the initial care steps. At the same time, the protocol defines next steps in those cases where the low-burden interventions are unsuccessful, an advantage over single-treatment approaches to addressing the shortage of care such as increased telepsychology.

This discussion focuses on reducing underutilization due to insufficient resources. Another contributor to underutilization is the failure to identify psychological problems. To some extent this issue is unresolvable, in that some people simply do not pursue care for their problems. The problem can be reduced, though, if psychological services become a common element of the primary care settings where individuals with psychological issues frequently pursue care. In addition, sometimes problems are overlooked simply because the system does not want to spend resources in dealing with these. Stepped-care protocols may decrease the role of these disincentives. Stepped-care protocols also have an important role to play in the integration of psychological services into primary care settings such as the PCMH.

Contribution to Integrated Primary Care

The next few years will be a period of dramatic change in the US health-care system, and these changes will have profound implications for expectations concerning the availability of psychological services. The Patient Protection and Affordable

Care Act has encouraged the formation of comprehensive care provider entities, such as accountable care organizations, increased placement of health-care services in nontraditional settings, such as schools, and integration of psychological care into primary care practices such as PCMHs.

There is growing interest in assuring psychological services for all appropriate recipients. A model called the Triple Aim from the Institute for Healthcare Improvement is widely cited as a framework for understanding the goals of health-care reform (http://www.ihi.org/offerings/Initiatives/TripleAim/Pages/default.aspx). These goals include improving patients' experience of their care, including satisfaction with health-care services; improving population health; and reducing the per capita cost of health care.

Increased access to behavioral and psychological services is seen as a potential contributor to all three goals. It has been suggested, for example, that the incorporation of psychological services into primary care settings can enhance patient satisfaction by improving communications with health-care providers and contributing to a true biopsychosocial model of care (e.g., Runyan 2011). Behavioral interventions for improving diet, increasing exercise, and reducing unhealthy habits such as substance use are essential to achieving the goal of enhancing population health (Institute of Medicine 2012), and it has been suggested that primary care represents the main venue through which mental health care is provided in the USA (Kessler and Stafford 2008a). Finally, though the matter cannot be considered settled, there is a fair amount of evidence indicating that appropriately implemented psychological health care can result in a net cost savings (Bruns et al. 2012; Chiles et al. 1999).

The emerging integrated care model such as PCMHs potentially addresses some serious shortcomings in the existing health-care system. It eliminates the artificial distinction between psychological and physical difficulties, a distinction that is reinforced conceptually by Cartesian thinking about the nature of health problems and practically by insurance reimbursement systems that carve out psychological from medical services. It encourages coordination of care. It overcomes the restriction of psychological services to those who pursue specialty care. It allows for a multidisciplinary, integrated approach to treating physical problems; mental disorders; and common disorders that even when not the focus of treatment makes recovery from any primary diagnosis more difficult, such as substance use problems, chronic pain, depression, and insomnia.

It is not surprising then to find that experiments in the integration of psychological services are widespread. This is true for a number of federal agencies (Federal Partners Senior Workgroup on Mental Health Transformation Integration of Primary Care and Mental Health Workgroup 2008; Substance Abuse and Mental Health Administration 2008), including the Departments of Veterans Affairs and Defense. As of 2011, primary care practices seeking recognition as patient-centered medical homes must track the use of evidence-based medicine for the treatment of at least one condition related to unhealthy behaviors, mental health, or substance abuse (National Committee for Quality Assurance 2011).

The integration of behavioral care into general health-care services can be substantially enhanced by the implementation of comprehensive stepped-care models.

To support this point, we will use the four-quadrant model (Mauer 2003) that has become influential in thinking about the design of integrated services. This model identifies four classes of patients requiring somewhat different models of integration, three of which we will discuss in relation to the implementation of stepped-care protocols. Quadrant II includes individuals demonstrating high behavioral health risk and low physical health risk. This is the population traditionally treated in specialty mental health. For these individuals, the cost of care in integrated settings can be improved by stepped-care protocols in which brief and low-burden alternatives are attempted prior to more intensive treatments. Returning to the stepped-care protocol introduced earlier for depression, which was originally developed with integrated settings in mind, steps 1–5 could regularly be offered in the context of the primary care practice, with minimal demands on professional time. It is only at step 6 that referral to specialty care is likely to be required. At step 7, there is even the possibility of return to the primary care setting.

Quadrant III includes individuals with low behavioral health risk and high physical health risk, the traditional medical patient. These individuals often currently receive relatively high-burden interventions before lower-burden behavioral interventions have been exhausted. In this case, compared to treatment as usual, psychosocial interventions may be among the lower-burden treatment options in a protocol.

Quadrant IV represents patients at both high behavioral and physical risk, the medically complex patient. These individuals meeting criteria for both medical and mental disorders are particularly inappropriate for traditional monotherapeutic treatment, and may well demonstrate the greatest potential for reducing costs of care with adequate integrated care (e.g., Unützer et al. 2009). However, achieving optimal savings will require the development of protocols for the joint treatment of multiple conditions such as heart disease and depression, or chronic pain and diabetes (Krein et al. 2005; Rugulies 2002).

The Diagnostic Problem

We consider our last argument particularly intriguing, because it follows the implications of integrating care into medical delivery systems and extending access to care in a direction we have not seen previously pursued, having to do with the existing diagnostic approach to mental disorders. The diagnosis of mental disorders has been a topic of controversy for many years(e.g., Dumont 1984), and the development of the fifth edition of the American Psychiatric Association's (2013) *Diagnostic and Statistical Manual of Mental Disorders* (DSM) only fanned these flames. Though a number of criticisms have been lodged against the development process and the symptom-based diagnostic model underlying the DSM (e.g., Balsis et al. 2011; Frances 2013; Galatzer-Levy and Bryant 2013), we will focus on the fundamental issue of defining a dividing line between mental disorders and normal functioning.

Specifically, much of the controversy over the DSM redevelopment had to do with new diagnoses and modifications to existing diagnoses that, it has been suggested, pathologize normal experience(Frances 2013). The prototypical example was removal of bereavement as an exclusion in the diagnosis of major depressive disorder. While many commentators attributed this blurring of the line between the normal and pathological to greed—as a means of increasing the population eligible for treatment, particularly medication(e.g., Cosgrove and Wheeler 2013; Frances 2013; Sachdev 2013)—we suggest more benign or even altruistic factors contribute to this tendency to expand the boundaries of pathology. One that is of interest for the present discussion is the tension that the disease model creates between pathologizing a larger portion of the human experience, and recognizing the potential for psychological interventions to help with difficult aspects of that experience. A DSM diagnosis legitimizes research on a problem, encourages efforts to prevent its exacerbation, and justifies reimbursement for its treatment. For example, at the same time that much of the criticism of the new DSM was focused on the proliferation of disease, a proposal to tighten the criteria for autism in the fifth edition was challenged for potentially restricting access to "supports and services [individuals currently diagnosed with autism] need" (Carey 2012, p. A1).

Note that this problem of setting an optimal dividing line between pathological and normal states is not unique to psychological problems, as demonstrated by the emergence of concepts such as prehypertension and prediabetes in medicine. However, the "true" dividing line between psychological "disorder" and "normal" is particularly difficult to justify based on objective grounds. There are some mental disorders for which there is supportive if not conclusive evidence of a qualitative deviation from normal functioning, as in the case of schizophrenia (Linscott et al. 2010), but the more typical case is for psychological disorders to represent extremes of normal problems in daily functioning such as depression, anxiety, focused attention, and impulsivity. The assumption of an objective dividing line between normal and pathological difficulties for such conditions more likely represents an overgeneralization of the disease metaphor than an objectively defensible basis for identifying targets for treatment.

Furthermore, the concept of mental disease provides a poor fit to the universe of problems for which evidence-based psychological interventions are potentially available, and for which members of the relevant professions currently provide services. Examples of conditions for which such interventions can be useful even though the disease metaphor provides a poor fit include relationship difficulties, domestic abuse, risk for the development of difficulties in adaptive functioning, treatment adherence, difficulties changing habits, and stress reactions.

Interventions for psychological conditions are potentially helpful whenever the enhancement of adaptive skills—for example, improved problem solving, interpersonal communication, or socially appropriate expression of emotions—or psychotropic medications could enhance personal functioning. Consistent with this formulation is evidence suggesting that 39 % of those who pursue psychological services do not meet criteria for a mental disorder during the year of treatment (Druss et al. 2007). This approach also is consistent with the proposition that our current "sickness care" system needs to be replaced or augmented by a "health-care" system.

We would argue that an optimal psychological care system would eliminate the focus on a DSM diagnosis as the primary justification for intervention and reimbursement, and replacing it with one in which such problems merit treatment if that treatment can be justified on pragmatic grounds, that is, when an evaluation of relative costs and benefits indicates a sufficient rationale for providing treatment. The superior cost–benefit ratio associated with low-burden treatments can provide a justification for intervention at levels of distress and dysfunction that would not be deemed pathological under any reasonable definition of that term. If stepped-care protocol research can demonstrate that relatively mild psychological difficulties (which can worsen or which can impact other problems such as diabetes management) can respond to relatively low levels of intervention better than they would if left alone, then that can justify intervention without having to label problems in adjustment as mental disorders.

What we are suggesting is a model of patient evaluation in which there would be no need to distinguish between major depressive disorder, persistent depressive disorder, depressive disorder due to another medical condition, uncomplicated bereavement, or the various other categories into which the experience of sadness is divided in the DSM. Instead, differentiation of patients would focus on those features of sadness that affect which level of treatment should be implemented, intensity and length of the associated distress and dysfunction being particularly important candidates.

A model of care that thinks in terms of matching a level of care to the severity of a problem rather than providing specialty care for mental disorders offers several advantages. First, it provides a pragmatic basis for case formulation. Rather than focusing on what are the optimal dividing line between normative post-traumatic stress, acute stress disorder, and post-traumatic stress disorder, an abstract and unresolvable dilemma, the question becomes what level of intervention is most cost-beneficial at what level of post-traumatic stress. It makes the identification of a dividing line between normal sadness and pathological depression a secondary concern to defining a level of intervention that is justified given the person's level of sadness. It diminishes the divide between mental disorders and physical disorders with a psychological component, in that both are challenges that can potentially be remediated to some extent through psychological interventions. Finally, we note that a problem-focused approach to case formulation is more consistent with the degree of comorbidity found among DSM diagnoses, which is quite substantial (Kessler et al. 2005). If we are talking about problems in adjustment that are amenable to psychological intervention rather than distinct disease states, it is not at all surprising to find that one problem begets others.

We are suggesting that the solution to the diagnostic problems in psychological health care—and to maximizing the benefit resulting from psychological services under health-care reform—may not be a diagnostic system of mental disorders at all. The better option may be a new way of thinking about psychological problems, assessment, and treatment that focuses on matching the level of care to the level of need and discarding the question of the dividing line between normal and pathological entirely.

Researching Stepped Care in PCMHs

Stepped-care protocols have already been developed for a variety of conditions, including substance abuse, attention deficit-hyperactivity disorder, depression and anxiety, autism spectrum disorders, and obesity (Espie 2009; Jakicic et al. 2012; Draper and O'Donohue 2011). The challenge is the design and implementation of research to test stepped-care protocols. These research projects need to be prioritized because there is far too little data indicating the effectiveness of behavioral interventions in integrated care settings or in PCMHs. If practice is to be evidence based—a requirement of PCMHs—there needs to be randomly controlled trials of these behavioral health interventions with clinical, functional, financial, and satisfaction data collected.

Two approaches are possible, focusing on the protocol as a whole and on specific steps within the protocol. The former would typically involve random assignment to be treated in compliance with the stepped-care protocol versus one or more control treatments. One reasonable candidate for the control condition is "treatment as usual," typically involving a choice between medication, psychotherapy, and their combination on undefined grounds. A less common alternative is continued treatment with a relatively low-burden intervention, for example, guided E-health. This is particularly useful for evaluating the additive contribution made by introducing higher-burden treatments.

An example of a research model developed specifically to evaluate a sequence of treatment choices is the sequential multiple assignment randomized trial (SMART; Murphy 2005; Nahum-Shani et al. 2012a, 2012b), which was developed for evaluating adaptive interventions rather than stepped-care protocols per se. SMART involves randomly assigning participants to one of two or more treatments. Responders to the initial treatment continue that treatment. Nonresponders are randomly assigned to one of two or more alternate treatments. Figure 6.1 provides an example of applying SMART to some of the steps in our protocol for depression.

Though SMART is a very useful research design, and a number of studies have been conducted using variants of the design (Almirall et al. 2012; Lei et al. 2012), there are obstacles associated with applying the design to preconceived stepped-care protocols. First, it requires identifying alternate treatments where it is reasonable to design a head-to-head comparison. For example, medication and psychotherapy are often used as examples of alternate treatments that can be used in a direct comparison, but we have attempted to make the case that in an evidence-based stepped care, protocol psychotherapy should precede medication because of the greater burden associated with the latter. Second, as our depression protocol demonstrates, a comprehensive stepped-care protocol can continue for many steps. Studies that focus on specific steps are probably limited to only 2–3 steps before groups become too small to achieve adequate power. Third, some treatments may be time limited, such as brief psychotherapy or bibliotherapy. This is a more minor issue than the others, in that it simply means responders will have treatment terminated but can still be followed to evaluate maintenance of effects.

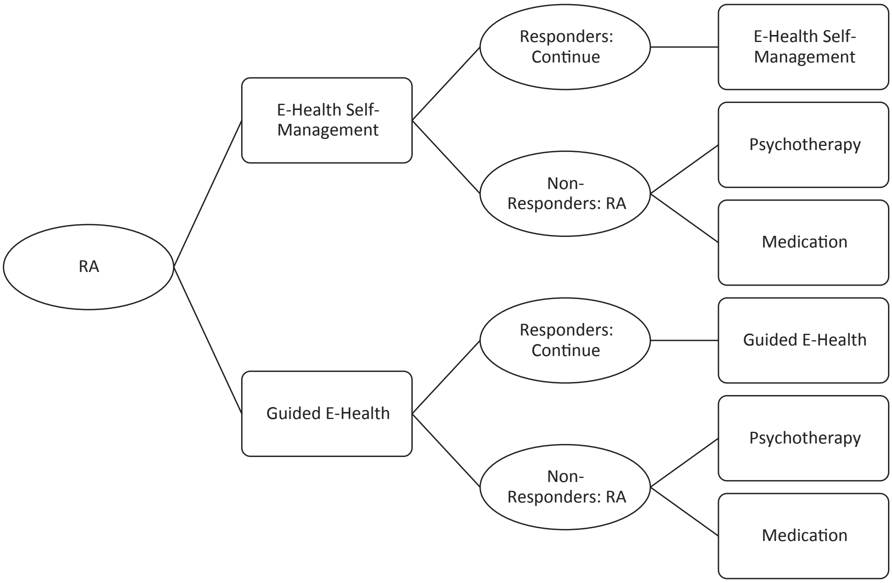

Fig. 6.1 A possible SMART design for depression. *Rectangles* identify interventions, *ovals* decision rules. *RA* random assignment

Whatever the research design, it is important when studying stepped-care protocols to evaluate cost–benefit issues as well as efficacy. In the case of a protocol-level research, even if efficacy rates are the same for stepped care and treatment as usual, if the former allows for treating more individuals at lower mean cost, an advantage has been demonstrated. In the case of step-level research, information about rate of improvement versus burden can inform decisions about the optimal ordering of treatments. We also suggest that a full range of variables be evaluated including access, safety, patient satisfaction, clinical efficacy, functional change, and provider satisfaction. Finally, we suggest that these protocols be developed to be multidisciplinary—with multiple disciplines providing input, involved in triage, making treatment decisions and implementing steps. It would be a mistake to design these to also involve colocated care, where professional functioning is still fairly siloed.

Challenges in Stepped Care

Though we believe stepped care has an important role to play in the evolution of psychological health-care systems, there are a number of challenges associated with developing, implementing, and evaluating stepped-care protocols that merit mention:

1. Transition points can be choice points for patients as well as for providers. Dekker et al. (2013) reported that patients often wanted to continue with their existing treatment even in the absence of an adequate response, and attrition can be quite high at transitions (Richards and Borglin 2011). Withdrawal and resistance are less likely to be issues when the transition appears minimal (e.g., a shift in therapeutic modality, or when a patient who has been using a self-help website is instructed to continue to do so but offered guidance) rather than disruptive (e.g., when switched from one medication to another, or from psychotherapy to medication). The more attention is focused on the transition—and informed consent often requires focusing on those transitions in research—the greater the risk of patient loss.
2. The decision rules are not a trivial component of the stepped-care protocol and can influence its overall efficacy. How to choose an initial step, how long to let treatment continue before switching, what are the criteria for a sufficient response, and what sorts of switches are allowed at each step can impact on the overall effectiveness of the stepped-care protocol. If care is to be truly patient centered, obviously patients need to be involved in these decisions too. A format for multiple professionals and patients to be substantially involved in these decisions needs to be developed and evaluated. Unfortunately, these can be more complex than the selection of treatments, and there is often no research basis for optimizing these rules.
3. While a number of stepped-care protocols are available that can be adapted for use in primary care settings, and some have been empirically evaluated for efficacy, there are many psychological problems for which protocols remain unavailable (Bower and Gilbody 2005). Initially, protocols to fill the gaps will need to be developed based on what the available research suggests would be reasonable, with subsequent research used to evaluate those protocols and develop them further.
4. The adequate implementation of stepped-care protocols, and the optimal benefit in terms of increased utilization, require integrated health-care systems that involve multiple disciplines, particularly when targeting medical conditions with psychological components. We believe health-care reform will encourage the growth of such systems, but in many cases, psychological services remain distinct from the rest of health care in an undesirable way.
5. The development of evidence-based stepped-care protocols is a more difficult process than the development of diagnostic criteria for mental disorders in one important way. Rather than attempting the reliable identification of a single boundary between normal and pathological functioning, stepped-care protocols require reliably identifying multiple boundaries as valid indicators for increasing levels of intervention. These multiple boundaries may not even be completely determined by the most prototypical symptoms of the syndrome, as is the case for mental disorders. Existing stepped-care protocols suggest critical features determining the optimal treatment protocol could include failure of prior treatment, patient preferences, and cost as well as more diagnostically significant factors such as chronicity and severity (Mack and Rybarczyk 2011; Sobell and

Sobell 2000). In a stepped-care protocol, it is also necessary to consider the moderators of optimal treatment, factors that would argue for skipping steps or modifying the algorithm. Certain clinical factors with broad effects on functioning, such as cognitive impairment and the presence of personality pathology, can also prove to be important moderators of the optimal level of care, and so may require assessment as part of the diagnostic process (Levenson et al. 2012).

6. Defining the relative burden of treatments for purposes of ordering their administration is also not always an easy task. Burden is a multidimensional construct. If treatment *A* costs more than treatment *B* but results in a faster response, which is the more burdensome? Patients will also vary in their perceptions of the relative burdens of treatment. Though our bias is towards behavioral interventions for chronic pain before surgery, some patients hope for a quick cure in return for the more invasive procedure. Actuarial considerations should play a role in determining treatment choices, but so should patient perceptions.
7. We have suggested that the evaluation of costs relative to benefits is central to the success of stepped-care protocols, but these are a complicating issue. The analysis of costs can be quite difficult, and the value of benefits can vary in important ways depending on who is paying for care. For example, federal insurance programs may see more of a benefit to interventions that reduce disability than private insurers.

Final Thoughts

The problems inherent to building an evidence-based system of stepped-care protocols for behavioral health care in PCMHs are significant. However, we have attempted to suggest that it is an increasingly important task to undertake. Health-care reform creates an exciting context in which to reconsider whether current treatment models can and should survive. The development of stepped-care protocols provides a context in which a psychological care system can be built that is capable of reducing patient burden, meeting the need, and avoiding overutilization. In our discussion of diagnosis, we have even suggested it provides a context for rethinking the manner in which we formulate cases.

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Chapter 7
Planning a Cost-Effectiveness Study

Gayle Hurd and Jeanne Wendel

Introduction: Planning a Cost-Effectiveness Study

Providers and payers are exploring care delivery innovations that strengthen care coordination or reduce inefficient utilization of care. Collecting and analyzing data to assess whether specific integration or coordination strategies actually produce the promised outcomes in specific care settings is useful for two reasons:

- These analyses provide essential support for the health-care provider's quality improvement efforts.
- The estimates of financial and health-care impacts are used to support employment and contract negotiations between innovators, traditional providers, and payers.

Understanding the impacts of these innovations is becoming increasingly important, as providers and payers work to implement bundled payment models, shared-savings models, and accountable care organizations (ACOs; Korda and Eldridge 2011). Readers of this chapter might hope that the chapter will lay out a step-by-step "recipe" for producing a cost-effectiveness study; however, study designs are situation specific. The design of a cost-effectiveness study is impacted by the contracting environment that shapes decision-makers' goals and the specific types of impacts that will be generated by care delivery innovations. Designing a cost-effectiveness study requires thoughtful consideration of a series of issues. This chapter helps you identify—and address—the key issues for your study.

Some types of cost-effectiveness and comparative effectiveness research have generated controversy at the health policy level (Chandra et al. 2011). The controversies focus on research that tackles broad questions about the deployment of resources in the health-care system. For example, a policy-level study might address

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_7

the question of whether public insurance programs should cover new cancer drugs that extend life at a high cost per patient. Analyses that address these types of questions have far-reaching ethical, social, and political implications. In contrast, the analyses discussed in this chapter typically focus on a more targeted question: Does a specific care delivery innovation impact cost, revenue, and patient-care outcomes in a specific care setting?

Consider, for example, a service-delivery innovation designed to reduce hospital emergency department (ED) visits by integrating behavioral health care into a primary care physician (PCP) group. The innovators anticipate that the reduction in ED visits will generate savings that will offset the cost of offering behavioral health care in the PCP group. Assessing whether the innovation actually achieves this goal is an important step to support the ongoing program improvement, and to support contracting between the behavioral health-care provider, the PCP group, and relevant payers.

Planning the study will require thoughtful consideration of the study purpose, relevant outcomes measures, potential confounding variables, the data collection process, and the analytical methodology (see Table 7.1). The individuals responsible for producing study results will also consider the resources and expertise that will be required to complete the analysis. Constructing a useful dataset and producing robust multivariate statistical results may require information technology, econometrics, and economics expertise. Engaging university or private sector analysts to provide this specialized expertise can potentially strengthen the quality of the study results. In addition, an outside analyst can serve as a neutral third party that does not have a financial interest in the outcome of the study. This neutrality can strengthen the credibility of results for external audiences. If outside expertise will be required to support data collection and analysis, it is valuable to engage the experts during the study planning process.

This chapter provides an overview of key issues that will be addressed during the study planning process. Understanding these issues will help the health-care provider or innovator convene the study design process, contract with analysts, and oversee the study process.

Step 1: Specify the Study Purpose

The study planning process should begin by addressing four essential questions:

- Who are the decision-makers who will use the study results? Which outcomes are important to these decision-makers?
- When do they expect to make these decisions?
- Will one-time analysis address the key issues, or will the study generate preliminary information that will be used to organize ongoing monitoring?

Table 7.1 The study planning process

Specify the study purpose
Who are the decision-makers who will use the study results?
Which outcomes are important to these decision-makers?
When do they expect to make these decisions?
Will one-time analysis address the key issues, or will the study generate preliminary information that will be used to organize ongoing monitoring?
Define the outcomes measures
Will the study focus on final outcomes measures or intermediate targets?
What types of costs will be measured?
What individuals/groups/sites will be included in the study?
Define relevant independent control variables
What factors are likely to influence the outcomes measures (for the study population) that are beyond the scope of the study?
Are process measures useful to support quality improvement?
Streamline the data collection process: Can the outcomes measures and independent control variables be captured from administrative data?
Can patient diagnoses, procedures, filled prescriptions and other healthcare utilization information be captured from claims data?
Is an electronic medical record system available? Can this system provide information about lab test results, prescriptions written (that may—or may not—have been filled) and patient health status?
If patients will complete a survey form or other tool, how will that information be entered into a computer? Can the patients enter this information into a computer directly? Can the forms be printed on machine-readable paper?
If process timing or delays are important issues, can computer time stamps provide the relevant data?
If patient compliance or no-shows are important issues, can relevant information be captured from the scheduling system?
Develop the analytical strategy
How will the study address the fact that healthcare utilization and cost data tends to be highly skewed?
How will the study address the potential for self-selection bias?
Random controlled trial versus multivariate statistical analysis
Self-selection bias as a statistical issue versus self-selection as a program management issue

Who Are the Decision-Makers Who Will Use the Study Results? Which Outcomes Are Important to Them?

For an innovative psychologist planning to offer integrated care in a PCP's office, the PCP's contracting environment will frame the answer to the question: Who are the key decision-makers? The study results may be used by payers to determine reimbursement for the PCP, the results may be used by the PCP to assess whether to employ the psychologist, and the results could be used by the PCP and the psychologist to determine the payment from the PCP to the psychologist. The incentives built into the contract between the PCP and its payers, and the contract between the PCP and the psychologist, will determine the relevant decision-makers and the key outcome variables. Table 7.2 provides a typology of possible contracting environments

Table 7.2 Two-sided contracting environment. Example: psychologist provides behavioral screening services that are not reimbursed by payers (and cannot be billed to patients). The PCP will be willing to pay the psychologist if the behavioral screening services generate net savings for the PCP

		How do patients and insurers pay the PCP?		
		FFS PCP's revenue is based on the volume of services	*Capitated* PCP's revenue = capitated rate × number of patients on the panel. PCP has financial incentive to reduce the volume of PCP services per member of its patient panel	*Performance based* PCP has a financial incentive to improve its performance on the measures that are included in its contract with payers
How does the PCP pay the psychologist?	*FFS* Psychologist does not have financial incentive to invest in ongoing quality improvement	PCP does not have financial incentive to invest in care delivery innovations that reduce the volume of PCP services	PCP hires the psychologist; evidence indicates that the screening services will generate offsetting reductions in PCP services	PCP hires the psychologist if evidence indicates that the screening services will generate performance improvement
	Performance based Psychologist has financial incentive to demonstrate performance on the contracted quality measures			

PCP primary care physician, *FFS* fee for service facing an established PCP group that is considering contracting with a psychologist to offer integrated care in the PCP office. The PCP may pay the innovator via fee-for-service (FFS) payment based on the numbers of patient visits, capitated payment based on the number of patients in the patient panel, or performance-based payment in which the payment received by the innovator depends on the degree to which the innovation reduces the total cost of patient care. At the same time, the PCP group is also considering the terms on which the group is paid. The PCP group could be receiving FFS, capitated, or performance-based payments. Examining the PCP group's two-sided contracting environment provides information that will be needed to identify the types of costs and revenues that are relevant to the PCP as it evaluates the innovator's offer. It is also important to note that the psychologist's reimbursement could be performance based. In this case, the psychologist has a financial incentive to invest in quality improvement, and the psychologist becomes one of the end users of the study results.

Table 7.2 is based on the assumption that the PCP group pays the psychologist to provide behavioral screening services, but payers will not reimburse the PCP group for these services. This situation is faced by many PCP groups that provide care to Medicaid recipients under managed care contracts. Of the 36 states listed by the Kaiser Family Foundation as states with managed care contracts, 21 utilize carve-out provisions for outpatient behavioral health care (KFF 2011). In these states, the managed care organization (MCO) contracts with the state Medicaid program to provide a broad array of health-care services for patients enrolled in the managed care plan—but outpatient behavioral health care is not included on this list of services. If a PCP group contracts with this MCO to provide primary care for individuals enrolled in the plan, the PCP group is reimbursed by the MCO for those services. However, if the PCP group employed a behavioral health-care provider, the PCP would not typically be reimbursed by the MCO for the behavioral health-care services. This PCP group would only benefit financially from employing a behavioral health-care provider if:

- the PCP group receives capitated or performance-based reimbursement from the MCO, and
- the behavioral health-care provider generates *net* financial savings for the PCP group.

Contracting environments are evolving as some provider organizations create ACOs and patient-centered medical homes. In addition, the growth of high-deductible health savings account (HSA) plans implies that patient payments could play an increasingly important role in PCP revenues. The growth of HSA's could have implications for care delivery innovations such as integrated care and behavioral health screening, because it is not clear whether patients with HSA's will be willing to purchase services such as behavioral health screening (Table 7.3). (For a more detailed discussion of the impact of the 2010 Patient Protection and Affordable Care Act (PPACA) on payment models, see Korda and Eldridge 2011).

Table 7.4 provides additional detail for a slightly more complex example, in which the psychologist plans to offer services that will: (i) reduce PCP services and

Table 7.3 Payment and insurance models

Payment type	Implication for cost-effectiveness study
Bundled payment	Services provided by separate entities may be billed as a bundled service. For example, the surgeon's fee may be bundled with the hospital operating room fees. In this case, the payer would pay the bundled amount to the hospital, and the hospital would pay the surgeon. This creates an incentive for the hospital and surgeon to collaborate to produce care efficiently
Accountable care organization (ACO)	The ACO receives a risk-adjusted capitated payment for each patient in the patient pool and assumes responsibility for all care required by those patients. All costs are therefore relevant for a cost-effectiveness study
Patient-centered medical home (PCMH)	PCMH reimbursement is likely to include a monthly risk-adjusted payment (per patient) for care coordination that occurs outside the patient visit, a fee-for-service payment for patient visits, and a performance-incentive payment based on the achievement of quality and efficiency goals. See http://www.acponline.org/running_practice/delivery_and_payment_modeIs/pcmh/cost_benefit/
Capitated payment	This term refers to a monthly payment for each patient in a defined population. The health-care provider is responsible for all care required for those patients, except for categories of care that have been "carved-out"
Shared-savings payment	For example, an entrepreneur may offer a service to a capitated health-care provider that aims to reduce health-care costs by identifying patients at risk of developing chronic diseases and preventing that development. If the two parties adopt a shared-savings approach, the cost savings will be measured, and shared. This contracting strategy minimizes the risk incurred by the capitated health-care provider; however it requires up-front agreement on the study design for measuring the cost savings
Health savings account (HSA)	An individual with an HSA pays for health care directly from this account. Individuals and employers can put tax-exempt funds into the account (up to legal limits). Individuals with HSAs will make decisions about the types of health care they will purchase

also (ii) reduce ED visits. This PCP may be reimbursed on an FFS basis, as a member of an ACO or through a shared-savings contract. Consider a hypothetical service delivery innovation in which a psychologist will screen each patient in a PCP office to identify patients with mental health conditions and then provide treatment within the PCP practice or make referrals for treatment outside the PCP office. The hypothetical psychologist anticipates that mental health screening and treatment in the PCP office will strengthen the patient's mental health and also strengthen the patient's self-management of chronic conditions. These physical and mental health benefits will reduce ED visits for ambulatory care-sensitive conditions. The hypothetical psychologist is writing a proposal to send to the PCP group.

The PCP group will hire the psychologist if the benefits anticipated by the PCP group outweigh the cost of hiring the psychologist (assume, for this example, that the PCP group would pay the psychologist on an FFS basis). The PCP group's contractual arrangements with payers will define the set of outcomes that are relevant to this hiring decision. The PCP group may be reimbursed via FFS contracts, ACO

Table 7.4 Impacts of behavioral health intervention to reduce ED visits depend on PCP's reimbursement type

Model type	Fee for service	Accountable care organization (ACO)	Shared savings
Reimbursement structure	The PCP and the hospital bill for each patient visit. Net revenue per visit (revenue cost) depends on whether the patient has insurance and whether per-visit reimbursement exceeds the cost of providing the visit	The ACO owns (or contracts with) both the PCP group and the hospital. The ACO receives a fixed amount of money per-member per-month (pmpm) for each patient included in the panel, and this pmpm is supplemented by (relatively small) bonus payments for performance on quality and patient satisfaction measures	A shared-savings contract combines FFS reimbursement for services delivered and contractual specification of a formula for computing "savings" generated by efficient care delivery methods and a formula for splitting those savings between the payer and the health-care provider
Financial impact of PCP and ED patient visits	If net revenue per visit is positive, then increased number of PCP (or ED) visits has positive financial impact for the provider (or the hospital). Reducing hospital ED visits does not impact the PCP	Reducing the total cost of providing patient care (e.g., by preventing ED visits) benefits the ACO. However, the impact on the PCP depends on the contract between the PCP and the ACO	The formula specifying computation of the "shared savings" determines the incentive structure. Two features of these formulas are important: "savings" typically compare actual expenditures with benchmark expenditures. This formula might specify a national benchmark or it may focus on previous experience. After the first year, the contract might specify a fixed benchmark or it might specify a rolling benchmark (which would require continuous improvement to earn annual savings payments)
Impact of improving quality and patient satisfaction	Quality and patient satisfaction metrics may generate indirect benefit by supporting the process of negotiating contracts with payers	Strengthening the ACOs performance on quality and patient satisfaction measures increases the likelihood that the ACO will receive bonus payments	The formula that specifies the shared savings may include quality and patient satisfaction measures, because these metrics may impact total revenues
Implications for outcomes specification	Reductions in ED visits are not relevant for the PCP. Quality and patient satisfaction metrics may (or may not) have a financial impact on the PCP	The total cost of providing the PCP visits, the behavioral health intervention and the ED visits is relevant to the ACO. Quality and patient satisfaction metrics are also relevant	The costs of providing the PCP visits and the behavioral health intervention are relevant. Variables included in the shared savings formula are relevant

ED emergency department, *PCP* primary care physician, *FFS* fee for service (or other types of capitated) contracts, or shared-savings contracts. The rows in Table 7.4 outline—for each reimbursement structure—the financial impact of the innovation on the PCP group, and the implications of these impacts for the psychologist's outcomes measurement strategy. (To simplify the example, we assume that the PCP group will not be reimbursed for the screening procedures).

When Do They Expect to Make These Decisions?

In addition to facing a clearly defined cost and revenue incentive structure, the decision-makers may also face a clearly defined schedule for making contract decisions. In this setting, innovations that are designed to produce long-term savings pose two questions:

- If the final outcomes will not be observed for years (or decades), is the decision-maker willing to wait to measure final outcomes?
- If the decision-maker is not willing to wait until the final outcome can be observed, is the decision-maker willing to focus on intermediate outcomes and rely on external study results that connect the intermediate to final outcomes?

We will examine implications of the timing issue in more detail under "Step 2: Define the Outcomes Measures."

Will One-Time Analysis Address the Key Issues, or Will the Study Generate Preliminary Information that Will Be Used to Organize Ongoing Monitoring?

Depending on the details of the PCP's contract with payers, he may ask the psychologist to report on the impact of the care delivery innovation on other PCP services, and on performance measures that must be reported to the payer. If the psychologist's reimbursement includes a performance-based component, he also has a financial incentive to invest in ongoing quality improvement that targets the performance measures detailed in his contract with the PCP. It is likely that the two contracts will specify overlapping sets of performance measures. In this case, it will be efficient to combine the two studies into a single effort. A decision to combine the cost-effectiveness study with data collection needed to support ongoing quality improvement has several implications.

- The two types of studies can be mutually reinforcing. If it is important to measure—and report—the level of performance on a specific quality measure, then it is also important to strive to improve that level of performance.
- The cost-effectiveness study is designed to measure the impacts of an innovation on performance. The quality improvement study will focus on identifying opportunities to strengthen those impacts.

- The data needed to support ongoing quality improvement will probably require a larger set of independent variables than a cost-effectiveness study.
- Cost-effectiveness studies are typically one-time efforts. Data collection to support quality improvement may have some one-time components; however, quality improvement will also require a system for ongoing tracking of quality outcomes. For example, data collection to support quality improvement might include tracking variables that measure key process issues such as proportions of cases in which follow-up is delayed, information is not transmitted, or patients do not comply with instructions. It might also include systematic collection of customer complaints to help identify specific points at which the care process could be improved. These process variables are not typically included in cost-effectiveness studies.

Step 2: Define the Outcomes Measures

Four types of issues must be considered to define the key outcomes measures. The outcomes measures must be:

- Relevant to the decision-maker and observable within the decision-maker's time frame
- Defined in a way that highlights key issues
- Targeted to focus on costs and outcomes that are impacted by the innovation, and
- Defined with careful attention to the question of whether unusual cases should be included or excluded.

The Outcomes Measures Must Be Relevant to the Decision-Maker and Observable Within the Decision-Maker's Time Frame

These requirements pose challenges for any study designed to estimate the impact of a program that utilizes an upfront intervention to prevent or ameliorate a future outcome. It may be necessary to focus the study on intermediate outcomes or process measures, even though the final outcomes measures are more relevant.

Consider an employer wellness program, for example. The employer may contract with a vendor to offer programs to help employees control blood pressure, blood sugar, weight, and responses to stress, in an effort to reduce future health-care expenditures. The employer will make a decision in 1 year, to either renew or cancel the vendor contract, but data on long-term health-care expenditures will not be available at that point in time. In this case, the vendor and the employer might agree on a two-part strategy. The cost-effectiveness study might focus on measuring the impact of the vendor's efforts on short-term employee behavior, such as weight loss, smoking cessation, or compliance with blood pressure medication guidelines—in this specific sample of employees. This information could be coupled with published information about the impacts of these behavior changes on longer term outcomes, estimated using larger samples of individuals. This strategy offers a pragmatic resolution to the discrepancy between the employer's decision time frame and the duration of time that would be needed to observe the key outcomes. However, three potential limitations should be considered. First, the demographic and health characteristics of the samples analyzed in the published data may—or may not—be representative of the employees eligible to participate in the vendor's program. Second, if program participation is voluntary, the vendor's program may experience significant self-selection bias. It is possible that participants may be less healthy (or more healthy) than the nonparticipants, whereas the published results may provide information about a population with average health (Mukhopadhyay and Wendel). Third, the study will only be able to report the impact of the program on 1 year of employee behavior. It will be not possible, at the next annual contracting decision point, to ascertain whether the vendor has successfully induced the employees to adopt long-term lifestyle changes.

Wiley-Exley et al. (2009) provide a detailed example of the trade-off between designing a study to provide information to support short-term decision-making and designing a study that provides an inclusive examination of the full impacts of an innovation. These authors describe a study designed to estimate the financial impact of integrated care for elderly depressed patients. The study design specified a 6-month data-collection period; hence, the study focused on the impact of integrated care on the number of depression-free days experienced by patients during the 6-month period. The study did not address longer term impacts on employment or health-care utilization

The Outcomes Measures Must Be Defined in a Way that Highlights Key Issues

Careful thought may be needed to decide how to operationalize the concepts embedded in the selected measures. For example, consider the Healthcare Effectiveness Data and Information Set (HEDIS) measure that focuses on well-child visits. HEDIS measures were originally developed to help employers assess the quality of care offered by managed care plans. Because employers typically sign annual contracts with managed care plans, the HEDIS measure for well-child visits is defined as the proportion of children who obtain well-child visits during a calendar year. Thus, the denominator is defined as the number of children continuously enrolled in the plan for 1 year starting January 1. The numerator is defined as the number of the enrolled children who obtained a well-child visit during the year. This measure is designed to assess compliance with the guideline that every child should have an annual well-child visit. However, Vogt et al. (2004) note that this measurement strategy does not consider the timing of the child's previous visit. A child, who did not have a well-child visit the preceding year, was already deficient on January 1. If this child's wellness visit occurred in December of the current calendar-year, the HEDIS definition would classify this child as "in compliance with the guideline," when the child is actually not in compliance: nearly 2 years elapsed between well-child visits. Vogt et al. propose that the HEDIS measures should be redefined to focus on the number of months a child is "eligible" for a visit (because more than 12 months have elapsed since the preceding visit).

There is no single correct answer to the question of how the outcome measures in any new study should be defined. However, it is important to be aware of the strengths and limitations of alternate definitions. It is also important to make sure that the definition used in a specific study captures the key issues relevant to the decision-makers, and that the limitations are well understood. The "customers" of the study might include multiple decision-makers, pursuing multiple goals. Some people advocate combining measures of multiple goals to create an index. For example, two professors at Wichita State University began publishing an airline quality rating (AQR) in 1991. These professors compute an AQR score for each airline that combines information about on-time arrivals, involuntary denied boardings, mishandled baggage, along with 12 additional customer complaint categories (http://commons.erau.edu/aqrr/1/). This type of index is used frequently; however, Bjorner and Keiding (2004) caution against combining disparate types of information into a single number. They advocate, instead, focusing on analyzing trade-offs among disparate goals. If the data indicates, for example, that airlines typically sacrifice "mishandled baggage" when they improve performance on "on-time arrivals," combining the two numbers into a single index would mask this trade-off. Instead, it might be more useful to highlight the trade-off.

The Outcomes Measures Must Be Targeted to Focus on Costs that Are Impacted by the Innovation

The outcomes measures may include cost information. Before designing the data collection strategy, it is useful to specify the precise costs that are relevant. Because cost data is likely to include substantial "noise," it is valuable to target the definition of the outcomes measure as precisely as possible. Total health-care costs may be important to the CEO of the ACO, but the care delivery innovation is probably designed to impact only a small subset of these costs. Narrowing the definition of the outcomes measure to focus on the targeted costs will increase the precision of the results.

Economists and accountants consider important distinctions between *fixed versus variable costs*, average versus marginal costs, and short-run versus long-run costs. Understanding these distinction can help simplify and clarify data collection, analysis, and interpretation. Large provider and payer organizations may have cost-accounting systems that will report fixed, variable, average, and marginal costs. These key cost concepts are summarized in Table 7.5.

Table 7.5 Cost concepts

	Definitions	Examples	Why is this distinction useful?
Fixed cost versus variable cost			
Fixed cost	Fixed costs must be incurred for every hour that the ED is open	A triage nurse may be employed whenever the ED is open	It is not necessary to include fixed costs in the analysis—if the innovation will not alter the fixed costs. For example, if the behavioral health intervention will impact the number of ED visits, then variable costs are relevant. If the intervention will not alter the fact that the triage nurse is always present when the ED is open, this fixed cost is not relevant
Variable cost	Variable costs are incurred for each patient that arrives at the ED	Each patient puts on a gown at the start of each ED visit; hence, the cost of gowns is a variable cost	
Average versus marginal cost			
Average cost	Average cost is equal to the relevant expenditure divided by the number of items produced	"Items" may be any measure of the quantity of services, such as visits, procedures, or hospital days	Marginal costs are typically more relevant that average cost. Focusing on marginal cost allows the analyst to focus on the ED costs would be impacted by the change in the number of patient visits and ignore other types of costs
Marginal cost	Marginal cost measures the additional cost incurred to produce one more item	The marginal cost to see one more patient in the ED may be low if the physicians, nurses and other staff-members are already on duty. The marginal cost to see another patient is much higher if it is necessary to call in additional personnel to see the patient	

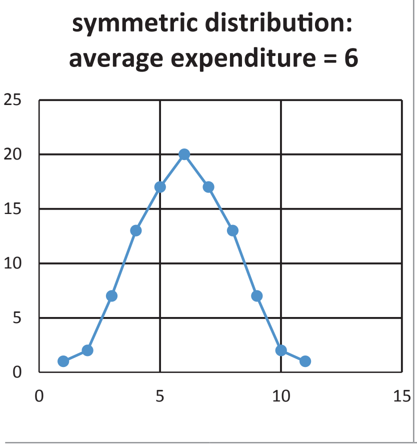
ED emergency department

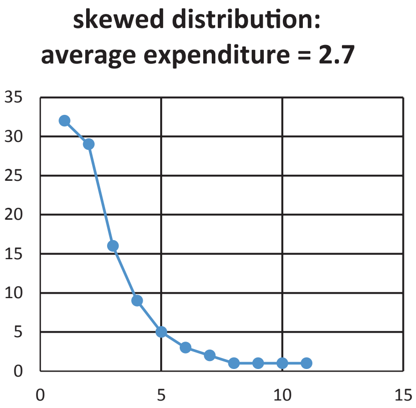
The Outcomes Measures Must Be Defined with Careful Attention to the Question of Whether Unusual Cases Should Be Included or Excluded

It is widely recognized that a small proportion of individuals incur the bulk of health-care costs. Conventional wisdom quotes the 80/20 rule: 20 % of individuals incur 80 % of the costs. From a statistical perspective, the distribution of costs is highly skewed, with a long right-side tail. In this situation, the sample average is not a meaningful number. Consider the example detailed in Table 7.6.

Table 7.6 The average is not a useful measure when the distribution is skewed

Symmetric distribution		Skewed distribution	
Annual expenditure	*Number of people with this expenditure*	*Annual expenditure*	*Number of people with this expenditure*
1	1	1	32
2	2	2	29
3	7	3	16
4	13	4	9
5	17	5	5
6	20	6	3
7	17	7	2
8	13	8	1
9	7	9	1
10	2	10	1
11	1	11	1





Consider the symmetric distribution. Most of the individuals on the left have expenditures ranging from 4 to 8, with a mean equal to 6. In contrast, 61 % (nearly two thirds) of the individuals on the right have expenditures equal to zero or one; yet the average is nearly three (2.7). In this case, the average is "pulled up" by the presence of the observations in the tail (4 % of expenditures equal to 8, 9, 10, or 11.) The average does not provide summary information about the "typical" individual.

When the distribution of the outcome variable is skewed, the key study design question is: Are the individuals who incur the unusual high-costs "outliers" whose data should be excluded from the study, or are these individuals the focus of the study? Consider, for example, a study designed to estimate the impact of prenatal care on the average number of days newborns stay in the neonatal intensive care unit (NICU). Of infants who spend time in the NICU, most stay 1 or 2 days; however a small proportion of infants stay in the NICU for several months. In a set of hospital data on NICU length of stay, the average number of days might be 45. This number does not represent the typical stay, and a small change in the number of lengthy cases can cause the average to change dramatically. Study planners must consider whether the longest 5 % of stays provide useful information. If the focus on the prenatal care innovation is to reduce the length of stay of the relatively healthy infants (so that infants who previously stayed 2 days will be healthy enough to reduce the stay to 1 day), then data on the lengthy stays is irrelevant. It should not be included in the study. In contrast, if the care delivery innovation is designed to target the infants who historically stayed in the NICU for several months, then these infants are the focus of the study, and the information about infants who stay for 1 or 2 days is irrelevant.

In conclusion, it is important to ensure broad consensus on a pragmatic set of outcomes that can be:

- Measured in a reasonable time frame
- Measured with reasonable accuracy
- Impacted by the care delivery innovation

The study design phase is a good time to consider the degree to which the innovator has “control” over the outcomes measures specified in a performance-based contract. Individual health status is typically impacted by an array of health-care, genetic, and lifestyle factors. In addition, patients who are impacted by the innovator’s care delivery strategy may also be impacted by an array of other changes in health insurance or health-care providers, given the rapid pace of change in health care and health insurance. Consider, for example, an employee wellness program that is designed to reduce health-care claims for back injuries. While the wellness program can tackle relevant issues such as weight loss and back-strengthening exercises, this program does not have control over key workplace issues such as the amount of weight lifted by employees, the degree to which employees can adjust the heights of workstations or placement of heavy objects that must be lifted. While reduction of back-related health-care claims is an important issue, it might not be a useful outcomes measure for the employee wellness program. An intermediate measure (e.g., obesity reduction or increased utilization of appropriate weight-lifting posture) would provide a more meaningful metric of the program’s impact.

Step 3: Define Relevant Independent Control Variables

What Factors Are Likely to Influence the Outcomes Measures (for the Study Population) that Are Beyond the Scope of the Study?

Data should be collected on potential confounding variables (to support cost-effectiveness analysis) and process variables (to support quality improvement). Confounding variables measure factors that are outside the control of the innovator. If an integrated care provider aims to reduce ED visits, for example, the outcome measure of ED visits may be impacted by the patient's insurance status. While implementation of PPACA is expected to increase the proportion of individuals who are insured, it is not expected to eliminate the incidence of noninsurance. Gain or loss of insurance coverage may exert a significant impact on the probability that an individual will have an ED visit—and this is largely independent of the integrated care innovation. Thoughtful anticipation of this type of confounding variable will allow the study designers to address these issues by including relevant variables in the dataset, so they can be used as independent control variables in the analysis.

Are Process Measures Useful to Support Quality Improvement?

In addition, process variables measure key elements of the care delivery process, to provide essential information for diagnosing problems that can be addressed via quality improvement efforts.

Step 4: Streamline the Data Collection Process

Data collection and analysis requires resources that do not directly contribute to patient care. Hence, it is important to ensure that the data collection process is efficient, and the resulting dataset presents the variables in a format that is useful for analysis. It is generally worthwhile to explore options for utilizing patient-level data that is already in an electronic format. This data is generally known as "administrative data" because these databases are generated in the background as providers see patients, submits claims for reimbursement, or schedule appointments.

Analysis of the impacts of a health-care innovation may rely on several different types of administrative data. Most hospitals and physicians submit health-care claims through electronic billing systems that utilize a standard system of codes to indicate the patients' diagnoses, patient-care visits, health-care procedures, lab tests, and filled prescriptions. This electronic claims data is widely used to track and analyze health-care utilization patterns. Implementation of EMR systems adds an important dimension to this electronic data. Although claims data may indicate that a patient had a lab test, it does not necessarily indicate the outcome of the test. For example, the claims data may indicate a blood test occumed to determine a patient's A1c level, but the claims data may not specify whether the level was 7, 8, or 9. In contrast, a PCP group's EMR data will probably provide information about the A1c level. Electronic data (also known as administrative data) may also provide information about an array of other issues such as missed appointments or completion of advance directives.

The decision about whether to use administrative data may require discussions with the analysts and the database administrator to understand the options and constraints offered by this data source. Korda and Eldridge (2011) note that health information technology (HIT) is a critical component of the new payment models, because it creates the information to support efficient work and it also creates the data needed to support performance measurement and analysis. Depending on the specific information required for the study, discussions with the provider's information technology experts (both in-house administrators and vendors) might include questions such as:

- Can patient diagnoses, procedures, filled prescriptions, and other health-care utilization information be captured from claims data?
- Is an EMR system available? Can this system provide information about lab test results, prescriptions written (that may—or may not—have been filled) and patient health status?
- If patients will complete a survey form or other tool, how will that information be entered into a computer? Can the patients enter this information into a computer directly? Can the forms be printed on machine-readable paper?
- If process timing or delays are important issues, can computer time stamps provide the relevant data?
- If patient compliance or no-shows are important issues, can relevant information be captured from the scheduling system?

The discussion might also address the issue of data ownership. Consider an innovator who plans to offer integrated care in a PCP setting that is designed to reduce ED visits. Obtaining information about ED utilization by the PCP group's patients may require cooperation from the relevant third-party payers. While EMR and health information exchange (HIE) are designed to reduce—and eventually eliminate—this problem, implementation of these technologies is uneven.

The discussion might also address the question of data quality. Individuals familiar with the administrative databases can typically provide useful information about the quality of specific types of data and specific fields within database. For example, data in fields that are essential for submitting claims or reporting quality measures are likely to be more accurate that data in fields that are not directly used to support routine work. In addition, data on intermediate and final health-care outcomes can be incomplete for a variety of reasons (Sing 2004). Gaps may occur because patient records may not accurately reflect changes in a patient's address, name (due to marriage or divorce), or insurance coverage. The missing data issue may be minor if the claims data information system remains unchanged during the study period. In this case, the analyst can reasonably assume that the data quality issue will not bias the study results, because the error rate is the same during the "before" and "after" periods of the study. More care is required, however, if the EMR and HIE systems have been changing during the study time frame. In this case, it may be necessary to consider whether the assumption of constant data quality is reasonable. If data quality is a significant concern, it may be worthwhile to ask the information technology administrator to provide a sample dataset to the econometricians—for preliminary assessment of the consistency of the data that is available prior to the innovation.

The possibility of incomplete data raises an additional question: If we do not observe an event (such as an ED visit), does this mean that the patient did not have an ED visit—or is this an instance of missing data? If this type of data is important to the study, it may be useful to engage statistics or econometrics expertise to consider the implications of this issue for the definition of the outcomes measure.

Step 5: Develop the Analytical Strategy

Econometrics expertise will probably be required for an in-depth cost-effectiveness study. During the study design period, these experts can address two issues:

- How will the study address the fact that health-care utilization and cost data tends to be highly skewed? How much variation is anticipated in the data, and how will this impact the necessary sample size?
- How will the study address the potential for self-selection bias?
  - Randomized controlled trial (RCT) versus multivariate statistical analysis
  - Self-selection bias as a statistical issue versus self-selection as a program management issue

We will focus here on potential strategies for addressing the possibility of self-selection bias. To illustrate the potential problem, consider a disease management program that is designed to reduce ED visits by helping patients manage chronic conditions (e.g., asthma, high blood pressure, diabetes). If a set of 2000 individuals are invited to participate in the program, it is possible that only 200 will actually participate. This raises the question: Are the 200 participants similar to the 1800 nonparticipants? Was the decision to participate correlated with previous success (or lack of success) in managing the chronic condition? Consider, first, the case in which individuals who tend to comply with medical advice have above-average ability to manage their chronic conditions, and these individuals are likely to participate in the program. In this case, program participants will have higher success in managing their conditions than nonparticipants—even if the program is completely useless. In the opposite case, individuals who have not been able to manage their conditions might be motivated to participate. In this case, participants may have a low record of success, compared to nonparticipants, even if the program is partially successful.

RCT are often viewed as the gold standard for scientific studies, but this strategy is not generally useful for estimating the cost and quality impacts of in-place programs. Instead, statistical analysis of administrative data is frequently used because:

- Statistical analysis provides a population-wide perspective.
- Analysis of data generated by operation of the program provides information about the impact of the program under “real world” conditions.
- These methods can also control for changes over time in the characteristics of patients, health insurance coverage details, or provider availability.

Multivariate regression analysis of data generated for all individuals eligible to participate in the program can include a set of variables to control for relevant characteristics of individual patients. It is important to note that these methods require a complete set of patient-level data on all individuals who were eligible to participate in the program. Any variable that can only be measured for program participants will not be useful in the study.

Three types of multivariate econometric strategies are used to address potential self-selection bias: Heckman selection methods, propensity score matching, or difference-in-difference estimation. All three methods require substantial before-and-after data, and data on individuals who did and did not participate in the program. All three will also require econometrics expertise. Contracting with econometrician to complete the analysis will also yield the extra credibility of analysis generated by a neutral third party. The difference-in-difference strategy may be useful for cost-effectiveness studies that initially involve only a subset of patients (so that there is a treatment group and a control group). For examples, see Mukhopadhyay and Wendel{3,20} (2008, 2013).

In some situations, it may not be feasible to compile a dataset that is sufficient to support multivariate statistical analysis. As a second-best strategy, the program manager may focus on identifying and counting instances in which a behavioral health intervention clearly prevented a negative health event that would have led to a more costly health-care event. For example, the psychologist could identify and count instances in which a screening led to diagnosis and treatment of a preexisting but previously undiagnosed mental health condition, or prescription of medication for a previously diagnosed mental health condition for which the patient was not taking appropriate medication, or initiation of a behavioral intervention for an individual with a poorly managed chronic condition—that initiated appropriate self-management of the condition.

This counting strategy offers two benefits:

- It is inexpensive to implement.
- It identifies impacts in a way that has a clear interpretation.

It is also marked by disadvantages:

- Events that did not occur because they were prevented cannot be counted directly.
- This method is not equipped to address changes in population, insurance, or provider characteristics over time.

Despite the disadvantages of this tracking method for estimating overall program impacts, this method can provide concrete information about the types of patients and situations in which the program may produce benefits. It might offer a useful pilot study strategy, that could help identify data that should be included in the larger dataset constructed for statistical analysis.

Conclusion

It is not unusual to hear people ask: "prevention always 'pays'—doesn't it?" Louise Russell (2007) offers a clear answer to this question: No, we cannot assume that prevention will generate sufficient savings to offset the cost of the preventive activity. Table 7.7 presents a simplified example to illustrate one component of Dr. Russell's logic. Consider a program to screen for condition X. This screening program is 100% accurate, and it can be followed by a prevention activity that is 100% effective. In our example, assume that the screening cost is US$ 10 per individual,

Table 7.7 Simplified example to illustrate one component of Dr. Russell's logic

(A) Screen for a common condition (X) that occurs in 80 % of individuals		
Assume		
Screening costs US$ 10 per individual		
Screening is 100 % accurate		
Screening can prevent health-care costs equal to US$ 100		
Cost to screen 100 individuals	US$ −1000	
Prevent spending of $ 100 in 80 of these individuals	US$ 8000	
Net savings	*US$ 7000*	
(B) Screen for a common condition (X) that occurs in 5 % of individuals		
Assume		
Screening costs US$ 10 per individual		
Screening is 100 % accurate		
Screening can prevent health-care costs equal to US$ 100		
Cost to screen 100 individuals	US$ −1000	
Prevent spending of US$ 100 on 5 of these individuals	US$ 500	
Net savings	US$ −500	

while the prevented health care would cost US$ 100 per individual. If we screen a population in which most people (80 %) have condition X, we will spend US$ 1000, we will prevent future spending of US$ 8000, and we will generate net savings equal to US$ 7000. In contrast, if we screen a population in which only 5 % of individuals have condition X, we will screen 95 healthy people and only 5 people with condition X. With the same $1000 expenditure, we will only prevent future spending of US$ 500, and we will incur a net loss of US$ 500.

This implies that selection bias is not just a statistical issue; it is also a program management issue. Ensuring that a prevention program will be cost-effective requires effectively enticing participation by individuals who can benefit from the program. Recognizing the importance of managing self-selection blurs the distinction between a cost-effectiveness study (designed to answer the question: Is a specific innovation cost-effectiveness?) and quality improvement efforts (designed to identify opportunities to strengthen program outcomes). Econometric analysis of an innovation's cost-effectiveness can include analysis of self-selection bias, to answer the question of whether self-selection has been adverse or beneficial. It can also provide information about the characteristics of people who do—and do not—participate, to inform efforts to strengthen the alignment between characteristics of people who benefit from the program and characteristics of people who tend to participate in the program (Mukhopadhyay and Wendel 2008).

The availability of "big data" is increasing, and innovators are developing new strategies for analyzing this data to understand—and influence—individual health and lifestyle behaviors:

- Some insurers are using big data to help individuals make informed decisions about health-care options. Health Dialog, for example, contracts with insurance companies using a shared-savings format. The insurance companies provide monthly claims data to Health Dialog. This company uses computer algorithms to scan the claims data to identify individuals who may be considering surgery (possibly indicated by a relevant MRI, for example). Identifying these individuals allows the company to send relevant research-based information to them—about surgical and nonsurgical options, recovery times, probabilities of success, long-term results, and accounts of patient perspectives on the options (Ganda 2010).

- Health-care providers that form ACO's or Medical Homes are proactively examining options for using big data to understand and influence individual lifestyle decisions. An ACO could offer to pay the monthly gym membership fee for individuals willing to use a cell phone-based diet tracker and share their cell phone data. Because cell phone data includes information about the location of the cell phone over time, this data could be mined to analyze length of the time spent at the gym, locations at which the individual ate lunch, and whether the individual walked or drove to the restaurant.

Finally, we note that cost-effectiveness studies serve multiple purposes:

- Careful analysis of the impacts of specific interventions or innovations support process improvement efforts that are designed to strengthen care delivery or care coordination processes.
- Estimates of the impacts of specific provide interventions help providers and payers manage the risk inherent in capitated, pay-for-performance, or bundled payment contracts.
- Estimates of the impacts of specific provide interventions also provide the information needed to administer shared-savings contracts.

Producing meaningful results requires careful study design to address the potential effects of self-selection of program participants, differential compliance rates among participants, and the confounding effects of simultaneous changes in the health-care system. Constructing the dataset and completing the multivariate statistical analysis may require outside expertise. Decision about the use of outside experts should be made up front: If outside experts will be needed during the study implementation and analysis phases, it is important to include those individuals in the planning process. These experts may provide useful guidance on variable definitions, analytical methodology—and the variables that will be needed to support those methods and dataset construction and formatting.

Producing meaningful and useful information can yield substantial benefits; however, a careful study that produces meaningful results will require investments of staff time and, potentially, financial resources to engage individuals with expertise in database management, econometrics, or economics. Specifying the study goals at the outset will help innovators assess the costs and benefits of implementing a cost-effectiveness study. Clarity about the study goals, costs, and benefits will guide decisions about the level of precision that is needed to guide process improvement and contracting decisions, and the level of effort that will be invested in the study process.

Key Terms

Bundled Payment The concept of bundled payment was initiated to provide incentives for increased coordination of care. Consider, for example, Medicare transfer patient. By definition, a transfer patient goes from home to an inpatient hospital stay, moves to a nursing facility for follow-on care, and then returns home. The hospital and the nursing facility may be owned by different entities and they submit separate claims for Medicare payment; hence they may not have incentives to coordinate care. For example, the hospital may not have an incentive to provide the optimal level of physical therapy—if it believes that the nursing facility will fill-in this gap. Under bundled payment, one entity (most likely—the hospital) would assume responsibility for the entire episode of care. The hospital would submit one claim for “bundled payment” for the episode of care, and the nursing home would be a subcontractor to the hospital. In this scenario, the two entities have financial incentives to minimize the cost of the care episode.

Accountable Care Organization Under the PPACA, health-care organizations can form ACOs. The ACOs provide an organizational structure to expand the concept of bundled payment. Physicians, hospitals, and other providers form a network. The PPACA-specified reimbursement system provides incentives for the network to minimize the cost of care by strengthening coordination and prevention. The ACO’s also have incentives to meet quality standards.

Patient Centered Medical Home The Agency for Healthcare Research and Quality defines a medical home as a primary care provider that encompasses five functions (http://pcmh.ahrq.gov/page/defining-pcmh). Specifically, the primary care medical home:

1. Uses a team-based approach to physical and mental health care
2. Strengthens patients’ capacities for preventing and managing chronic conditions
3. Coordinates care that patients receive from specialists, hospitals, and other health-care providers
4. Addresses access issues by ensuring reasonable wait time for appointments and providing additional access through telephone or email communications
5. Engages in continuous quality improvement

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Part III

Specific Applications of Behavior Health in the Patient-Centered Medical Home

Chapter 8
Depression Management in the Medical Home

Justin M. Nash, Marisa Sklar and Daniel R. Evans

Depression is common and disabling. Worldwide, an estimated 350 million people are affected (Marcus et al. 2012), and in the USA, an estimated 9% of the population is experiencing a depressive disorder at any given time (Strine et al. 2008). Major depression is considerably disabling (Croghan and Brown 2010; Kessler et al. 2003; Simon 2003), second only to back and neck pain for having the greatest effect on disability days (Merikangas et al. 2007). Depression is also well understood to be a major risk factor for suicide (Simon and VonKorff 1998).

Depression is classified as a mood disorder within the Diagnostic and Statistical Manual of the American Psychiatric Association (2013). Specifically, depressive disorders include major depressive disorder(single episode or recurrent) and persistent depressive disorder (previously known as dysthymia). Also among the mood disorders, and not the focus of this chapter, are variants of bipolar disorder, which include manic episodes along with the depression component.

There are effective treatments for depression. In adults, pharmacotherapy and psychotherapy, delivered singly or in combination, have a strong evidence base (Cuijpers et al. 2008; O'Connor et al. 2009b). The most commonly used psychotherapies for depression are cognitive-behavioral therapy (CBT) and its variants. About one half to two thirds of patients initiating treatment for depression achieve remission within a year, although, remission related to medication therapy may require up to four adequate treatment trials (O'Connor et al. 2009b; Rush et al. 2006).

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_8

Even with available effective treatments, depression has high recurrence rates and remains largely unmanaged. At least half of individuals diagnosed with depression will have a recurrence following their first episode (O'Connor et al. 2009b; Rush et al. 2006). The chance of recurrence increases with subsequent episodes (Rush et al. 2006). Fewer than half of those affected in the world (in some countries, fewer than 10 %) lack access to adequate care (Marcus et al. 2012). Barriers include a lack of resources, lack of trained health care providers, and social stigma associated with mental disorders. Another barrier to effective care is inaccurate assessment. Even in the USA and other high-income countries, people who are depressed are not always correctly diagnosed (Marcus et al. 2012). Also contributing to high recurrence and challenges in effective management are the complex interacting social, psychological, and biological factors that are central to the onset and course of the disorder.

The Need and Promise of Primary Care in Depression Management

Primary care is a setting that holds promise in better identifying and addressing depression and preventing its recurrence. The World Health Organization emphasized that integration of mental health services into primary care is the most viable way of ensuring that people have access to the mental health care they need (World Health Organization 2008). In the USA, half of the care for depression and other common mental health disorders is delivered in general medical settings (Katon et al. 2010; Kessler et al. 2003; Unützer et al. 2006). The rate and severity of depressive symptoms in primary care settings are comparable to those seen in psychiatric settings (Gaynes et al. 2005; 2007).

For primary care to tackle the depression problem in this country, the US Preventive Services Task Force recommends routine depression screening for all adults and adolescents but only in clinical practices that have systems in place to assure accurate diagnosis, effective treatment, and follow-up (O'Connor et al. 2009a). The American College of Preventive Medicine further recommends that all primary care practices should have such systems of care in place (Nimalasuriya et al. 2009).

For primary care providers who identify depression in patients, almost 90 % recommend antidepressants, either alone or in combination with psychotherapy (Robinson et al. 2006). In primary care, where 70–80 % of antidepressants are prescribed (Mojtabai and Olfson 2008), selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs) are efficacious (Arroll et al. 2005; Geddes et al. 2005; Simon 2002). The SSRIs, however, are more commonly used than TCA's because of better tolerability and reduced toxicity in overdose (Arroll et al. 2005; O'Connor et al. 2009a). Recovery rates for depressed patients in primary care are comparable to rates in psychiatric settings for patients with similar depression levels (Gaynes et al. 2008).

The interest in addressing depression in primary care also extends to whether costly comorbid chronic disease conditions can be better managed with improved depression (Unützer et al. 2006; Watson et al. 2012). More than 80 % of patients with depression have a medical comorbidity (Klinkman 2003). Common comorbidities include heart disease, diabetes, arthritis, asthma, chronic pain, and cancer (Katon 2003; Scott et al. 2007; Watson et al. 2012). Depression directly affects the onset and course of chronic disease and also indirectly affects chronic disease by contributing to patient stress, dysfunction, lack of motivation, poor self-management, and unhealthy lifestyle behaviors (Croghan and Brown 2010; DiMatteo et al. 2000; Katon et al. 2007). Depression among those with chronic disease has been linked to an increase in use of health care services, disability, and work absenteeism when compared with those without depression (Watson et al. 2012). In the presence of unmanaged depression, effectively managing costly chronic disease is considerably compromised.

The promise of primary care in addressing depression, unfortunately, has not been realized. Primary care clinicians detect major depression in only one third to one half of their patients with the disorder (Mitchell et al. 2013; Williams et al. 2002). Even with high rates of antidepressant medication use, few patients have access to evidence-based psychotherapy or receive an adequate trial of the medication (Kessler et al. 2005). Among patients who initiate antidepressant use, only 25 % of patients receive the recommended three follow-up visits within the first 12 weeks consistent with Healthcare Effectiveness Data and Information Set (HEDIS) criteria (Simon 2002), and up to 40–67 % discontinue use within 3 months (O'Connor et al. 2009a; Olfson et al. 2006; Simon 2002; Solberg et al. 2005). Also, lacking is available evidence on the effective management of comorbid depression and chronic disease in primary care (Watson et al. 2012).

With recognition that depression is a chronic disabling condition that also impacts management of other costly chronic diseases, systems are being developed in primary care to better control and manage depression. In this chapter, we discuss the approaches to managing depression in primary care. We first discuss the evidence-based care management models that are incorporated into the primary care system and used to address depression. Behavioral health clinicians have varied skills to play key roles in the development, implementation, and evaluation of care management in primary care. We then discuss evidence-based psychotherapy approaches that can be delivered by behavioral health clinicians in primary care settings. Psychotherapy can be conducted by those who are either colocated in primary care practices or who are embedded as part of the primary care team.

Care Management in the Medical Home

As primary care practices transform into patient-centered medical homes (PCMH), care is increasingly team-based, interprofessional, whole-person oriented, and emphasizes improved quality and reduced cost for the population of patients in the practice. At the core of the team-based care in the medical home is care management. In care management, the focus shifts from episodic acute care of individuals to managing the health of defined populations, especially those with chronic disease. Care management targets system-level factors to facilitate the delivery of care.

Care management in the medical home provides innovative opportunities for depression to be more effectively managed. In care management, there is typically some combination of regular screening and registry tracking/outcome measurement, with the care manager coordinating all aspects of care while the primary care physician maintains responsibility of care. Evidence-based interventions are delivered (e.g., pharmacotherapy, psychotherapy) by medical staff or as needed specialists in behavioral health.

In this section, we discuss three exemplary applications of care management for depression in the medical home: MacArthur initiative on depression and primary care (Cole et al. 2000); Improving Mood: Providing Access to Collaborative Treatment (IMPACT; Katon et al. 1996; Unützer et al. 2002); and the Depression Improvement Across Minnesota, Offering a New Direction (DIAMOND; Pietruszewski 2010; Solberg et al. 2013).

The MacArthur Initiative on Depression and Primary Care In order to enhance the quality of care and outcomes for patients with depressive disorders who are seen in primary care practices, the John D. and Catherine T. MacArthur Foundation launched the initiative on depression and primary care in 1995 (Cole et al. 2000). The initiative uncovered major system-level barriers to the treatment of depression in a primary care setting and set itself four goals: (1) to develop office routines and practice patterns that could improve the management of patients with depression; (2) to develop educational programs and tools to help primary care physicians better recognize and care for patients with depression; (3) to evaluate the impact of these practices, programs, and tools; and (4) to disseminate the new ideas and materials to primary care clinicians, medical groups, specialty societies, insurance plans, and others.

The MacArthur initiative underscores the notion that excellent care for depression is achieved through a well-developed system of care. In a number of clinician manuals and toolkits for managing depression in primary care, the initiative outlines specific structural and procedural innovations that are believed to facilitate a systematic approach to depression management. These innovations include an easy-to-use depression diagnostic/severity instrument (the Patient Health Questionnaire (PHQ)-9), telephone care management support to promote patient adherence to the management plan, a strategy for systematic monitoring of the response to treatment and modification of the plan if indicated (the three-component model; 3CM), and a partnership among the primary care clinician, care manager, and mental health specialists with the patient. What follows is a description of their depression care process wherein the process for implementing the abovementioned innovations is described.

In their depression care process, six steps are outlined for detecting and managing depression in primary care. The first step is recognition and diagnosis, wherein patients are assessed for depression diagnosis and severity, as well as suicide risk, through the use of the PHQ-9. In the second step, additional history including previous treatments and comorbidities are gathered from the patient. The physician may then present treatment options to the patient and elicit from the patient their treatment preferences. Step 3 is the initial treatment process wherein key educational messages are delivered, self-management goals are set, and care management and care management calls are discussed, recommended, and scheduled.

The care management process takes place in step 4. Written educational materials are mailed to the patient, initial calls for treatment initiation and adherence are made, follow-up calls using the PHQ-9 to assess treatment response are made, and the care manager, psychiatrist, and clinician communicate with one another to discuss the patient's treatment. Step 5 is the acute phase clinician follow-up wherein clinician office visits are coordinated with care management contacts. The clinician evaluates patient response to treatment and modifies treatment if warranted. In step 6, treatment response monitoring continues after remission. Counseling and/or antidepressant treatment is continued for 4–9 months to prevent relapse. Risk factors are assessed for need for long-term prophylactic treatment, and long-term prophylactic treatment and monitoring is continued for at-risk patients.

The Improving Mood: Providing Access to Collaborative Treatment The IMPACT program is a primary-care-based collaborative care model for the treatment of depression, usually late-life depression, including key components of evidence-based models for chronic illness care (Katon et al. 1996; Unützer et al. 2002). Like the MacArthur initiative, the IMPACT components include collaboration between primary care practitioners, patients, psychiatrists, and a trained depression care manager (DCM) who is typically a nurse, social worker, or psychologist. In the IMPACT program, these individuals collaborate on identifying and defining the problem, development of a therapeutic alliance, a personalized treatment plan that includes patient preferences, proactive follow-up and outcomes monitoring, a depression care manager targeted use of specialty consultation, and protocols for care. Also similar to the MacArthur Initiative, the IMPACT program utilizes a stepped-care approach to develop and administer a course of treatment.

Within this stepped-care approach, the patient first meets with the DCM. During this first meeting, the patient receives an educational video and booklet about late-life depression and completes an initial assessment of the patient's depressive symptoms. The DCM encourages the patient to engage in behavioral activation and discusses options for treatment, typically antidepressant medication or a course of psychotherapy delivered by the DCM in the primary care setting. The DCM then works in collaboration with the patient and their primary care physician to develop the treatment plan.

The DCM also has weekly meetings with a supervising team of psychiatrists to discuss new patients and challenging cases. When a patient's depressive symptoms have not improved significantly after 10–12 weeks of treatment, the treatment plan is changed again in a collaborative fashion between the patient and the patient's primary care physician. The modified treatment is then delivered, representing the second step of treatment.

Once the patient has demonstrated significant improvements in depression symptoms, the DCM follows up with the patient with monthly telephone calls. During these phone calls, the DCM provides maintenance support, risk management, and relapse prevention. This represents the third step of treatment. Depending on the degree of the improvement in the patient's depression, these phone calls may continue for a year following the treatment's initial inception.

The Depression Improvement Across Minnesota, Offering a New Direction The Institute for Clinical Systems Improvement (ICSI) launched the DIAMOND model in 2008 to change how treatment of depression was delivered in the primary care setting (Pietruszewski 2010; Solberg et al. 2013). Through their review of trials for managing depression in primary care settings, the ICSI showed that a collaborative care team approach improves patient health. They developed the DIAMOND model for treating depression in the primary care setting based on the abovementioned IMPACT model. The DIAMOND initiative emphasizes the importance of structural and procedural innovations at the organizational level when caring for depression in the primary care setting, focusing specifically on a collaborative agreement on the treatment model, as well as a new model for payment to reduce economic barriers to the delivery of care.

The DIAMOND treatment model consists of six key components: (1) use of a validated screening tool for screening and ongoing management of depressive symptoms (PHQ-9); (2) use of a registry to track the patient's PHQ-9 scores and progress over time; (3) use of evidence-based guidelines and a stepped-care approach for treatment modification and intensification; (4) relapse prevention planning to prevent depression recurrence; (5) a care manager who supports and coordinates care and troubleshoots barriers with patients; and (6) psychiatric consultation and caseload review.

Similar to the IMPACT model, treatment in the DIAMOND model is delivered through care managers. These care managers schedule regular contacts with patients, either face-to-face or phone meetings, during which the care manager educates patients about depression and motivates them toward self-management. The care managers regularly administer the PHQ-9, monitor patients' progress over time, and manage the patient registry. The care managers also have increased accessibility allowing for more frequent contacts with the patient and greater continuity of care than is typically available with brief or infrequent physician visits. Additionally, the care managers serve as the treatment liaison between the primary care physician, the consulting psychiatrist, and the patient. The consulting psychiatrist reviews the care manager's caseload on a weekly basis and provides recommendations to the care manager and primary care physician on treatment for patients who are not demonstrating improvements in their depression. Recommended changes can include medication adjustment and referrals to other mental health resources. Ultimately, the primary care physician makes the final decision about each patient's care plan.

Payment redesign is a structural component to the DIAMOND model crucial to effective delivery of treatment for depression. The DIAMOND model created a depression care management payment to be paid monthly to the participating primary care clinics for a set of services covered under the care management program. This initiative standardized how medical practices become certified to participate in DIAMOND, coverage for the services described above under the care management payment, the eligibility criteria for patients enrolling in the DIAMOND program, and the length of time for patients to be enrolled in the program. The payment redesign also supported initial payment for the delivery of services, eventually to be linked to clinical outcomes.

A single billing code was established for DIAMOND services used within certified DIAMOND clinics. This single billing code covers the care managers' services and weekly consultation and case review by the psychiatrist. Patients who are 18 years old or older are eligible to engage in the DIAMOND program for up to 1 year, provided they have a diagnosis of major depressive disorder or persistent depressive disorder (dysthymia) and a PHQ-9 score of 10 or higher. The health plans negotiate the monthly reimbursement amount with each clinic in order to avoid violating anti-trust law.

Evidence Base for Care Management Evidence to support the effectiveness and cost-effectiveness of care management programs for depression treatment in the medical home is reported in a number of systematic reviews (Badamgarav et al. 2003; Gensichen et al. 2006; Neumeyer-Gromen et al. 2004; Williams et al. 2007). Care management has been demonstrated to more effectively control depression than usual care (Gilbody et al. 2006; Katon et al. 2010). Care components that boost effectiveness of programs, in addition to depression screening, include (1) care management by a nonphysician; (2) involvement of behavioral health specialists in the care; (3) coordination of the care management team members; (4) education and support of patients for self-management; and (5) attention to patient preferences (Gilbody et al. 2003; O'Connor et al. 2009a; Solberg et al. 2005; Unützer et al. 2006; Von Korff and Goldberg 2001). Successful programs also involve training of clinician and office staff, patient education materials, multiple follow-up contacts, and mental health referrals as needed (Rost 2001; Wells et al. 2000).

While there is strong evidence of care management for depression, the evidence base is less developed in determining the effectiveness of practice-based primary care approaches for patients with comorbid depression and chronic medical diagnosis such as diabetes (Bogner et al. 2007; Ciechanowski et al. 2006; Katon et al. 2004). In patients with depression and multiple medical conditions, collaborative care programs improved outcomes for depression and quality of life but had less of an impact on medical outcomes.

Roles of Behavioral Health Professional in Care Management The MacArthur, IMPACT, and DIAMOND innovations are exemplary behavioral health applications in primary care that demonstrate how system-level factors can be targeted to facilitate the delivery of care from provider to recipient. In care management models, behavioral health professionals can play a variety of roles at the systems level as well as the individual patient level. Individual care from behavioral health professionals can impact individual patients but serving in a variety of roles on the care management team can broaden the reach and influence of the behavioral health professionals expertise across the practice (Interprofessional Education Collaborative Expert Panel 2011; McDaniel et al. 2014; Nash et al. 2013, 2012).

Systems Level To make contributions at the systems level, behavioral health professionals need to understand systems of health care, and especially systems in primary care, and also understand the concepts of population health. Depending on training and expertise, behavioral health professionals can lead or assist in the development, implementation, and evaluation of different components of care management programs (e.g., screening protocols, depression tracking, and quality improvement). Behavioral health professionals can take on the role of training other health professionals in team-based care and also seek to facilitate the effectiveness of the care management team.

Consultation On depression care management teams, behavioral health professionals are often in a consultation role. Behavioral health professionals can move in and out of multiple roles in coaching, inspiring, and teaching primary care team members' options in relating to a particular patient or patient type. Behavioral health expertise can be shared to shape the use of depression management resources, engage primary care team members in comanagement of patients, support the decision-making of primary care team members, integrate a depression management component into the medical treatment of the patient, enhance the primary care clinician's use of psychological interventions such as motivational interviewing, and help the depression care management team address depression at early stages of development.

As part of the consultation process, the behavioral health professional can help in framing depression in behavioral and functional terms and encouraging the use of evidence-based approaches. For example, the behavioral health professional can encourage and guide the use of motivation interviewing (MI) by depression care management team members. MI is a helpful approach for health-care professionals working with depressed patients, including patients who are struggling with using self-management strategies, having difficulty with following prescribed medication regimens, or in need to enhancing healthy behaviors (e.g., smoking cessation).

While the majority of patients with symptoms of depression can be managed in the medical home, some patients will require a more intensive level of specialty mental health service. The behavioral health professional can help guide the care management team in knowing appropriate triage and can use collaborative arrangements with specialty mental health services to facilitate care across the services. For patients who present a barrier to accessing specialty mental health services, the behavioral health professional can guide the primary care team managing the depression to the extent that it can in primary care, while continuing to increase motivation of patients to accept outside referral when indicated (e.g., psychotic depression).

When serving in a consultation capacity, feedback to the care management team must be timely, brief, and meaningful. The feedback can be provided in different formats, including "curbside consultations," phone call, secure e-mail or electronic tasking, or through written documentation in the electronic health record. The modality of communication can be flexible and tailored to the nature of the referral question and preferred communication style of the care management team. The feedback is also provided so that it integrates with the depression management efforts of the care management team.

Direct Patient Care In addition to the various roles mentioned, the behavioral health professional is the resource the primary care team relies on for the provision of direct psychotherapy services for the depressed patient. Whether part of or separate from care management programs, behavioral health clinicians can provide greater access for patients in primary care to receive empirically supported psychotherapy for depression.

Psychotherapy for Depression in Primary Care

Approaches to psychotherapy for depression in primary care are adapted from specialty mental health settings where there is a large body of evidence demonstrating the effectiveness using 12–20 weekly hour-long sessions (Butler et al. 2006). Psychotherapy for depression in primary care is modified to match the pace, tone, and flow of the primary care setting. While balancing a population-based approach with the needs of individual patients, a high volume of patients is seen, often in brief encounters (15–30 min), and usually using a limited number of contacts (Blount 1998; James and O'Donohue 2009; Robinson and Reiter 2007).

The behavioral health clinician in the medical home understands that patients' decisions and behaviors occurring outside of the primary care setting will have the biggest impact on their depression. Patients are understood to be the primary agents of change who need to invest in and guide the depression treatment and their objectives. As part of psychotherapy for depression in primary care, patients are guided in self-management strategies that are supported with home-based practice and resources such as patient education handouts, websites, and community and clinic resources.

In primary care, the ultimate responsibility of the patient's depression management rests with the primary care physician and the other team members. Follow-up appointments for depression can occur as needed, conjointly or alternating with another primary care service (e.g., medical visit, lab), depending on the patient and clinic factors. Flexible scheduling is considered to reduce the number of visits to the primary care clinic also demonstrating awareness that transportation and other factors (e.g., work hours) can be a barrier to obtaining care for many patients, especially those with more limited resources. If needed, there is some flexibility in providing more in-depth, longer-term psychotherapy for depression to selected patients as needed. Efficient practice management is essential as there is limited time to deliver interventions and a wealth of potential interventions that could be offered.

Below, we provide an overview of psychotherapy approaches for depression in primary care that could be completed by a behavioral health clinician in a more limited time frame, followed by a discussion of potentially important factors to consider when implementing these protocols. The approaches are meant as general templates rather than specific protocols per se, and should be implemented with a number of considerations that are discussed in a later section.

Cognitive-Behavioral Therapy A core premise of CBT is that emotions are difficult to change directly but can be influenced by altering thoughts and behaviors, which in turn affect emotions. CBT is a skills-based approach that includes identifying and replacing irrational and dysfunctional beliefs with more adaptive ones and increasing engagement in pleasurable activities (Cully and Tetten 2008). A CBT approach to treating depression in primary care might begin with education about the relationship between pleasant activities and mood, followed by collaboration with the patient to identify a few easy-to-complete pleasant activities that the patient could perform for homework. The following session would then include review and troubleshooting homework, an introduction to the relationship between thoughts and feelings, and a homework assignment to track these relationships, as well as an expansion in the frequency or duration of pleasurable activities. At the third session, the therapist could introduce cognitive restructuring techniques to challenge dysfunctional negative thoughts and ask the patient to practice and track these efforts for homework. A final session of treatment might involve troubleshooting difficulties in the cognitive and behavioral strategies and developing a relapse prevention plan.

Behavioral Activation Behavioral activation (BA) is an intervention that emerged from the more encompassing CBT. BA focuses on how depressed behavior is a coping strategy to avoid environments that provide low levels of positive reinforcement or high levels of aversive control (Jacobson et al. 2001). One of the primary therapeutic techniques of BA is teaching patients to take actions that can improve their mood despite their current emotional state. BA typically begins by providing a treatment rationale regarding how engaging in activities that increase pleasure and accomplishment can counteract feelings of depression. As part of a first session, the therapist could work with the patient to identify one or two important life areas to target for change (e.g., family, recreation), followed by identifying a few relatively non-challenging activities in these areas to do for homework. Ideally, the patient would track engagement in these activities, rating their perceived importance, pleasure, and difficulty in engaging in these activities. At the next session, homework could be reviewed, and barriers that prevented completion of activities could be addressed, using techniques such as breaking down goals into smaller chunks. The following session might focus on collaborating with the patient to expand the frequency, duration, and number of valued activities. A third session could involve a similar process of troubleshooting barriers to goal completion and expanding the list of valued activities but depending on how the patient is progressing could also serve as a final session that includes identifying warning signs that depression might be recurring, as well as coping strategies to employ in high-risk situations.

Acceptance and Commitment Therapy Acceptance and commitment therapy (ACT) is rooted firmly in behaviorism, and shares many elements of BA, but is based on a contextual theory of language and cognition (relational frame theory). ACT applies mindfulness and acceptance processes, and commitment and behavior change processes, to create flexibility in coping and interacting in the world. From the ACT perspective, the essential problem of depression is not depressed mood or negative thoughts but rather how one relates to these experiences, specifically the tendency to attend to them, believe them to be real or true, and attempt to control or avoid them (Luoma et al. 2007). Creating psychological flexibility entails being aware of and accepting difficult thoughts and feelings while committing to behave in a way that is consistent with one's values (Hayes 2004). More specifically, psychological flexibility consists of six interrelated core processes: (1) acceptance: acknowledging and allowing one's inner experiences without attempting to avoid them; (2) cognitive defusion: relating to one's thoughts and feelings not as real but as verbal constructions; (3) being present: open, curious, and nonjudgmental attention to present moment experiences; (4) self as context: sense of self as consciousness or awareness rather than the content of consciousness; (5) values: chosen and meaningful life directions; and (6) committed action: behaviors in the direction of identified values.

ACT protocols often begin with what is called "creative hopelessness," eliciting from the patient a list of failed attempts to control or avoid unpleasant thoughts and feelings, noting how these efforts have often made the problem worse. The implicit goal of this process is to help the patient open up to alternative ways of relating to their experiences. ACT often uses metaphors to illustrate concepts, and in this initial stage of treatment the quicksand metaphor is commonly used to show how struggle with unpleasant thoughts and feelings can be counterproductive. At this first session, the clinician might also introduce the connection between mood and behavior, asking the patient to perform a valued behavioral goal for homework. At the next session, the clinician could explore any difficulties with the behavioral goal, review the ineffectiveness of control and avoidance strategies, and introduce willingness/acceptance as an alternative. The next session might introduce cognitive defusion exercises designed to help the patient become disentangled from their thoughts and feelings by seeing them as temporary mental events that may not reflect reality, are not dangerous, and do not need to be avoided or controlled. In-session exercises that can also be assigned for homework might include asking patients to label distressing thoughts as just thoughts (e.g., "I notice that I'm having the thought that I'm a loser") and brief mindfulness exercises (e.g., following the breath and returning attention to the breath when the mind wanders). The final session might involve exploring values and examining life domains where the patient is not living consistently with identified values. The clinician would explain how willingness and defusion are used in the service of valued behaviors and collaborate with the patient to identify activities to move the patient in the direction of identified values. Psychotherapy is essential and sometimes the only treatment approach used for depression in mental health settings, where it is supported by a strong evidence base (Butler et al. 2006). In primary care, as in other medical settings, the modal approach is pharmacotherapy; using psychotherapy in medical settings is considered relatively new and untested.

Evidence Base for Psychotherapy for Depression in Primary Care and its Comparison to Pharmacotherapy Despite its newcomer status, there is a growing body of evidence to support the use of psychotherapy to manage depression in primary care. Recent reviews and meta-analyses suggest that 6–10 sessions of 30–50-min duration can be effective, though, possibly with a smaller effect size than the more extended protocols (Cape et al. 2010; Cuijpers et al. 2009; Nieuwsma et al. 2012; Twomey et al. 2014; Wolf and Hopko 2008).

The comparative effectiveness of psychotherapy and medication for depression management in primary care is not established, although each is effective relative to placebo. The lack of findings to determine comparative effectiveness in primary care is no surprise considering all the factors that need to be considered in trying to answer the question, including whether just second generation antidepressants are studied, the experience and training level of clinicians delivering psychotherapy, severity level of depression, and the experimental nature of the study (Arroll et al. 2005; Geddes et al. 2006; Simon 2002; Spielmans et al. 2011). Even in specialty mental health settings, there is ongoing debate about whether psychotherapy or medication is more advantageous (Cuijpers et al. 2008; Gaudiano et al. 2009; Spielmans et al. 2011),

Considerations for Psychotherapy for Depression in Primary Care There are many considerations in deciding whether to use psychotherapy or medication alone, or the combination. Medications have some advantage in being easier for patients to access, more readily disseminated by primary care providers, perhaps less expensive for patients, and less time consuming for patients and mental health provider. Antidepressant medications have the disadvantage of creating potential safety concerns when used individually or when used in combination with other medications, having side-effect profiles that can create other life compromises, lacking effectiveness if the dosing is not adequate for a long enough time frame, and losing ongoing benefit when discontinued (O'Connor et al. 2009a; Olfson et al. 2006; Rush et al. 2006; Simon 2002; Solberg et al. 2005). Psychotherapy in primary care, on the other hand, is safe, effective, and can be the modality of choice for many primary care patients (Backenstrass et al. 2006). The limitations of psychotherapy include the time required to attend clinic visits, the need to apply self-management strategies between visits to have a sufficient impact, and the availability of trained clinicians to deliver treatment as intended.

Considering the population health focus, the culture of medicine, and the time and resource constraints in primary care, behavioral health clinicians often attempt to distill the spirit of the original treatment protocol or use only selected components of the longer versions of protocols when conducting psychotherapy in primary care (Funderburk et al. 2011).

Even condensed in some form, psychotherapy approaches possess several common or "nonspecific" factors, including therapeutic alliance, empathy, and positive regard, that are essential to the treatment success and that some have argued are the most important ingredients in treatment effectiveness (Laska et al. 2013). In terms of specific factors that can influence treatment implementation decisions, it may be helpful to consider the guidelines for evidence-based practice, which includes characteristics and preferences of the patient, empirical support for the treatment, and experience of the clinician (Institute of Medicine 2001).

There are a number of patient-specific factors that should be considered when implementing depression treatment in primary care, such as the patient's ethnic and cultural background, age, literacy level, and treatment history. Some of these patient characteristics may be either unique to primary care or present unique implementation challenges. For example, if a clinician is conducting treatment in diverse underserved communities, cultural and linguistic sensitivity and awareness is critically important. When using an interpreter or language line, the amount of material that can be covered in a given session might be considerably compromised. In some primary care settings, homelessness, poverty, and legal status issues can be present and have an influential effect on psychotherapy implementation strategies. Compared to a specialty mental health setting, primary care patients may also present with fewer chronic and severe mental health concerns but with greater physical health concerns, which can require further adjustment of therapeutic focus (Bower and Gilbody 2005; Watson et al. 2012).

There are also important contextual factors in a primary care setting that are important to consider. One is the extent to which the physicians and staff view the behavioral health clinician and psychotherapy as valuable and integral to patient care. This attitude can exert subtle influences on the interest and willingness of patients to initiate and maintain behavioral health care. Related to this is the extent to which the primary care physicians and other staff explicitly reinforce the work and suggestions of the behavioral health clinician. In settings where the physicians and other staff follow-up on and reinforce the strategies introduced by the behavioral health clinician, the clinician can continue to exert influence on the patient indirectly, which is particularly important considering that the modal number psychotherapy sessions in any setting is only one (Gibbons et al. 2012).

Depression-Specific Versus Cross-Diagnostic Behavioral Health Management Programs in Primary Care Depression is the most prominent but only one of many behavioral health conditions and concerns in primary care. Others include anxiety disorders, substance abuse, chronic pain, patients with medically unexplained symptoms, and those who smoke or engage in other unhealthy behaviors (e.g., poor eating, sedentary lifestyle). Relative to other behavioral health issues, depression has received the most attention and has a more established empirical base supporting specific management programs. While depression management approaches can inform the development of separate management strategies for each behavioral health issue, having separate programs would be unfeasible, unwieldy, and unnecessarily expensive. The alternative is to develop a program within primary care to identify and address a variety of behavioral health problems, including depression. The behavioral health management program can include many components of care management, including screening for identification of specific concerns, triage to appropriate level of care (including psychotherapy in primary care), and ongoing monitoring of individual patient progress as well as program effectiveness. A population health approach can be used to impact the overall behavioral health of patients in the practice.

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Chapter 9
Treating Obesity in a Primary Care

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Integrating psychological services into the primary health-care setting has become increasingly more common and arguably necessary for holistic patient care. McDaniel and deGruy (2014) reported that the USA is 37th in the world with regard to the most commonly measured health outcomes; this is reportedly behind all other developed nations. In addition to inefficient medical care, the USA has an ever-increasing health-care cost that is likely to reach unsustainable rates in the future (McDaniel and deGruy 2014). Sentence should say "The American Psychological Association (APA) recently published a special issue of the American Psychologist that addressed the need, benefits, and implications of behavioral health care within primary care settings (APA 2014). The problem with the current health-care system is not addressing medical and mental health that it is acute or episodic. However, problems arise when chronic conditions, often influenced by comorbid conditions, require extensive communication and partnership between health-care and behavioral health-care professionals, which is not a common practice within the current biomedical model of health care (Fisher and Dickinson 2014). The need to move from the current biomedical model of care to a more comprehensive integrated care model such as the patient-centered medical home (PCMH) is well established in the literature (Fisher and Dickinson 2014; James and Folen 2005; James and Linton 2009; McDaniel and deGruy 2014; McDaniel et al. 2014; O'Donohue et al. 2005; Peek et al. 2014).

The definition of primary care that the authors of this piece find most comprehensive and applicable is offered by the Institute of Medicine (1994):

> Primary care is the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community. (p. 15)

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care,*
DOI 10.1007/978-3-319-19036-5_9

This definition comprehensively covers the current problems of health care in the USA and offers solutions to the distant, often impersonable, health-care treatment individuals are experiencing in primary care settings. Additionally, this definition supports the biopsychosocial model of primary care, which considers the complex issues many chronic patients present to clinics with, and the behavioral and social factors contributing to, or exacerbating, the chronic condition (McDaniel et al. 2014). The biopsychosocial model is comprehensive and addresses problems that the current model of health care falls short of, namely, it addresses acute, episodic conditions which are primarily treated within the current model, while also addressing chronic and preventative health-care needs (McDaniel and deGruy 2014). Support for the PCMH is explained by McDaniel and deGruy (2014) as providing improved patient satisfaction with care, greater adherence to medical guidelines for conditions, decreased medical errors, duplicative testing, medications prescribed, and decreased use of emergency department resources, all culminating into reduced overall cost to the primary care system.

While many ways in which implementing a PCMH model is beyond the scope of this chapter, a short review of how psychologists can improve adherence to treatment, communication between medical providers, and preventative health care is warranted. Fisher and Dickinson (2014) stated that there are five general areas of psychologists' roles in a PCMH which include: direct patient care, patient screening, assessment and monitoring, programs for special patients, clinical consultation, and practice organization and functioning. Psychologists are well prepared to address the psychological, behavioral, and social concerns chronic patients have while undergoing primary care treatment that may otherwise go unnoticed or poorly addressed leading to decreased satisfaction of care and treatment adherence (James and Linton 2009). Fisher and Dickinson (2014) also stated that preventative services can be implemented by psychologists or other behavioral health-care professionals to aid in addressing the chronicity of patients returning to primary care settings, thereby reducing overall medical costs. The downfall of many integrated health-care systems is the ability of the primary health team to utilize and partner with behavioral health professionals (McDaniel and deGruy 2014). Therefore, it is essential that primary care teams willingly incorporate psychologists into all staff meetings and patient treatment considerations as well as consultative and preventative services, in order to fully utilize the psychologists' impact on the primary care system.

While there are many ways to integrate psychological services into the primary care setting, working as a cohesive team requires much more than having services located in the same building (Rowen and Runyan 2005). Rowen and Runyan (2005) propose a model of integrated psychological care that will allow clinicians to better recognize psychological concerns by using targeted or universal screening, focused assessment, brief interventions, and follow-up care. In this type of model, the clinician is utilizing briefer appointments than the traditional 50-min session and is targeting a specific problem.

Psychological interventions in the primary care setting have been shown to be an efficacious addition to other interventions patients receive in that setting (James and

O'Donohue 2009). When comparing psychological interventions added to general practices at health-care clinics to the baseline general practices, there has been an increase in social functioning, a decrease in admissions, number of contacts to the health clinic, as well as in outside services being sought (Balestrieri et al. 1988). In a study looking at psychological treatment within the primary care setting, patients not only reported lower levels of distress after the interventions but also maintained a reduction of distress 30 months after the intervention took place (Davis et al. 2008). Davis et al. (2008) found that there was a significant decrease in consultation time and a decrease in mean office visits, in addition to the decreased distress at follow-up.

In addition to individual psychological interventions within the primary care setting, interventions can be offered in a group setting, and these group interventions have been found to be efficacious as well. Researchers have found that patients in the group setting reported a significant reduction not only in the symptoms of distress but also the number of patients experiencing distress in general (Davis et al. 2011). These group interventions were found to have similar levels of impact on distress as the individual interventions.

Obesity

Over the past few decades, the prevalence of obesity has increased substantially (Ebbeling et al. 2002). Considering that roughly one third of adults in the USA are considered obese, the issue of obesity is becoming an important health concern (Appel et al. 2011). This issue is now considered a worldwide phenomenon (Haslam and James 2005). Obesity has been connected with health concerns such as high blood pressure, type II diabetes, cardiovascular disease, stroke, hypertension, and several types of cancers (Flegal et al. 2005; Haslam and James 2005). Obesity has surpassed smoking as the leading preventable cause of premature death and illness in the USA (Mokdad et al. 2000) and is among the leading causes of disability status (Trogdon et al. 2008). It has also been found that about 90% of individuals with type II diabetes have a body mass index (BMI) in the overweight category (Stevens et al. 2001).

In addition to the considerable adverse physical health consequences, obesity has also been linked with psychological disorders such as depression or anxiety, particularly in women (Haslam and James 2005). There are several factors that have been found to contribute to weight gain including physical inactivity, increases in daily caloric intake, and medications with weight gain as a side effect (Haslam and James 2005). Considering the vast impact obesity has on individuals and society, there has been a push in the medical and psychological communities to understand causes and treatments. It has been shown that a decrease in weight can reduce the health risks to the individual (Haslam and James 2005) even if the loss is modest (Blackburn 1999).

Traditional Treatments

Behavioral interventions to treat obesity such as increasing physical activity and changing diet have shown limited success over long term (Hardcastle and Haggar 2011; Pirozzo et al. 2003). Individuals who have been successful in weight loss studies have indicated that understanding the knowledge and facts about causes and effects of obesity was not the cause of change for them (Hardcastle and Haggar 2011). In fact, most people report that they understand the causes of obesity but obesity continues to remain an increasingly common struggle. Which then begs the question: How can psychologists in primary care settings effect change in their patient's weight loss?

As psychological interventions in primary care settings increase, and the awareness around the necessary change in the growing obesity trend, there has been more research conducted regarding how to best use efficacious interventions within the primary care settings. There are many targeted intervention programs in use based around education focused on diet and exercise (Jakicic 2003). When comparing psychological interventions to general medical practice interventions, psychological interventions have been found to be more effective. It has been shown that psychological interventions in addition to medical interventions have a higher impact on weight loss than medical interventions alone (Appel et al. 2011). Appel et al. (2011) looked at behavioral interventions with both remote interventions and in-person interventions, where both groups had more weight loss than the medical intervention group at the 24-month follow-up. This indicates that the psychological interventions imparted can be effective, even when done over the telephone, by e-mail, or over the Internet.

Hardcastle and Haggar (2011) conducted a follow-up survey of participants from a weight loss intervention program in primary care setting; both those individuals who had lost weight and maintained the loss, and the individuals who lost weight but did not maintain the loss 18 months after the intervention period. They found that both those who had maintained the loss as well as those who had not reported that continued monitoring and support was beneficial or felt that it would have been beneficial to them. The participants reported that they preferred a more collaborative, client-centered support to a prescriptive, informational, or educational support. Participants also reported that they benefited from being helped to fit the advice into their lives, not just being given straight advice or education. Participants who were able to take the support and education from the clinicians and integrate it into an internal motivation were more able to maintain weight loss, while those participants who perceived the support to be entirely external without internalizing the motivation were not. Among the participants who maintained the weight loss, they reported that they interpreted this support as supporting their need for autonomy, rather than the support being restrictive or controlling. Those participants who perceived the support as controlling or pressuring were more likely to gain the weight back.

In their study, Hardcastle and Haggar (2011) used motivational interviewing techniques to help the participants. Motivational interviewing has been found highly effective and has been recommended by the American Heart Association to help combat obesity in the primary care setting (Hardcastle et al. 2013). Motivational interviewing is a technique used in psychology that is largely atheoretical. It has been described as more of a “flavor” or “style” of interacting with patients than a true theoretical orientation. Structure and social support are integral to motivational techniques, in addition to understanding, relatedness, and empathy (Hardcastle and Haggar 2011). Motivational interviewing aids patients in building their sense of autonomy by encouraging the patient’s personal motives while helping them to integrate the concepts (Hardcastle et al. 2013). In using motivational interviewing within the primary care setting, clinicians can help patients build a sense of self-efficacy and autonomy that have been suggested as components in maintaining weight loss. Use of motivation interviewing techniques was also shown to help decrease caloric intake and BMI, while increasing patient’s physical activity (Hardcastle et al. 2013).

While gains are being made in the short term, clinicians still struggle to find solutions to help patients maintain long-term weight loss. Patients have reported that once the interventions are over, they find it easy to fall back into old habits (Hardcastle and Haggar 2011) and have cited a lack of social support in their continued efforts to maintain their losses (Byrne et al. 2003). Hardcastle et al. (2013) found that while the motivational interviewing group still showed weight loss maintenance at the 6-month follow-up, the effects were gone by the 12-month follow-up. So while the motivational interviewing interventions are showing effectiveness, there are still issues at play that contribute to a lack of maintaining losses.

Innovative Primary Care Obesity Treatment

Several researchers (James and Linton 2009; James et al. 1999; James and Folen 1999; James et al. 1998; James and O’Donohue 2009; Earles et al. 2007; Earles et al. 2001) have presented innovative treatment strategies to deliver cutting-edge services in the primary care setting or in collaboration with the family medicine department. For example, James et al. (1999) developed a comprehensive treatment program to treat obesity in primary care that was multidisciplinary (nurses, primary care providers, exercise specialists, dietitians, psychologists, endocrinologists and chaplains). Patients were admitted to a 3-week day treatment program and were instructed on nutrition, healthy coping strategies, nutrition and well-balanced meal planning, low-intensity exercise, relapse prevention, and family dynamics related to weight management. Upon completion of the program, all patients were placed in a group-based follow-up program that met weekly (for 30–35 min) for a year. The findings suggested a 10–15 % weight loss plus clinically significant decreases in cholesterol and blood pressure.

Given the large catchment area for their Pacific hospital region (it spans 51 % of the earth’s surface) innovative telehealth obesity treatment strategies were applied by Earles et al. 2001 and others (Folen et al. 2005; James and Folen 1999). These researchers, with the assistance of technology, incorporated their 3-week obesity treatment program curriculum onto interactive web pages, video teleconferences that is now referred to as “Skyping” and CD-ROMS. With aid of these telehealth applications, patients in Japan, South Korea, and the continental USA could either individually participate in the treatment program or utilize the video teleconferencing for the group follow-up.

Primary care and behavioral health staff at each hospital location in the remote areas such as South Korea or Japan were trained to use the technology and could log in the weight, caloric intake, medical laboratories such as cholesterol, blood pressure, fasting glucose, and daily exercise and the daily food record for each patient was recorder on interactive web pages. Amazingly, the staff found that the study participants were able to successfully manage their weight and medical laboratories from as far away as Japan and South Korea even though the program was located in Honolulu. Amazingly, the authors (James et al. 1998) even found that minority men, not only those enrolled in this program but also minority patients who participated using web pages and video teleconferencing, maintained a 10 % weight loss at 12 months of follow-up.

Some Critical Findings to Maintaining Successful Weight loss

One can abstract several key findings that primary care and behavioral health obesity treatment programs should include and integrate into their programs:

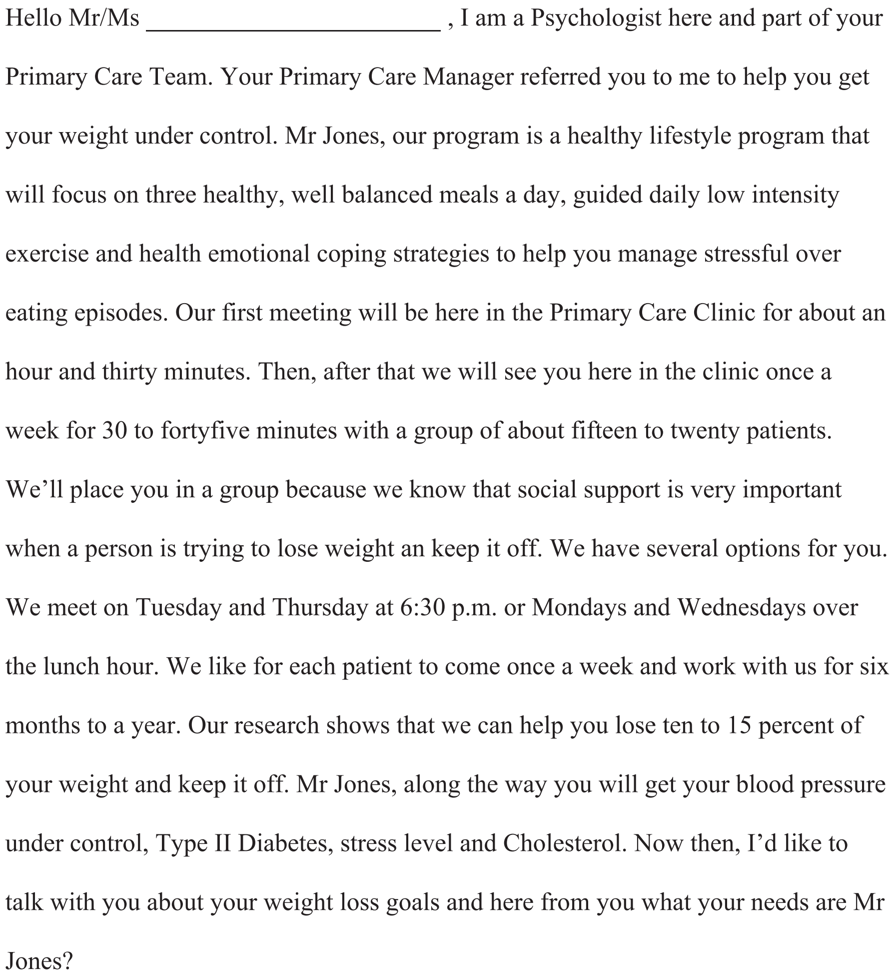
1. *Do daily, low intensity exercise:* The authors found that most of these patients struggled with acquiring the discipline to exercise 3 days a week at a set time. Rather, the researchers concluded that daily low-intensity exercise was much more realistic and efficacious.
2. *Have a support mechanism*: The participants who returned each week for follow-up had more successful results. The type of follow-up did not increase the outcome. In other words, patients who used video teleconferencing or interactive web pages did equally as well as those who presented at the clinic each week.
3. *Partner with primary care clinics:* Because of the stigma associated with mental health clinics, patients tend to present for follow-up more often if the obesity treatment programs are located in the primary care clinic.
4. *Use technology to increase access and follow-up:* Several studies cited above documented how the use of technology can expand services, increase follow-up which will lead to improved weight loss outcomes. For example, many patients may dislike having to maintain a hard copy food record of everything they eat and drink. Using online food record applications increase compliance.
5. *Build in the family:* It is of critical importance that the family is included in the weight loss program. In particular, whenever the children of the obese patient could be included in the daily exercise, weight loss goals, and meal planning the higher the outcome.

6. *Design the intervention with diversity and culture in mind:* The innovative programs discussed above were created and offered in Hawaii, Japan, and South Korea with impressive results. Unlike most obesity treatment programs in the continental USA, the designers of these programs develop culture-specific treatment strategies that also involved the family members of each patient. Different cultures experience and see size and weight in very different ways. Thus, it is imperative to build these culture differences into the program. Other examples are to include community elders, seek the assistance of dietitians who can prepare culturally specific means and collaborate with behavioral health providers of different cultures to capture the richness of the patient's culture into your interventions.
7. *Develop small goals:* All too often obese patients will have goals that are unrealistic, unhealthy, or unreachable for him or her. Achieving small weight loss of 2 pounds a month, although not significant at the beginning, will be clinically significant 10 months later and equal a 20-pound weight loss.
8. *Target mood as well as weight:* The researchers found that depression can often be the mediating variable in weight management success or failure. Thus, train the primary care providers to recognize symptoms of depression and other emotional problems in the patients who struggle with obesity. Suggest that quick screening depression test or surveys be included in the follow-up appointments to early identify depression in obese patients.
9. *Three well-balanced meals each day:* There are many fad diets on the market today and the scientific data to support these diets are lacking. Encourage the primary care team members to partner with the registered dietitians and recommend to patients three, well-balanced meals a day.

Figure 9.1 provides an example of the initial orientation and intake session with a patient interested in an obesity treatment program in primary care. Table 9.1 illustrates for the reader topics that are discussed in each session of the group-based model.

Examples of Treating Obesity in Primary Care

Case 1 Moses was a 30-year old, married, professional male with two young children. He was 5 ft. 10 in. and weighed 284 pounds. His total cholesterol was 464 with a blood pressure of 160/100 which were both dangerously elevated. Moses was a mixture of native Hawaiian and Japanese American. Moses believed that if he just lifted more weights, he could lose all of the weight he needed to lose while ingesting large amounts of over-the-counter (OTC) diet pills. Needless to say, Moses' efforts were very unsuccessful. Finally, he realized that he needed professional assistance and sound treatment from his primary care provider. Fortunately for Moses, there was a multidisciplinary healthy lifestyle program in the primary care department of his hospital. Moses was evaluated by the psychologist who directed the program and determined to be appropriate for the program. After having a completed



Hello Mr/Ms ________________________ , I am a Psychologist here and part of your Primary Care Team. Your Primary Care Manager referred you to me to help you get your weight under control. Mr Jones, our program is a healthy lifestyle program that will focus on three healthy, well balanced meals a day, guided daily low intensity exercise and health emotional coping strategies to help you manage stressful over eating episodes. Our first meeting will be here in the Primary Care Clinic for about an hour and thirty minutes. Then, after that we will see you here in the clinic once a week for 30 to fortyfive minutes with a group of about fifteen to twenty patients. We'll place you in a group because we know that social support is very important when a person is trying to lose weight an keep it off. We have several options for you. We meet on Tuesday and Thursday at 6:30 p.m. or Mondays and Wednesdays over the lunch hour. We like for each patient to come once a week and work with us for six months to a year. Our research shows that we can help you lose ten to 15 percent of your weight and keep it off. Mr Jones, along the way you will get your blood pressure under control, Type II Diabetes, stress level and Cholesterol. Now then, I'd like to talk with you about your weight loss goals and here from you what your needs are Mr Jones?

Fig. 9.1 Sample introduction first session

Table 9.1 Example of each session's content

Weigh in	Review food log
Review exercise results	Family issues
Review exercise concerns and challenges	Goals for next week
How are you going to reward yourself without food?	Coping with my children and food
Tips for emotional eating	Setting realistic goals
Getting support from your friends and family	Time management
How do I talk with family am friends about my news needs?	

physical conducted by his primary care manager (PCM), he was cleared for low-intensity exercise. Moses enrolled in the group-based, year-long program. He developed a healthy meal plan with the nutritionist and the exercise specialist assisted him in identifying the ideal exercises for him. All of these services and classes were taught in the PCM's clinic. After 6 weeks of weekly participation, Moses' weight, cholesterol, and blood pressure began to decrease. At the 1-year mark, Moses had lost 40 pounds and his blood pressure medication was discontinued and his medication for cholesterol was drastically decreased.

Case 2 Mary was a 48-year old, married, white female with three children who worked as a computer programmer. Mary was 5 ft 3 in. and weighed 220 pounds. She reported that she was referred on three separate occasions to weight management programs, but two of the programs were in either a psychology department or a nutrition department. When asked whether this was a problem, Mary responded that "Crazy people went to the psych department and I'm not crazy." She was then asked about the nutrition clinic and she said "I have some emotional and stress issues that I need to talk about it and my over eating … those nutrition people only wanted to count calories." Mary was referred to the primary care clinic's program, and she was very happy to discover that the program was directed by a clinical psychologist. Mary was placed in a group cohort of twenty patients, and she rarely missed a session. She openly described her depression and being "over stressed" and using food as her "medication" to manage her depression. Given that Mary was a mother of three, a spouse, and a professional woman, it was important to integrate her husband and children into the treatment program with her. Mary's PCM called her husband and asked for his as well as the children's participation and support. The PCM met with the children and Mary's husband separately and all four agreed that they wanted to "help out." Collectively, the family designed a daily meal plan for each week and developed an exercise program that they could do as a family. Mary's weight began to slowly decrease and her quality of life improved.

Case 3 Bob was 5 ft 10 in. and weighed nearly 300 pounds. He had chronic back and knee pain coupled with high blood pressure. Bob was not interested in being placed in a group-based program. Bob felt that he was the "shy type" and requested to use telehealth technology in order to track his blood pressure, weight, food record, and interact with the group. Bob was placed in an evening group and each week he logged onto a secure web server to participate from his home with the aid of "Skype." He recorded all of his data each day and actively participated in each group session. Bob's weight and blood pressure declined and he achieved a 35-pound weight loss.

Case 4 Susie was a 33-year old, single African American female who was very worried about her health because she was approximately 75 pounds overweight. Yet, she worried that she would lose her boyfriend because "he liked big women" and perceived Susie as very attractive. Reluctantly, Susie enrolled in the primary-care-based weight loss program. When her psychologist and PCM learned of her concerns, her psychologist and PCM requested to meet with Susie and her significant other. Collectively, they developed a plan and ideal target weight that Susie was comfortable with and a weight that she and her PCM believed to be in the healthy range. Susie and her partner attend a group program that included spouses and partners. Her boyfriend attended every session and exercised daily with her. Additionally, Susie met with the nutritionist to create healthy "soul food menus" for her and the partner. Susie liked the opportunity to track and load all of her data such as weight, caloric intake, blood pressure, etc., on the interactive web pages. She lost 25 pounds and completed a half marathon.

Case 5 Jimmy was a 63-year-old, obese (5′9″, 285 pounds), married white male who was a type II diabetic and a recovering alcoholic. Jimmy tried unsuccessfully for two decades to control his weight, cholesterol, and glucose. He was both angry and struggled with cyclical depression. He agreed to enter treatment and the group-based program was located in the primary care clinic. Moreover, to manage his untreated and undiagnosed dysthymic disorder, the psychologist placed Jimmy in a weight loss group that was designed for depressed patients who were overweight. It was a cognitive-behavior therapy (CBT) model to treat depression with comorbid obesity. Jimmy excelled in this program and lost ten percent of his weight.

Conclusion

This chapter has outlined the PCMH model in the primary care settings with the intention of encouraging primary care teams and medical health organizations to initiate innovative obesity treatment programs and initiatives to incorporate behavioral health-care professionals into primary care teams. Primary care is defined by the Institute of Medicine (2004) and consists of comprehensive, coordinated, accessible, and continuous intervention for chronic conditions. To address the complex behavioral and social factors influencing and colluding treatment as usual in the biomedical model, an integrated primary care team consisting of at least one behavioral health-care professional is proposed to provide a more comprehensive model of primary care that closely aligns with the biopsychosocial model of primary care. Five general areas of emerging roles of psychologists in primary care settings were discussed from the research provided by Fisher and Dickinson (2014). Of note, for the behavioral health-care professional to be beneficial and cost-effective to the primary care team and overseeing organization, full integration of this behavioral health profession is required. The downfall of many organizational attempts at more comprehensive health care is the breakdown of communication between professionals regarding the physical and mental health of chronic patients. This breakdown often causes errors in medical treatments and leads to increased health-care cost. To insure full utilization of behavioral health-care professionals, it is proposed that these professionals become a member of the daily functioning primary care teams. Previous research has shown that increased provider and patient satisfaction, increased patient outcomes, and reduced health-care costs are associated with integrating behavioral health-care providers into primary care settings (Rowan and

Runyan 2005). Activities involving assessing, screening, and monitoring patients in addition to direct patient care are supplemented by behavioral health-care professionals when fully integrated into the primary care team. Furthermore, psychologists can increase patient adherence to treatment programs and decrease overall medical cost by introducing preventative programs for chronic and/or high utilizers of medical care. Research has shown that implementing a psychologist into primary care settings decreases the amount of distress immediately experienced by the patient as well as a lasting decrease of distress at a 30-month follow-up (Davis et al. 2008).

There is a paucity of high-quality outcome data on treating obesity in the primary care home. Nonetheless, we can extract from research such as Haynos and O'Donohue (2012) review that there are many parallels between what is essential in both of these settings for obesity treatments in the adult and child settings to be successful.

Information was reviewed on the available types and modalities (individual, group, and preventative) of treatments of obesity in the primary care setting. Positive results to the medical system, providers of care, and patients were shown when behavioral health-care professionals were added to the primary care team when addressing obesity and chronic obesity. In fact, Appel et al. (2011) found that psychological and medical interventions used simultaneously have a greater impact on weight loss than medical interventions alone further supporting the notion that psychology has an efficacious role in primary care settings. The researchers also found that psychological interventions provided over the telephone, through e-mail, or over the internet could be effective, thereby increasing the possibility of patients adhering to treatment guidelines due to increased convenience of communication and dispersion of psychological services. The assumption that increased convenience of provision of psychological services increases treatment adherence is supported by research conducted by Hardcastle and Hagger (2011).

Additional research is needed to evaluate the use of psychological services in conjunction with treatment as usual for chronic obese patients. For example, what behavioral interventions are necessary for continued weight reduction and what medical treatments may be contributing the weight gain after successful psychotherapeutic interventions? Continued exploration of preventative programs, consultation and psychoeducation of primary care teams, and primary care organization and functioning are integral in finding a sustainable integrative behavioral mental health and primary care team that is efficacious in treatment of chronically obese patients.

The Next Frontier for Treating Obesity in Primary Care: eHealth Applications

There are many innovative applications to treat obesity in primary care. Many of these programs involve eHealth applications such as interactive web pages, Twitter, Facebook and video teleconferencing. The website http://www.goodhousekeeping.

com/health/diet-plans/best-diet-websites offers a detailed review of some of the best online programs to treat weight loss. Many patients now under 30 prefer and expect online treatment options, and it would serve a primary care clinic well to invest in eHealth applications to meet the increasing demand of the obesity epidemic and expand their services to rural areas or patients who, for a variety of reasons, cannot (or prefer not to) receive services during the traditional, 9 a.m.–5 p.m., Monday to Friday medical office hours.

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Chapter 10
Primary Health–Behavioral Health Integration for the Population of Individuals with Serious Mental Illness

K. Minkoff and J. Parks

Overview

Within the larger framework of addressing primary health and behavioral health (BH) integration, this chapter focuses on the provision of integrated health and BH (mental health and/or substance abuse and/or cognitive disabilities) services for individuals who are categorized as having "serious" mental illness (SMI), including (but not limited to) the subset of individuals labeled as serious and persistent mental illness (SPMI) or (in some states) serious and disabling mental illness (SDMI). This chapter focuses largely on adults, but when relevant, we comment as well on the provision of integrated health and BH services to children with "serious emotional disturbances (SED)" and their families.

The first section of the chapter serves as a "statement of the problem"—the definition of SMI and SPMI; the particular issues and challenges for individuals with SMI vis-a-vis their own health (including other co-occurring issues and conditions), their health costs and outcomes, and their ability to access and receive continuing high-quality health care (along with BH care); and the challenges that providers and systems face in trying to meet their needs, prolong their lives, and help them achieve their goals.

The second section of the chapter is a summary of "what works"—what we know about how to help individuals with SMI or SPMI make progress in addressing their health *and* BH needs in terms of core clinical practices and approaches that contribute to success.

The third section of the chapter discusses how to implement what works in a variety of settings, including, but not limited to, "person-centered medical homes" (PCMH) as currently defined. This includes attention to all of the service settings

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care*,
DOI 10.1007/978-3-319-19036-5_10

in which individuals with SMI and health conditions may present—BH settings (mental health, MH; substance abuse, SA; and brain injury), primary health settings, homeless shelters, jails, and the like. The focus is on how any program or organization can apply "what works" from the previous section to improve primary health–behavioral health integration (PHBHI) service delivery for individuals with SMI. This section also comments on various tools that have been developed for advancing PHBHI, including the Organizational Assessment Toolkit for Integration (OATI), codeveloped by one of the authors (KM) with the national Technical Assistance (TA) Center for Substance Abuse and Mental Health Services Administration/Health Resources and Services Administration (SAMHSA/HRSA PHBHI) grantees (the Center for Integrated Health Solutions) and MTM Associates, Inc. (David Lloyd).

The final section illustrates some successful system strategies for advancing primary health/BH integrated service delivery, integrated health home development in BH settings, and demonstration of cost-effectiveness of PHBHI for high-need populations in one pioneering state (Missouri), where the second author of this chapter (JP; previously the Department of Mental Health Medical Director) has just recently become the state's Medicaid director.

Our intent is that all of this together will help the reader have an organized practical understanding not only about the challenges of integrated care for people with SMI but also acquire some strategies to advance the delivery of integrated care (and the outcomes for people who desperately need help) whether applying those strategies at the clinical practice level, the program or organization level, or the large system level.

Part I: Statement of the Problem

Definitions of SMI and SPMI

All states are required to define the population of SMI and SPMI by federal block grant requirement. Although the definitions vary somewhat from state to state, SMI is generally defined by particular MH diagnoses that are "more serious or severe," such as schizophrenia, bipolar disorder, and major depression. SPMI reflects a subset of the population of SMI, which, in addition to having more serious diagnoses, also have persistence (or "chronicity") of diagnosis and functional impairment related to the diagnosis. An estimated 26.2 % of Americans aged 18 and older—about one in four adults—suffer from a diagnosable mental disorder in a given year (Kessler et al. 2005). Even though mental disorders are widespread in the population, the main burden of illness is concentrated in a much smaller proportion—about 6 %, or 1 in 17—who suffer from a serious mental illness. In addition, mental disorders are the leading cause of disability in the USA and Canada (WHO 2004). Many people suffer from more than one mental disorder at a given time. Nearly half (45 %) of those with any mental disorder meet criteria for two or more disorders, with severity strongly related to comorbidity. Note that these definitions reflect historical approaches to connecting diagnosis with severity. In the past decade, as we have learned more about mental illness and its treatment/recovery process, we have learned that there are between half and two thirds of people with serious mental illness who achieve substantial recovery (Harding et al. 1989, 1987, 1992; though still requiring continued care) and others with other "nonserious" diagnoses (such as post-traumatic stress disorder, PTSD; obsessive–compulsive disorder, OCD; attention deficit/hyperactivity disorder, ADHD; borderline personality disorder) who are severely impacted. In this chapter, we approach the discussion based on the needs of the population, rather than on rigid diagnostic definitions.

Comorbidity, Health Outcomes, and Costs

Comorbidity During the past 10–15 years, there has been a steady accumulation of data that indicate that individuals with more serious mental health conditions are at more risk for comorbidities, have higher rates of morbidity and mortality, (Colton and Manderscheid 2006; Parks et al. 2006), and higher costs and poorer outcomes than individuals with either no mental illness or less serious mental illnesses. First of all, individuals with serious mental illness have a high lifetime prevalence of co-occurring substance use disorder (SUD), which is additive to risk of poor health. Further, there is a higher prevalence of nicotine dependence in populations with SMI and SPMI than in the general population. Smoking prevalence is among the highest for people with mental illness. About 75 % of individuals with serious mental illness are tobacco dependent, compared to approximately 22 % of the general population (American Psychiatric Association; APA Substance Abuse Treatment Guidelines, 2006; Grant et al. 2004). In fact, about 44 % of all the cigarettes consumed in the USA are by individuals with a mental illness and/or SUD (Lasser et al. 2000).

Approximately, 50–60 % of people with major depression are smokers. Of people with anxiety disorder, 45–60 % smoke. A total of 55–70 % of those with bipolar disorder are smokers and 65–85 % of people with schizophrenia (Parks and Jewell 2006).

Smoking prevalence is also high among those with addiction disorders. Approximately, 60–95 % of clients in drug abuse treatment programs smoke (Bernstein and Stoduto 1999; Patten et al. 1999; Richter et al. 2004).

Among addiction patients, smoking prevalence is high: alcoholic inpatients (85 %), alcoholic outpatients (71–93 %), former problem drinkers (41 %), cocaine outpatients (75 %), cocaine inpatients (85–90 %), and methadone maintained (95 %) (Parks and Jewell 2006).

Those with psychiatric disorders tend to smoke more cigarettes per day and are able to obtain more nicotine from smoking the same number of cigarettes than the general population (APA 2006; Williams et al. 2007). Tobacco dependence is a pediatric disease in the sense that most individuals start smoking before the age of 18; however, about 20 % of smokers with schizophrenia began smoking after that age and many began smoking in mental health settings, receiving cigarettes for good behavior (DeLeon et al. in press), and nicotine dependence may contribute to further poor health outcomes (Parks and Jewell 2006; Gelenberg et al. 2007). Second, there are ample data that indicate that individuals with SMI or SPMI are at higher risk for comorbid health conditions, some of which risk is connected directly to comorbid substance use or nicotine use, and some of which risk is independent. For example, individuals with SMI are at higher risk for developing infectious diseases such as human immunodeficiency virus (HIV; Lee et al. 2000) and hepatitis C (Himelhoch et al. 2009). The risk is higher for those who have co-occurring SUDs, but is still significantly higher than the general population for those without SUD. In addition, there is higher risk for obesity (Parks and Pollack 2005; Parks & Radke 2008), metabolic syndrome, diabetes, hypertension, heart disease, and respiratory problems, again through combined effect of unhealthy or sedentary lifestyles (also related potentially to poverty associated with survival on disability incomes), increased stress, adverse metabolic effects of psychotropic medications, and persistent smoking. Further, data from the Adverse Childhood Experiences survey (Felitti et al. 1998) have indicated that trauma is directly and independently connected to higher prevalence of mental health disorders, SUDs, and chronic health conditions. Consequently, data indicating the very high prevalence of trauma in the histories of individuals who have developed serious mental illness may also provide support for the high prevalence of co-occurring health conditions in this population.

Based on all of the above, it is fair to say that co-occurring health conditions are an expectation, not an exception, in the population of individuals with serious mental illness.

Health outcomes At the same time, as there has been increasing recognition of high prevalence of comorbid health conditions, there has also been dramatic documentation of earlier death rates among seriously mentally ill populations. The most common data cited are that individuals with serious mental illness die between 25 and 30 years earlier, on average, than their nonseriously mentally ill peers Colton et al. 2006; Daumit et al. 2010). Comorbid SUD further contributes to higher mortality. Clearly, these poor outcomes related not only to the simple presence of comorbid conditions but also to lack of access to and participation in receiving effective health care for these conditions (which is discussed further below). However, these dramatic data provide a clarion call for the importance of addressing this issue proactively and directly.

As a nation, we have come to recognize that it is not acceptable that individuals are increasingly assisted to make progress in recovery from serious mental illness and SUDs, only to die because their comorbid health needs are not properly addressed.

Health costs The population of individuals with serious mental illness is overrepresented among the highest-cost utilizers of health dollars in two different ways. First, if we analyze health (not BH) costs for the population of individuals with serious mental illness, their per capita costs are dramatically higher than those of their non-seriously mentally ill peers (Melek et al. 2014). This is due to both the prevalence of comorbidity and the greater likelihood of receiving health services in emergency rooms (ERs) and hospital settings rather than in less costly and more effective primary care settings. Second, if we analyze high health utilizers in a general health population (particularly Medicaid), then we find comorbid serious mental illness is overrepresented in the high health utilizer population, with some studies reporting that 75–80 % of individuals who are Medicaid "high utilizers" have a co-occurring SMI, most commonly depression (because it is the serious mental illness with the highest population prevalence; Ford et al. 2004; Bartels et al. 2003). Further, individuals with the most serious mental illnesses are more likely to experience adverse social conditions (e.g., homelessness) that also negatively impact health outcomes and costs.

> Consequently, it is becoming abundantly clear that more effectively addressing co-occurring health and BH issues in the SMI population will not only save lives but will also save money as well.

Barriers and challenges (Parks et al. 2006) Addressing and improving the issues identified above has proven to be challenging. There are several major system features that must be addressed in order to make significant progress.

No locus of accountability for health *and* BH costs and outcomes for individuals with serious mental illness. Current system design generally has separate administrative structures, at both the state and local level, for planning, evaluating, and improving health services and BH services for individuals with serious mental illnesses. In many state and local systems, substance abuse service accountability and mental health services accountability are also disconnected. Further, in most states, global Medicaid budgets, as well as Medicaid health maintenance organization (HMO) intermediary contracts, which are substantially responsible for funding health services for individuals with more serious mental health conditions and associated disabilities, may not be positioned to have the flexibility to manage outcomes, risk, and costs related to overlapping BH needs, and vice versa. As is illustrated later in this chapter, when a state has the capacity to bring this oversight together and manage performance, cost, and outcomes in an "integrated" manner, significant progress can occur.

Difficulties of access for individuals with SMI in primary health settings Individuals with SMI (particularly those who have co-occurring substance use conditions) are not usually viewed as priority patients to be welcomed into primary care settings, even those which concentrate on serving public sector populations (such as federally qualified health centers, FQHCs; rural health centers; or community health centers). Individuals with significant psychiatric disabilities and/or those whose illness results in challenging symptoms or behaviors (e.g., people with persistent psychotic conditions) are often experienced as "misfits" in primary health settings, because of exhibiting difficult behavior in the waiting room or in interaction with medical personnel. For this reason, primary health settings may not make the extra effort to facilitate access and engagement for the individuals with more serious combinations of health and BH conditions, which need that access the most.

Challenges for individuals with SMI to participate in their health care Even when individuals with SMI, particularly those with associated psychiatric disabilities, have access to care, they have significant challenges in participating in their care. These challenges may range from lack of attention to keeping appointments, difficulty attending to routine preventive health recommendations (e.g., colonoscopies, PAP smears), and difficulty adhering to medical recommendations. It is generally more difficult for individuals with SMI to discontinue smoking, and many such individuals are prescribed psychotropic medication that contributes to weight gain and metabolic syndrome, so that weight loss and exercise become even more challenging than they might otherwise be. Further, for those individuals who have chronic health conditions (diabetes; hypertension; chronic obstructive pulmonary disease, COPD; hepatitis C; HIV), psychiatric symptoms, and disabilities interfere with their ability to follow health and medication regimes and practice effective "chronic disease self-management." In addition, research from the Adverse Childhood Experiences Survey (ACES) data on the impact of early-life trauma on the onset of both chronic medical conditions and chronic mental illnesses indicates the likelihood that many individuals with SMI have traumatic histories that further contribute to poor outcomes, as well as creating challenges in developing trusting and successful relationships with their caregivers. Finally, individuals with SMI are at higher risk for having challenges in other domains—"the social determinants of health." They are more likely to be homeless, impoverished, incarcerated, and in "unhealthy" living environments, all of which can make attending to medical recommendations particularly challenging. Consequently, "integrated" care for people with SMI usually must integrate attention to these issues, occur in "nontraditional" health settings (e.g., health care for the homeless; jail-based clinics), and involve the development of a health "neighborhood" (Jarvis) in partnership with other human service providers, not simply a health home with medical/BH providers alone.

Lack of routine coordination and partnership between SMI BH settings and primary health providers. (Parks and Pollack 2005) Although considerable progress is being made in recent years to attend to providing better coordination and integration of services for individuals with co-occurring SMI and health conditions, there is significant evidence that in most settings there is a lot of room for improvement in routine coordination of care. In most BH settings serving individuals with SMI, it is more the exception than the rule that psychiatrists and case managers have routine communication (verbal or written) and direct information sharing with primary care providers. Similarly, most primary care providers do not have the opportunity to routinely coordinate and collaborate with the psychiatrists or BH providers serving their patients with SMI. Specific examples of lack of coordination may include one or more of the following: no routine protocol for insuring all SMI clients have a primary care provider, that they have signed a release of information, and/or that there has been direct communication between mental health prescribers and primary health providers to discuss coordination of care; lack of routine transmission of records of primary care visits to BH providers and/or lack of easy access to BH telephone consultation for the primary care provider to ask questions or to problem solve regarding a challenging shared patient (which would be more routine with other specialties).

Lack of integration of attention to managing primary health issues inside BH care for individuals with SMI As we shall discuss below, over the past 5 years, there has been steady growth of development of primary care capacity within BH settings serving individuals with SMI. The SAMHSA–HRSA PHBHI grantee program has funded nearly 100 such programs over this time period, and many more programs have been developed without such grant funding. (See SAMHSA PBHCI program, *http://www.integration.samhsa.gov/about-us/pbhci*) Some states, like Missouri (see below) have developed incentives and funding for the development of certified BH homes in mental health centers statewide (Parks 2014; Townley and Takach 2012). The movement is growing. Nonetheless, there is a long way to go. It is still considered the exception rather than the rule that individuals with SMI will have access to primary care colocated on the site where they receive BH services. Even where such services exist, they may not be "integrated"—that is, the colocated services may exist in parallel with the BH services, and the BH practitioners working with individuals with SMI (psychiatrists, nurses, therapists, rehab specialists, case managers, peer supporters) may not routinely provide integrated assistance to their clients in managing their health issues as part of their work to promote wellness and recovery. In fact, the development of "wellness- and recovery-oriented services" in BH settings serving individuals with SMI is still a work in progress across the nation.

In conclusion, while we have made progress in developing programs and services to address the challenges above, the extent of the need remains great. Consequently, there needs to be a comprehensive national (and state by state) strategy to develop and improve routine capability to provide integrated services for individuals with serious co-occurring health and BH issues, wherever and whenever they present for help.

Part II: What Works

In spite of the challenges outlined above, there is considerable hope that we can make a difference. This difference will come not just by creating some "special" PHBHI programs and/or special settings (e.g., Integrated BH Homes); the biggest "collective impact" (cf., Kania et al.) will occur when all programs and all persons providing help to individuals with SMI (with co-occurring health issues being an expectation) will take organized steps to make progress toward delivering integrated care (PHBHI). The good news is that although there is a lot still to be learned and a lot more to be done, we have accumulated enough knowledge about "what works" that we can begin to apply or implement "what works" anywhere.

In this section, we outline "what works." This is done in three sections: what works in clinical practice, what works at the program level, and what works at the system level. Much of what is described applies to all populations, not just individuals with SMI. However, because of the particular challenges associated with serving individuals who have more serious mental illnesses and disabilities, it is more important to be organized about providing "what works" with sufficient structure and intensity so that there is an impact for individuals with more severe needs. This is illustrated below.

What Works in Clinical Practice

Welcoming individuals with complex needs Proactive attention to customer service and customer-oriented interventions facilitate access to services (in any health or BH setting) for those who may need it the most but who may have a level of complexity that leads them not to fit well. This is one of the core principles of patient-centered medical home (PCMH), and it needs to be applied with particular focus for individuals with SMI. How does the FQHC make a point of welcoming and engaging the patient with schizophrenia who may have a harder time sitting in the waiting room? How does the BH center welcome the individual with severe obesity (and welcome working with her to discuss and address her obesity) who may feel embarrassed about her condition and afraid to discuss it with her treatment team?

Universal integrated screening Identification of the issues facilitates further assessment and intervention. In this regard, BH settings have learned that routine screening for high-risk health issues (e.g., hepatitis C, hemoglobin A1c, weight and girth, lipid profiles, hypertension; Parks et al. 2008) can have a significant impact on helping their clients to address those issues. Similarly, primary health settings are increasingly becoming more systematic about recognizing the high likelihood of under-recognized MH and SA issues (including SMI), and moving toward more systematic screening efforts, including stepped screening protocols. Some of the early focus has been on screening for depression (Patient Health Questionnaire—PHQ-2 or PHQ-9, or a stepped protocol with the PHQ-9 being done if the PHQ-2 is positive) or alcohol use disorders (e.g., Alcohol Use Disorders Identification Test; AUDIT).

There are a number of screening methodologies to look for any substance use in pregnant women (e.g., TWEAK), and there is expansion of interest in universal trauma screening in primary care settings (e.g., recent legislation in Vermont). The next step is for proactive identification of all BH issues and risk to be part of all primary health assessments and vice versa.

Collaboration, care coordination, and information sharing The more that PH and BH providers work together in a true collaboration with the patient at the center, the more likely the care will be successful, even if the providers are not routinely members of an integrated team. Information sharing is an important starting place, and electronic health record (EHR) platforms may facilitate that sharing. However, if the information in the record is not reviewed, and if the practitioners do not talk to each other to coordinate efforts and provide consistent messaging to the patient, electronic information sharing alone will not be productive. Further, care coordination means more than just taking people to appointments. Care coordination requires PH and BH practitioners to communicate about both sets of issues and work as partners to help the patient and family understand recommendations and participate successfully in care, in the face of significant challenges of all kinds (which—as noted above—are more likely to be present in individuals with SMI). When this coordination happens in a "person-centered" or "patient-centered" (Substance Abuse and Mental Health Services Administration 2012. Health and Human Services; HHS publication number pending 2012—Resource Guide for Person-Centered Planning) fashion, the outcomes are much more successful.

Integrated hopeful strength-based relationships and teams (e.g., wraparound services) The essential element of integrated care delivery, and the construct of an "integrated health home," lies in the capacity to develop a relationship with the individual (and often the family) by both individual providers and, ideally, by the whole service team, in which the team partners with the individual to encourage hope of recovery and wellness, and then works very concretely to help the individual be successful, building on existing strengths. The relationship is explicitly not punitive or controlling and operates with the framework that individuals with multiple challenging conditions are not "chronic relapsers" but rather are "recurrently successful."

Stage-matched interventions (e.g., motivational interviewing). The application of motivational interviewing principles and the understanding of stage-matched interventions and outcomes is critical. Individuals with multiple health and BH issues (including mental health and substance abuse) are often in different stages of change for each issue. (Minkoff and Cline 2006; Prochaska et al. 2008) Consequently, successful treatment involves joining the individual in his or her stage of change and helping to make progress. For individuals with more serious mental health conditions, being able to work slowly and concretely in providing stage-matched interventions will produce results with all types of collateral issues. For example, if a patient does not want to quit smoking, but is willing to cut down (even by one or two cigarettes a day), that would be defined as "early action," and the correct approach is to partner with the patient to be successful in having the skills and supports needed to take that small step (Hughes and Carpenter 2006; Tsoi et al. 2010),

Office-based brief interventions There is ample evidence of brief interventions in the physician's office successfully producing behavioral change. (Radke et al. 2010) One of the more well known of these interventions is encompassed within the Screening, Brief Intervention (using advice, motivational engagement, and suggestions for change), and Referral to Treatment approach (SBIRT; for those who do not respond or are more severely impaired) for SUDs. The key element is that the "integrated team" focuses with the individual on a particular health or BH issue and provides a specific, brief concrete intervention to help address it.

Chronic disease management (cognitive behavioral interventions and skill building) For individuals with multiple chronic conditions, integrated attention to specific skill building to manage the symptoms, treatments, side effects, and disabilities for *each* condition is a critical component of what is often termed "chronic disease management" in primary health, but is analogous to interventions such as illness management and recovery (Mueser et al. 2002) for individuals with serious mental illness. For individuals with serious mental illness, particularly for those who have psychiatric and cognitive disability, cognitive behavioral interventions and skill building—for both primary health and BH conditions—must be adapted, often made more concrete, with more practice, rehearsal, and repetition, in order to achieve successful progress.

Strength-based positive support (e.g., positive contingency management) (Greene and Hibbard 2011) In addition to a more structured, concrete approach to teaching disease management skills, it is helpful to also utilize best practice approaches for "positive behavioral support" or "positive contingency management" to provide structured rewards ("rounds of applause") for very small steps of progress. Individuals with serious mental illness and associated disabilities are more likely to become discouraged (as are their providers) when they have difficulty making progress, leading them to lose hope of success, and consequently to stop trying. When the "integrated team" provides consistent encouragement for small steps of progress, this "best practice" reinforcement provides structure to counteract discouragement and despair. What is most important to remember, is that the individuals who are having the hardest time are the ones who need the encouragement the most, and for even smaller steps of progress to be recognized.

Wellness coaching and peer support There are a burgeoning literature (Cook et al. 2012) and evidence base on the value of "peer support" in assisting individuals with serious mental illness on the path to recovery. Similarly, the value of health and wellness coaching and peer support in primary health conditions (whether disease specific or generic) are sufficiently well recognized that incorporation of peer support for health issues is incorporated as a component of the PCMH in National Committee for Quality Assurance (NCQA) standards (Alakeson et al. 2010). Increasingly, particularly for individuals with serious mental illness, wellness coaching and peer support are becoming integrated. For example, Wellness Recovery Action Planning (WRAP) (Swarbrick et al. 2011), developed as a peer support process for assisting individuals with BH issues, routinely incorporates attention to health and wellness. In many states (e.g., Michigan), certified peer support specialists for BH have access to achieve additional certification as peer health and wellness coaches. The recognition of the expectation of "complexity" is necessitating that the peer support "movement" becomes more "integrated" over time, and that all peer supporters, regardless of the originating issue, are attending to integrated wellness and recovery from multiple issues in the context of the person's own goals.

Engagement of families and natural supports It is always important to attend to social and environmental context in addressing individuals with both health and BH needs. However, it is particularly important to attend to the "health neighborhood" when working with individuals with serious mental illness. These individuals are more likely to be embedded in more challenging family and social situations (including the impact of poverty, substandard housing, and the social networks attached to those issues) than are individuals with less severe conditions. Further, they may be more dependent on their families, and therefore less able to be in control of their environment, and the factors that contribute to health, wellness, stress reduction, and recovery generally. Further, families may not fully appreciate the importance of certain health issues and may misinterpret significant health concerns as a feature of the individual's mental illness. Issues related to weight and smoking are particularly challenging if "change efforts" are not supported in the home environment. For these reasons, the more that the "integrated team" (which may include not only medical practitioners but also nurses, community health workers, case managers, social workers, and peer supports) engages the family or other natural supports, the more success will occur. Further, the "cost" or effort to do this outreach is generally outweighed by the "effectiveness" of improved outcomes when the whole family or social network is aligned with what the individual needs.

What Works Programmatically

Practice support: alignment of vision, mission, policies, and procedures to support integrated practice When BH programs working with individuals with SMI initiate efforts to "integrate" PH, they often begin with a special program, often grant funded, with special staff (e.g., embedding a small PH practice on-site in the BH clinic). Similarly, when PH programs begin to address co-occurring BH issues, they usually start with a focus on more straightforward issues (e.g., depression) and/or incorporate colocated BH practitioners in the PH site. Initially, the larger vision and mission may remain unchanged and not specify that "integration is everyone's business." Further, core practice protocols for PH clinics and BH programs may remain unchanged as well. The focus is on facilitating referral to a colocated parallel service on-site. However, as there is increasing recognition of the complexity of co-occurring health conditions and BH conditions for individuals with more serious mental illnesses, the need for more systematic application of the practices that work ("what works clinically") becomes essential, so that staff are not constantly "working around" their own infrastructure, which is both time consuming and inefficient. The more challenging the complexity of the individuals and families served, the more important it is for there to be leadership support to address and improve practice support (alignment of policies, procedures, paperwork, etc., to support best practice for integrated care) in the context of a leadership-supported organization-wide vision of prioritizing services for the complex customers who are most in need. The current state of the art for *how* to do this is illustrated later in this chapter in the discussion of the OATI.

Welcoming, open access Both BH and PH organizations are recognizing the need (also embedded in PCMH standards) to move away from traditional appointment-driven services and complex intake and referral protocols, to facilitate more welcoming, rapid, and open access (and continuity) for individuals with the most complex needs, such as individuals with serious mental illness (Pierdon et al. 2004). For the significant segment of individuals with SMI and complex health needs who have great difficulty managing to keep regular appointments, creating team-based open access or drop-in time slots in the schedule both facilitate continuing engagement for those individuals and reduce no shows. The key is to schedule appointments for those who want appointments and keep appointments, and provide drop-in availability for those for whom appointments are a significant challenge.

Colocation and beyond As many times as it is written that: "Co-location does not mean integration," programs working to create PHBHI for individuals with serious mental illness and co-occurring serious health conditions will regularly say: "We are integrated. We have a colocated health clinic in our building OR We have hired BH practitioners to be on-site at our FQHC." Even the most recent PCMH standards (2014) do not go much further than colocation, referencing primarily that the PCMH should have BH practitioners on-site, and maintain a referral protocol for BH needs. Colocation does facilitate integration, so those organizations that bring "the other partner" on-site do facilitate access and engagement, particularly for people with greater challenges who may have difficulty with connections in multiple locations, and literally need to be provided direct and warm hand off to get connected to care. However, colocation is neither necessary nor sufficient for integration. Individuals with SMI can have an integrated PHBH experience working with a mobile BH team that forms an effective partnership with a primary health setting that is in a different location. Conversely, it is not uncommon that the PH providers in the BH setting do not routinely communicate with BH staff about shared patients, or that BH providers in an FQHC receive referrals, but they might as well be across town for all that they are "integrated" as members of the primary health team. It is important to continually address the quality of integrated practice separately and together, particularly for those individuals with SMI who will have the most difficult time participating successfully in health care.

Information sharing technology and protocols Along the same lines, information sharing has to be designed to facilitate an integrated experience for the customer. EHR implementation has played a major role in providing a common platform for

PH and BH providers to have easy shared access to each other's information, particularly with medications, laboratory and other screening tests, and patient data. However, the EHR is again neither necessary nor sufficient for integration to occur. Integrated programs have to consider how to create "integrated" consents at the point of admission, so that it is the expectation that information is shared across the team, including information regarding substance use. Further, practice protocols need to provide specific instructions for providers to review the "other" information, discuss it with the patient, and incorporate it into interventions, progress notes, and plans. Finally, it is helpful, particularly for programs working with individuals with SMI who may be more challenging, for there to be the expectation that PH and BH practitioners—including prescribers—speak to each other *directly*. This is common practice for other specialties, but is often not followed when working with the individuals who need that level of communication the most.

Integrated team development, including consultation, collaboration, and care coordination Programmatically, the literature demonstrates repeatedly the importance of investing resource allocation in team-based care, consultation, and collaborative care in order to achieve the most efficient and effective results for population health. (See the work of Unutzer et al. at Group Health in Washington.) This is truer for individuals with more complex needs for whom the organized teamwork is most important. Unfortunately, spending time meeting with a team, or providing consultation to a team, is often viewed as a "waste of time" (and non-billable time) by both administrators and practitioners. Programs developing integrated services for individuals with SMI have to address this head on by providing specific support and direction for staff to have regular team meetings (as an expectation) that include both PH and BH providers (both longer case and program planning meetings or performance improvement meetings, *and* shorter meetings like team huddles) and for time available to provide consultation (rapid phone response, "curbside") to be planned, credited, and rewarded. Finally, incorporating organized structures within the team to promote care coordination (by nurses, by case managers, by peers—all as members of the team), which is a key element of the collaborative care approach, is essential. Note that providing "care coordination" that is *not* connected to an integrated delivery team has not been demonstrated to be as effective, and, in some instances, it simply creates an additional cost layer without producing improvement in outcomes, particularly with more seriously ill individuals.

Performance improvement Performance improvement processes are core elements of integrated health and BH provision, including for individuals with SMI, and should be embedded as core features of the program culture and the routine activity of all teams and all staff, with specific attention to focus on improving outcomes for individuals with the greatest level of complexity. General performance improvement strategies for PHBHI are discussed elsewhere in this book. However, there are some considerations for more complex individuals. Early work with "hot spotting" and other programs addressing high utilizers have emphasized that performance improvement needs to focus specifically on improving experience, outcomes, and costs for individuals based on "complexity," not so much on diagnosis

(Brenner). Individuals with SMI and complex health needs fit this category. Consequently, performance improvement approaches for this population need to look at cost and outcomes for complex high utilizers, *not* just tracking depression scores and hemoglobin A1c.

Population management data and tracking A core feature of PHBHI involves collecting good population management data and having the capacity to track the population, whether through disease-specific registries (for basic monitoring) or capturing cost and utilization for more complex populations, as referenced above. For individuals with SMI, a basic step is to track how many individuals served have a primary care provider, have seen the provider, and have a chronic health condition requiring ongoing integrated attention (regardless of diagnosis). These core data in a BH setting serving the SMI provide a "baseline" for developing PHBHI capacity throughout the organization. Further, it is important to recognize that unmet or under met BH needs are a key contributor of poor *health* outcomes, including high utilizers of medical ER and inpatient services. Most of these individuals have SMI. Therefore, tracking health utilization costs across the SMI population provides valuable database for population management within any clinic, as well as providing an opportunity to demonstrate cost-effectiveness of integrated wraparound interventions targeted to that population.

Fiscal alignment Fiscal barriers are always mentioned as a key impediment to integration, particularly within the SMI population. Therefore, successful programs need to develop internal capacity to manage billing and revenue, as well as to provide direct and clear instructions about how to provide—and document—integrated services *within* each funding stream that is being billed, and attend to maximization of both revenue and collections by consideration of how to organize the billing process (Do we hire and bill directly for PH services, in the BH setting, or are we better off having the PH staff be an outreach program of an FQHC partner?). The specifics of billing and financing are addressed more generally elsewhere in this book. However, later in this chapter, we illustrate one state's approach to creating more fiscal alignment and incentives for BH providers through state policy. However, regardless of the funding source and the state rules, providers can make progress by attending to the provision of specific billing instructions for individual practitioners and teams.

Pharmacy services Some BH programs have incorporated the development of pharmacy services for their BH clientele (both PH and BH medications) as a revenue-generating business developed on-site within their physical location. This has many logistical advantages for helping individuals with serious BH challenges get their medicine, as well as providing more opportunities for monitoring medication usage. The best results occur when the pharmacists become members of the PHBH integrated team and contribute their own expertise in helping to produce better outcomes.

Workforce development Programs providing integrated PHBH services for individuals with SMI are most successful when they have an organized approach not just to "training" but to ongoing workforce development and practice improvement. This ideally applies to *all* staff, not just to those who might be in the "special program." The starting place is communicating that *all* staff will be helped to become "PHBHI competent" within their job and level of training, and that practice supports will be developed to help everyone be successful. Specific examples of core competencies may include (these are just for illustration—the full list would be extensive, related to the practice approaches listed in the previous section): helping receptionists in the FQHC know how to welcome and engage individuals who may have psychotic illnesses; helping BH case managers know how to help their clients figure out how to follow basic health recommendations; helping all members of the health team know *their* role in helping clients address their BH issues, their trauma, and other stressors, in order to participate most effectively in their health care; helping "therapists" know how to provide short consultative visits in a PH setting; and helping the psychiatrist know his or her role in managing primary health-related screening, laboratories, data, prescribing, and patient education, and so on.

Partnership development Discussions of PHBHI often begin with partnership between BH programs and PH providers. We have purposely listed partnership at the end. The reason for this is that each partner (whether a primary health provider or a BH provider for individuals with SMI) can and should be fundamentally organized to improve its own capability to provide an integrated experience to individuals served. In this context, the partnership relationship goes beyond a parallel referral relationship, or a colocated parallel service (where success is defined by each client having connection to two different agencies with two different funding streams), and enhances each partner's capacity to deliver integrated services and to function as an integrated team, so that more people get what they need in a single door (which is particularly important for people with more serious impairments). Partnership is about an interrelationship between two types of programs or organizations that is built on a shared vision of person-centered care, a shared responsibility for a particular population, and a range of partnering activities ranging from organized consultation and in reach, to collaborative care, to colocated services, to jointly staffed integrated teams for high utilizers, to creative partnerships regarding funding and revenue generation. Successful programs have policies and procedures that treat their partners as priority clients for access, engagement, consultation, and capacity building and that define specific protocols to make sure that the partnerships function at all these different levels. Further, the partners become population management performance improvement partners who may share a cohort of individuals with complex issues (e.g., SMI and chronic medical conditions) that have poor outcomes and high costs and develop a continuous quality improvement (CQI) framework in which they work together to use rapid cycle change processes over time systematically to improve results.

Part III: Making Progress

Gathering Knowledge

During the past decade, there has been a steady progress in developing various "models" of integrated services for all types of population and a corresponding accumulation of information about how programs, organizations, and systems make progress. This has included dissemination of various evidence-based collaborative care models, such as Improving Mood—Promoting Access to Collaborative Treatment (IMPACT; *http://impact-uw.org/about/implement.html*), the expansion of BH services embedded in FQHCs, the corresponding expansion of primary health centers embedded within BH organizations, increasing numbers of organizations becoming certified as PCMHs, and the emerging concept of the BH health home. Similarly, there are a variety of tools and toolkits that have emerged to measure readiness for and to guide implementation of PHBHI. Much of this work is discussed elsewhere in this book. Our purpose here is to share some information that may provide particular guidance that would apply to making progress in PHBHI specifically for individuals with SMI.

Affordable Care Act, Medicaid Waivers, and BH Home Development

The 2010 Affordable Care Act (ACA) established a "health home" option under Medicaid (Centers for Medicare and Medicaid Services 2010), the purpose of which is to improve services to enrollees with chronic conditions (including serious mental illness) by building capacity to deliver integrated person-centered care across the state delivery system. The intent is to provide a cost-effective and longitudinal "home" in which individuals and families with complex health and BH conditions can have access to a range of medical, BH, care management, and social supports. As of this writing, six states have used this option to have their state plans amended to include health homes for individuals with mental illnesses (Iowa, Missouri, New York, North Carolina, Oregon, and Rhode Island). Later, in this chapter, we provide information and early results on the impact of this initiative in Missouri, which is one of the more advanced states in terms of implementation. The health home option not only provides an enhanced 90–10 federal match for eight quarters to provide services such as screening, patient registries, and care coordination/care management, it provides access to a "per member per month" (PMPM) reimbursement structure that can be passed on to providers, that provides both support and incentives for care management, social support services, home visits, and post-hospitalization outreach. In addition to the states implementing the "health home" option, some states are using full-risk Medicaid waivers and demonstration (Delivery System Reform Incentive Payment; DSRIP) programs approved under section 1115 of the ACA to implement BH homes or health homes for individuals with SMI.

Within this framework, the concept of a “BH home” has begun to emerge. Under the ACA, Centers for Medicare and Medicaid Services (CMS) and SAMHSA have provided guidance and flexibility to adapt the key elements of a person-centered health home to the needs of individuals with SMI and to the BH settings which for many of these individuals are their “service home.” In addition to its PBHCI program described below, SAMHSA has recently released a guide to recovery in BH homes (Promoting Recovery in Health Homes, SAMHSA, 2014), designed for both consumers and providers to better understand the connections between recovery, wellness, person-centered care, and integrated PHBH service delivery. (This guide includes a flow chart, based on the Missouri BH Health Home, for how individuals with SMI “flow” through an integrated health home.) Building on the ACA, CMS has issued standards that provide flexibility for states to help BH providers to become health homes. The CMS standards challenge BH providers to organize themselves to do “what works” (as listed earlier in this chapter): customer-oriented, person-centered, and quality-driven care, access to integrated services for health and BH, including prevention and health promotion, person-centered planning, evidence-based care, care management/coordination/transition planning, chronic disease management and self-management, individual and family supports (including peer support and social services), and coordination with long-term care, all provided within a culture of customer-oriented data-driven CQI with effective use of health information technology. (The Organizational Assessment Toolkit for Integration discussed below can assist BH providers to meet this challenge, along with their PH partners.) We discuss below how Missouri has built on this guidance to create opportunities for all of its community mental health centers (CMHCs) to become certified as BH “health homes,” and to then demonstrate improvements in care and outcomes for individuals with co-occurring SMI and chronic health conditions.

SAMHSA Primary Care and BH Care Integration Grant Program and the Center for Integrated Health Solutions

In 2009, SAMHSA, in partnership with HRSA, launched the PBHCI grant program to demonstrate how to improve the physical health status of people with SMI by supporting community-based efforts to coordinate and integrate primary health care with mental health services in community BH settings. As of this writing, 96 grantees have received awards as part of this program. In order to support the grantees, and provide general TA and resource support for the field, Center for Integrated Health Solutions (CIHS) was funded by SAMHSA–HRSA to be the national TA center for PBHCI, with a specific focus on the SAMHSA–HRSA PHBHI grantees. This grant program is in its 5th year of providing multiyear grants to a variety of BH organizations or BH–PH partnerships to establish PHBHI “programs” (e.g., specialty clinics, or special colocated staff) within those organizations, and then to use the initial funding to catalyze more broad application of integrated service delivery.

Although this grant program is not specifically targeted to SMI adults (it includes children, SUDs, and so on), there is a definite emphasis on reaching and engaging the "traditional" SMI population (and other "public" populations) in integrated health delivery and in broad capacity building for this population. In part, for this reason, the CIHS contract has been awarded to the National Council of Community BH Care (NCCBH), the provider association that represents primarily public community BH organizations (CBHOs). Over the past several years, CIHS has been directly involved in supporting the grantees (and others) in expanding learning and continuous improvement related to PHBHI for individuals with SMI, and it has gathered up the knowledge described in the previous paragraph. CIHS has further established a large collection of resources and tools to help programs make progress, ranging from clinical tools to organizational improvement tools. Any individual or program wishing more information can contact CIHS through its website (*www.cihs.org*) and/or participate in the national PHBHI list serve (Pc-bh-integration@nccbh.net; http://lists101.his.com/mailman/listinfo/pc-bh-integration).

Organizational Assessment Toolkit for Integration

Out of its work with dozens of individual grantees, CIHS recognized a need for not only grantees but also all types of PH and BH providers and systems to have some ability to move beyond a particular program approach (e.g., PCMH) in order to establish broader capacity for PHBHI, particularly for populations with significant complex challenges, and to assist organizations to make progress in that direction within whatever resources were available. This need was becoming particularly pressing for grantees that were coming into the last year or two of their grant funding and wanting not only to continue their project but also to expand its reach. For this reason, in late 2011, CIHS invited two groups that had already begun to develop organizational improvement tools for PHBHI (ZiaPartners, Inc. and MTM Services, Inc., represented by the first author of this chapter, and David Lloyd, respectively) to partner with each other and with CIHS to develop a comprehensive toolkit to help any PH or BH organization (or partnership) to advance clinically and administratively toward the provision of PHBHI services to all customers within base resources. The three partners began to meet in January of 2012, and, by May, they had completed the first draft of a toolkit. This toolkit was refined over the next 12 months, and was piloted in September of 2013, and is now being made available for general usage. The toolkit has been named OATI.

OATI applies the organizational best practice of customer-oriented CQI to improving the delivery of integrated services for individuals with complex and overlapping health and BH needs. It is designed to be used by *any* type of PH or BH provider (including MH; SA; intellectual disability/developmental disability, ID/DD; brain injury, BI; inpatient/outpatient, public/private, adult/child), or partnership or collaboration of providers to advance integration in any and all programs (not just a specialized colocated site) by guiding a baseline organizational assessment which then informs specific CQI activities and rapid-cycle Plan Do Study Act (PDSA) change projects that continue and evolve over time. There are four major tools in the OATI, plus a crosswalk between the OATI and the dimensions of PCMH certification, illustrating how the OATI is aligned with PCMH certification, but goes further in guiding progress toward integration. The four tools include:

- *Partnership checklist*—guiding the engagement of potential partners
- *Executive walkthrough*—a structured approach to understanding the experience of the "customer" with co-occurring BH and health issues presenting for service
- *Administrative readiness tool*—a data-driven self-assessment of organizational, administrative, and financial infrastructure to support integrated service delivery
- *COMPASS PH–BH*—a program-level quality improvement baseline self-assessment of clinically related policies, procedures, practices, and workforce competencies that define the provision of integrated PH–BH care in any type of health or BH program.

Note that all four tools can be applied to any type of program or organization, but the COMPASS PH–BH™, because of its clinical focus on serving individuals with complex needs, will have the most direct value for organizations working to improve their overall ability to deliver integrated services to individuals with SMI.

In addition, the OATI provides guidance to rapid-cycle change and identifies examples of common measurement indicators and strategies for quality improvement in the areas of practice listed earlier in this chapter.

For information on how to obtain the OATI (which is in the public domain), contact the first author of this chapter.

Financing and Sustainability

The key to sustainability and financing of integration of primary care and BH care lies in being able to show that it will result in reduced costs and improved outcomes. Being able to show reduced costs requires access to data (usually claims data) regarding the total cost of care for the population receiving integrated care and a control population, or for a long enough period of time to show pre-integration vs post-integration costs and outcomes. Undertaking a major integration initiative without obtaining agreement from the health-care payer(s) involved to either provide access to these data or run the necessary fiscal analysis themselves makes sustainability of large-scale integration difficult to achieve. Ongoing financing of integration of primary care and BH care can be done through a wide range of different mechanisms. Feasible funding mechanisms include traditional fee-for-service, Medicaid rehab option, Medicaid home and community-based waivers (1915c), Medicaid Health Homes for Chronic Conditions Medicaid state plan option (2703), demonstration waivers (1115), primary care case management waiver (1932a), or ACA innovation waiver. All of these payment mechanisms give the payer wide discretion to define types of service and eligible providers sufficient to support any of the current integration approaches. Payers are motivated to utilize their flexibility in payment methodology definitions when there is good evidence of cost reduction or at least cost control with respect to the new services and providers authorized for reimbursement. It is probably most important to work with a payer so they have good assurance that the new services will not be billed at inappropriately high volumes and become a “runaway benefit.” Second is working with the payer on a mutually agreed method of showing whether costs and quality are actually improving or not. In general, integration initiatives that focus on the portion of all possible patients who are particularly high utilizers of health-care services are more likely to succeed in showing savings following an integration intervention than initiatives that enroll and pay additional integration service fees for all patients. It is more feasible to show savings in patient groups with unusually high spending than in average patient groups. Overall, coming to an agreement with payer(s) requires a way to control the initial volume of special integration providers and payments, availability of data regarding total health-care costs, and focusing the initiative on patients where meaningful savings are most likely to occur (the most expensive ones).

Part IV: Changing the System

As noted earlier in this chapter, individuals with SMI represent a large and diverse population in any system, a population broadly characterized by high volume, high risk, poor outcomes, and high costs. The costs include both social costs (the most dramatic being the early death rate) and health costs, including both health and BH expenditures. Consequently, addressing the needs of this population effectively needs to move from focusing on specific practices or programs, or on individual organizations, to the development of a strategy for broad system-wide change. The second author of this chapter played a leadership role in the State of Missouri over the past 5 years in accomplishing just that, primarily through application of both evolving clinical practice knowledge about how to improve health outcomes for the SMI population, coupled with the opportunities provided by the health home option in the ACA. The “Missouri story” provides helpful illustration of successful progress on a large scale that offers lessons that can be applied in other state and local systems wanting to develop a broad integrated approach to health and BH needs for individuals with SMI.

The Missouri Story

Missouri began, in 2003, to use pharmacy claims data to provide feedback to prescribers of psychiatric medication in order to both improve clinical quality of prescribing practices and contain costs without restricting access to medications. In evaluating the outcomes of the Behavioral Pharmacy Management System (BPMS; Ning et al. 2005; Parks and Surles 2004) it became clear that improving psychiatric prescribing practices led to reductions in utilization of medications for treating medical disorders and in ER visits and hospitalizations for medical disorders. The overall reduced costs from the improvements of care are actually greater for medical pharmacy and medical utilization than they were for BH pharmacy and BH services utilization.

In 2005, Missouri implemented its first "whole-person" Medical Risk Management (MRM) initiative for persons with schizophrenia. This initiative provided CMHCs with profiles of the overall medical and BH care of persons they served with schizophrenia and identified actionable care gaps.

In 2007, Missouri implemented a Chronic Care Improvement program (CCIP; Schuffman et al. 2009) utilizing both primary care practices and CMHCs. CCIP selected persons solely due to high rates of chronic medical illness but ended up selecting a substantial portion of persons with serious mental illness. This program added on-site nurse care managers to the previous care feedback and recommendation interventions. The CMHCs in most cases did not actually provide general medical care but provided care coordination and disease management "wraparound "to the primary care practices where their patients were being treated. CCIP outperformed the previous initiatives; the improvement was attributed to combining data analytics selection of patients and care gaps with dedicated on-site staff responsible for acting on that information. The CMHCs outperform the primary care practices due to having sicker and more expensive patients and to utilization of their community mental health support workers to improve general medical care.

The 3700 Project

Beginning in November 2010, based on the early development of a collaborative partnership between Department of Mental Health (DMH) and Medicaid at the state level, and results from BPMS, MRM, and CCIP, Missouri launched what became known as the "3700 Project" in November 2010. In this statewide demonstration project, Medicaid identified 3700 individuals with high medical costs (over US$ 20,000) in the previous year, which also had BH conditions. None of these individuals was already connected to the existing MH center network. Medicaid provided new funding (on a fee-for-service basis) through the DMH for outreach and engagement followed by integrated care coordination services for specific individuals in the "3700 Project" to each of the 28 CMHCs across the state. Previous funding for dedicated primary care nurse care managers allowed the MH centers to provide the newly engaged outreach clients with an "integrated primary health presence" inside their organization. A few of the centers had on-site health clinics, all utilized nurse-led care coordination teams. Overall, Disease Management (DM)3700 combined a "hotspot" strategy (selection of high-risk/high-utilizer patients) with a "person-centered medical home" strategy (an integrated team responsible for overall care). The centers were all expected to proactively contact and engage their assigned clients and then work with them to provide person-centered, wellness/recovery-oriented, integrated care coordination, transition planning across ER and hospital utilization, outreach, integrated disease management, and outcome tracking, along with other strategies (stage-based interventions, skill building, positive reinforcement, peer support, social support, family engagement) to help them make progress in the Triple Aim—improving their experience of care, their health/BH outcomes, and their costs. Note that all of these individuals had SMI, but were *not* engaged in traditional CMHC services, nor were they necessarily well matched for services designed for individuals who had been former state hospital patients. In addition, for many individuals the "need" was less about their MH diagnosis (e.g., receiving medication for depression) than to receive help managing co-occurring substance use, cognitive issues, or challenging social circumstances (traumatic family situations, homelessness, domestic violence, etc.). This process consequently supported more flexible and person- or family-centered "wraparound" methods of service delivery in order to help individuals make progress in addressing their health and wellness needs.

Approximately half of those identified for outreach were found and successfully engaged in services. After 12 months of receiving services, they had substantial reductions in ER and hospital utilization representing a cost savings of US$ 614 PMPM for a total of US$ 20 million reduced cost for the 3500 persons located and engaged in service for 12 months.

BH Home Implementation

During the ongoing implementation of the 3700 project, in October, 2011, Missouri's Medicaid State Plan Amendment authorizing implementation of CMHC health homes beginning January 1, 2012, was approved, and Missouri began to develop criteria to expand health home certification statewide. There are two types of health homes: primary care health homes (e.g., FQHCs) that were working to improve services and outcomes for the complex populations that they were already serving (including many with SMI who did not wish to engage with CMHCs but also many with other MH and SA conditions) and CMHC health homes composed of existing CMHCs that were already serving a large SMI and SPMI population, who needed improved services and outcomes for their health and wellness needs. The strategy again included "hot spotting" by enrolling only patients with over US$ 10,000 of health-care utilization costs in the year prior to implementation. With the state plan amendment came the opportunity for statewide expansion. The following information is extracted from the Executive Summary of the November 2013 Progress Report on the Missouri CMHC health-care homes (HCH), issued by DMH and MO HealthNet (Medicaid).

Background (http://dmh.mo.gov/about/chiefclinicalofficer/healthcarehome.htm)

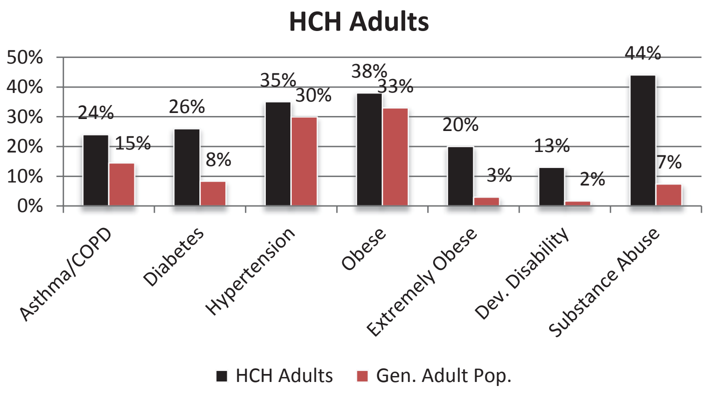
In November, 2011, 17,882 individuals who met the eligibility requirements for enrollment, who accounted for at least US$ 10,000 in Medicaid expenditures in the previous year, and who had received services from the 28 CMHCs sometime in the previous year, were identified for auto-enrollment in the HCH beginning on January 1, 2012. Each CMHC began contacting the individuals that had been auto-assigned to their health home. By June 2013, the statewide enrollment in CMHC HCH had grown to 18,408, a 16 % increase over the February 2012 enrollment.

This section summarizes the characteristics of the population served by the CMHC HCH, as well as the clinical outcomes and system impact achieved during the first 18 months of the CMHC HCH initiative (January 2012 through June 2013), with particular attention to individuals who were continuously enrolled for 1 year and for the entire 18-month period.

CMHC HCHs vary in size with three CMHC HCHs having fewer than 250 enrollees and three having more than 1000 enrollees. Six CMHC HCHs serve adults exclusively, and children and youth account for only 12 % of all enrollees statewide.

CMHCs receive PMPM reimbursement for individuals whose Medicaid eligibility is current. More than 40 % of all adults enrolled are eligible for both Medicare and Medicaid reimbursement (dual eligibility).

All adults enrolled in a CMHC HCH have a serious mental illness, and all children and youth have a serious emotional disorder. But in addition, significant percentages of them also have, or exhibit factors that put them at risk for developing, other chronic conditions. As the following graph illustrates, the percentage of adults who are enrolled in a CMHC HCH and who have asthma, COPD, diabetes, and hypertension is significantly higher than the prevalence of these chronic disorders in the general adult population. A much higher percentage of the adult CMHC HCH enrollees are obese or extremely obese, and a greater percentage of these adults also have an SUD or evidence of a developmental disability than the general adult population.

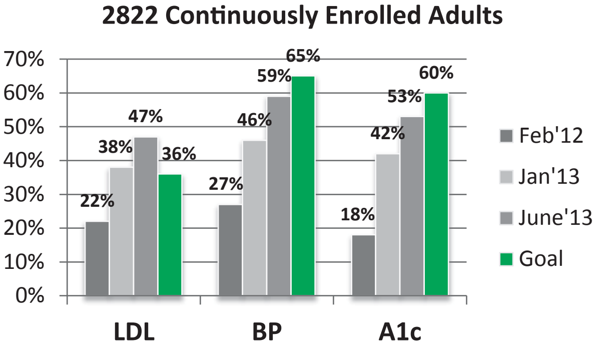


Percentage of patients with a particular condition

Outcomes

Despite the challenges of recruiting and training new staff, learning to collect and organize new types of data, learning how to use new data reports, revising existing processes and developing new ones for managing care and providing services, developing a working understanding of the nature and treatment of chronic diseases that were previously not being given attention, and integrating a whole new approach to care management into existing teams and systems, CMHC HCHs have made remarkable progress in improving clinical outcomes and impacting the service delivery system.

At the outset of the CMHC HCH initiative, the DMH in collaboration with MO HealthNet established benchmark goals consistent with Health Plan Employer Data and Information Set (HEDIS) measures for improving the health status of individuals with diabetes, cardiovascular disease, and hypertension. The following graphs illustrate the significant progress that has been made (from initial enrollment in February 2012–January 2013 to June 2013) in improving the percentage of HCH enrollees with diabetes that we can assure have low-density lipoprotein (LDL), blood pressure (BP), and hemoglobin A1c levels that are in control.

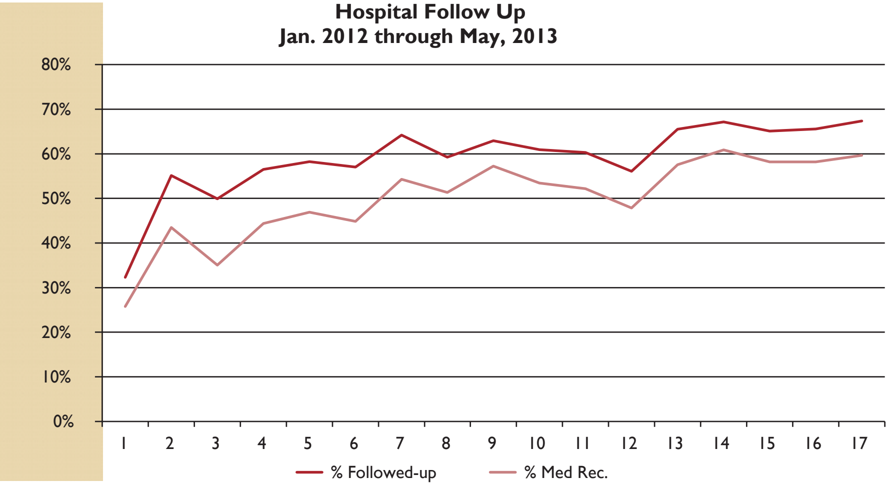


Percentage of the patients meeting the HEDIS criteria for monitoring laboratories in patients with diabetes

In each case, the percentage of individuals with diabetes who have LDL, blood pressure, and hemoglobin A1c levels that are in control, and who had been enrolled for 18 months, exceeded or was approaching the benchmark goals as of June 2013. Progress data are also available for hypertension and pulmonary diseases.

Unnecessary hospital readmissions can often be avoided when good aftercare is provided. Therefore, CMHC HCHs are responsible for following up on all hospitalizations of enrolled individuals and for completing a medication reconciliation following discharge. In February 2012, CMHC HCHs began receiving a daily e-mail notifying them when Medicaid has approved a request for payment for a hospital admission for one of their enrollees.

The following graph illustrates that despite many logistical challenges, there has been a steady improvement in the percentage of HCH enrollees that CMHC HCHs have followed up with, following discharge from a Medicaid-authorized hospital admission.



Percentage of patients receiving follow-up contact and medication reconciliation within 72 hours following Hospital discharge

Cost Impact

Improvements in health status and successfully following up on hospital discharges in a timely manner are impacting the overall cost of care of the individuals enrolled in CMHC HCHs.

Missouri HealthNet analyzed Medicaid expenditures for hospitalization and ER services for CMHC HCH enrollees for the year prior to enrollment and the year following enrollment. They found that there was a 12.8 % reduction in hospital admissions per 1000 and an 8.2 % reduction in ER use per 1000 for individuals enrolled in CMHC HCHs.

Based on average costs for hospital stays and ER services, and adjusting for inflation, together these reductions resulted in a US$ 127.55 PMPM reduction in hospital and ER costs. CMHC HCHs receive a US$ 78.74 PMPM for each enrollee, so that the net savings resulting from the reduction in hospital and ER use was US $ 127.55 − $ 78.74 = US$ 48.81 PMPM, or an overall cost savings of approximately US$ 2.9 million.

An alternative approach to assessing the cost of care is to compare the total cost to Medicaid of all care for the year prior to enrollment, with the total cost to Medicaid of all care for the year following enrollment in a CMHC HCH. MO HealthNet and DMH analyzed total Medicaid cost for the 12,105 individuals who were enrolled for at least 9 months during 2012. Almost one half (5949) of these were dually eligible for Medicare and Medicaid. Medicaid was the sole payer for the remaining 6156 individuals. These 6156 individuals accounted for a net savings of US$ 32.98 PMPM, over and above the US$ 78.74 PMPM cost of the CMHC HCH; a total savings to Medicaid of more than US$ 2.4 million compared to the cost of their care in the year prior to enrollment in a CMHC HCH.

Conclusion

CMHC HCHs have been effective in both improving the health status of enrollees and reducing the cost of care. The criteria were designed to be achievable by any center. Expansion of health home certification to all the BH centers permitted more flexible Medicaid payment methodologies to be implemented to support continuing PHBCI service delivery beyond the 3700 Project demonstration. By early 2014, all 28 centers, with TA from DMH and with mutual support in a learning community with each other, had achieved Commission of Accreditation of Rehabilitation Facilities (CARF) Health Home Certification. The speed of this process was enabled by the fact that the centers had already taken steps to meet the health home standards, which had been disseminated in draft prior to the final approval of the state plan amendment.

Part V: Chapter Summary and Conclusion

This chapter has provided an overview of the key issues and challenges related to provision of integrated primary health and BH care to individuals with serious mental illness. The chapter has further illustrated the framework of "what works" at the clinical practice level, the program development level, and the system improvement level and illustrated opportunities for takeaways and resources at each level to help individual providers, provider organizations, and systems of care to identify next steps of progress in improving health outcomes and costs for this population. Specific resources for which the authors can be contacted include the CIHS organizational assessment toolkit for integration (KM) and information on the Medicaid health home option, the Missouri BH health home standards, and the outcomes of the Missouri CMHC HCHs project for improving cost and outcomes for individuals with SMI and SED (JP).

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Chapter 11
Cardiovascular Disease in Patient-Centered Medical Homes: The Trident Approach

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"Depression's Toll on the Heart" and "Psychologists in Medical Schools," were featured articles on the covers of the American Psychological Association's (APA) popular *Monitor* and *American Psychologist* publications, respectively, in Spring of 2014. The role behavioral and psychological factors play in the development of medical disorders, such as coronary problems, and subsequently the role psychologists and other behavioral health professionals can have in the treatment of these conditions is gaining increased interest. Moreover, this topic reaches far beyond just the medical and psychological fields, it has become mainstream, and its presence can be felt on social media. During the writing of this chapter, even groups on Facebook were sharing an article regarding research on the relationship between behavioral factors and chronic conditions. Speaking to the number of deaths related to chronic diseases, the authors discussed how reducing six risk factors could prevent 37 million deaths in the USA (Kontis et al. 2014). The six risk factors include tobacco use, harmful alcohol use, high salt intake, high blood pressure (HBP), high blood sugar, and obesity. Reducing these would prevent millions of deaths from cardiovascular diseases (CVD), chronic respiratory disease, cancers, and diabetes (Kontis et al. 2014).

Additionally, the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act of 2010 (together known as the Affordable Care Act, ACA), have helped many medical centers heed the call to integrate primary and behavioral health, which has been developing over the past few decades (Levey et al. 2012). The vision is to improve the quality of health care through a system that is integrated, where medical providers, behavioral health providers (BHPs), nutri-

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care*,
DOI 10.1007/978-3-319-19036-5_11

tionists, nurses, and other professionals work together to provide care that is better, more satisfying to the patient, and less costly. Currently, patient-centered medical homes (PCMHs) are being rolled out across the USA in an effort to transform the organization and delivery of primary care services. The PCMH has five functions, including providing comprehensive physical and mental care, providing patient-centered care, coordinating all aspects of patients' care, providing accessible services, and ensuring a commitment to providing evidence-based medicine (Auxier et al. 2013). Psychologists and other BHPs are in a unique position to make significant contributions in PCMHs, especially with regard to managing chronic diseases and promoting prevention and wellness to patients (Auxier et al. 2013; Rich et al. 2012). As is a focal point of PCMHs and the evolving healthcare system, BHPs can help organizations coordinate follow-ups, improve communication among primary care practitioners (PCPs) and specialists, and provide current evidence-based treatments for chronic diseases and other health conditions.

One such chronic disease that requires extensive efforts to prevent, treat, and manage in PCMHs is CVD and CVD-related diseases. For clarity of terms in this chapter, we use the American Heart Association's (AHA) definition of CVD (Go et al. 2013). In their most up-to-date review on heart disease (HD) and stroke, the AHA recommends the umbrella term "CVD" that refer to all the diseases of the circulatory system (i.e., heart and blood vessels), including HBP, HD, stroke or cerebral vascular accident (CVA), peripheral artery disease (PAD), and diseases of the veins such as venous insufficiency and thrombosis. With the exception of 1 year since 1900 (in 1918, pneumonia was the number cause of death), CVD-related deaths have been the number one cause of death for both men and women (Go et al. 2013). In 2010, CVD-related conditions were listed as the primary cause of death for 31.9 % of all deaths in the USA (Go et al. 2013). Expanding reason of death to include any mention of CVD, primary or secondary, the number of deaths attributed to CVD increases to 54.5 %; meaning, at least half of all deaths in the USA are related to CVD (Go et al. 2013).

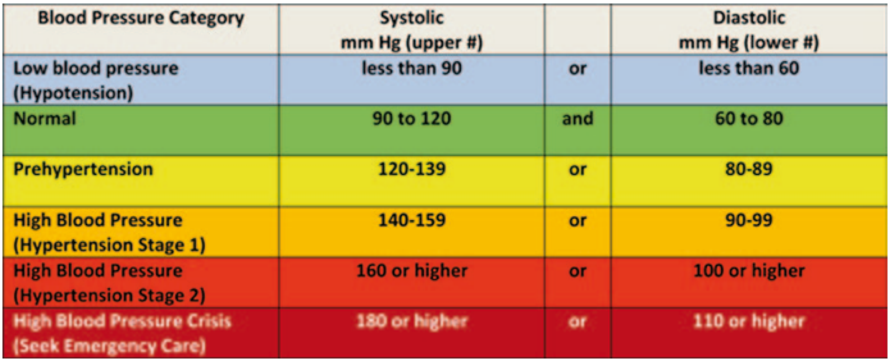
Because of CVD accounting for a large number of primary care visits, and keeping in line with the goals of the PCMH, it is becoming clear that multiple providers are needed to help PCPs effectively manage CVD, other chronic conditions, and overall health. Ostbye and colleagues (2005) found that it would alone take approximately 10.6 h per day for PCPs to carry out the tasks called for in the treatment guidelines of the top ten chronic illnesses! Obviously, in order to meet such standards, either the guidelines must be streamlined or significant changes must be made in the way services are delivered (Ostbye et al. 2005). This chapter describes the latter, and it includes a description of the critical role BHPs, with their expertise in behavioral principles and the right model for integrating, can have in helping to deliver services in PCMHs. By adjusting to the fast-paced, high-volume environment of primary care, a BHP's unique skill set can help PCPs provide improved care to more patients (Mauer 2002). This chapter provides an overview of CVD, the modifiable risk factors, evidence-based interventions, the models of integration that are often used within PCMH, and the role BHPs can play in addressing CVD in PCMHs. We end with providing a case study demonstrating how BHPs can aid care in PCMHs.

Before we begin, we want to point out that due to the novelty of the PCMH and even integrated care, research is still being refined in regards to brief behavioral interventions for CVD. While evidence has been established in addressing factors contributing to CVD (e.g., smoking cessation, weight management, etc.), which is discussed later in the chapter, more research is needed to establish effectiveness with CVD in the PCMH setting. In a way, what we are describing is a vision, an aspirational hope for what can work in PCMH.

Overview of CVD

Definitions and Etiology The terminology used to describe the medical conditions associated with the cardiovascular system is extensive and can be a conundrum for professionals whose primary training is not in the medical field. Therefore, it is important for BHPs working in PCMHs to have a basic understanding of the terminology and to be aware of the nuances of the language. To reiterate, when discussing CVD in this chapter, the authors use the AHA's (Go et al. 2013) definition of CVD, which includes all the diseases related to the heart and blood vessels (i.e., arteries, veins, and capillaries), including HBP, HD, stroke, PAD, and diseases of the veins.

Specifically, HBP or hypertension (HTN) is defined in patients whose systolic pressure and diastolic pressure are equal to or greater than 140 and 90 mm Hg, respectively, or when patients are using antihypertensive medications and have been told at least twice by a medical provider that they have HBP. For more details on classification, see the figure below.



Blood Pressure Category	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)
Low blood pressure (Hypotension)	less than 90	or	less than 60
Normal	90 to 120	and	60 to 80
Prehypertension	120-139	or	80-89
High Blood Pressure (Hypertension Stage 1)	140-159	or	90-99
High Blood Pressure (Hypertension Stage 2)	160 or higher	or	100 or higher
High Blood Pressure Crisis (Seek Emergency Care)	180 or higher	or	110 or higher

The term "uncomplicated HTN" refers to the diagnosis given to patients when they do not have comorbid diabetes mellitus (DM), heart failure (HF), chronic kidney disease or known coronary heart disease (CHD; Kaiser Permanente Medical Care Program 2013). As blood pressure (BP) rises, the heart must use more effort and energy to pump effectively. The arteries bringing blood into the heart are moving with increased pressure, which, over time, leads to structural damage to the heart, blood vessels, and arteries (Dornelas 2008). With this, HBP is a major risk factor in the development of HD. In many cases, the exact causes of HBP are not identifiable; these are diagnosed as primary or “essential HTN.” Secondary HTN is HBP that is due to underlying conditions (e.g., kidney problems, adrenal gland tumors, congenital defects of blood vessels, certain medications, illicit drug use, etc.). Unlike primary or essential HTN that tends to develop gradually, secondary HTN tends to happen rather suddenly (Mayo Clinic Staff 2013). With essential HTN, patients may control their BP by lifestyle modifications or a combination of lifestyle and medication approaches (Mayo Clinic Staff 2013).

People are also affected by many other common forms of CVD. Also known as coronary artery disease (CAD), CHD is the most common kind of HD and develops from fatty, waxy deposit buildup on the walls of the arteries that supply blood to the heart (Center for Disease Control and Prevention (CDC) 2013). The fatty deposit, consisting of plaque, leads to the hardening and narrowing of arterial walls in a process known as “atherosclerosis” (CDC 2013). The general thickening of an individual’s arteries, which often restricts the blood flow to organs and tissues, is known as “arteriosclerosis.” However, it should be noted that these terms are often used interchangeably (Mayo Clinic Staff 2013). Ultimately, the healthy flexible arteries become hardened and narrow which may block the flow of oxygen-rich blood to the heart, leading to angina pectoris or chest pain, myocardial infarctions or heart attacks, and sudden cardiac death (CDC 2013). Valvular HD involves the inadequate blood flow or backward flow of blood due to either damage or a defect in one of the four heart valves, including the mitral, aortic, tricuspid, or pulmonary valves (Johns Hopkins Medicine 2014). Valvular HD varies in severity, with severe cases leading to congestive HF (Johns Hopkins Medicine 2014). Cardiomyopathy is when the heart becomes weakened and is no longer able to pump blood, which eventually leads to HF and arrhythmias. HF is a condition in which the heart cannot provide enough blood to meet the body’s needs, whereas arrhythmias are disruptions in the rate and rhythm of the heartbeat (National Heart, Lung, and Blood Institute (NHLBI) 2012).

Additionally, stroke refers to when a blood clot blocks the blood flow to part of the brain or when blood vessels in or near the brain burst, causing damage or death to parts of the brain (CDC 2014). There are two main types of strokes, which include ischemic and hemorrhagic strokes, with the former being the more common. When arteries that supply oxygen-rich blood to the brain become blocked, an ischemic stroke will occur. Whereas if there is rupture or a leak in the artery, it is considered a hemorrhagic stroke. When blood leaks from an artery it damages nearby brain cells. Aneurysms, which are bulges inside the arteries that stretch and burst, as well as HBP can cause hemorrhagic strokes (CDC 2014).

A basic understanding of these medical terms is important for anyone working with these conditions. Diseases of the heart and circulatory system include numerous specific conditions with different origins, treatments, and prognoses. Depending on which condition the patient presents with, the BHP may need to look to the current medical literature as well as consult with the patient’s PCP for more detailed information. Although this chapter is focused on the modifiable risk factors that are associated with these conditions, the BHP should be aware that there are a number of CVD risk factors that are non-modifiable, including older age, male gender, family history, and genetic predispositions (Dornelas 2008; Farrimond et al. 2010).

Prevalence Rates Approximately 83.6 million Americans, which is greater than one in three adults, have at least one type of CVD (Go et al. 2013); and it should be noted that when discussing CVD prevalence rates in this chapter, congenital CVD are not included in the data. Congenital CVD, which results from defects of the heart that are present at birth, are excluded in order to focus on CVD that develops in adulthood. Almost half of American adults with CVD are estimated to be older than 60 years of age. The most predominant type of CVD is HBP, which affects 77.9 million Americans (Go et al. 2013). According to the AHA, 82 % of Americans who have HTN are aware of their condition; however, and unfortunately, only 53 % are classified as having their BP controlled (Go et al. 2013). Lifestyle modification for health promotion and CVD risk reduction is an important part of treatment (Stone et al. 2013), but treatment adherence is low for both medication and lifestyle change approaches in CVD. This reality contributes to the 12.4 million yearly physician visits related to HD (Go et al. 2013). HTN is the second most common reason for medical visits in the USA, with approximately 30 million HBP-related medical visits a year (Al'Absi and Hoffmann 2003).

Several other types of CVD also affect millions in the USA. Specifically, CHD is the most common type of HD, which alone affects approximately 15.4 million people and kills more than 385,000 people per year. It also costs the US $ 109.8 billion in healthcare services, medications, and loss of productivity (CDC 2014). Moreover, 7.6 million people have had at least one heart attack, 7.8 million have been diagnosed with angina pectoris, 5.1 million have HF, and 6.8 million have had a stroke. Cerebrovascular disease, which includes stroke, is the fourth leading cause of death in the USA, behind diseases of the heart, cancer, and chronic lower respiratory disease (Murphy et al. 2012). Alarmingly, by 2030, the AHA estimates that 43.9 % of Americans will have at least one form of CVD (Go et al. 2013).

Health Disparities There are also some noteworthy health disparities with regard to race, gender, age, and socioeconomic status (SES). The prevalence rates for HBP include 20.9 % of Latinos, 21.2 % of Asian Americans, and 22.9 % of whites; compared to the 36.5 % of Native Hawaiians or Pacific Islanders, 32.9 % of blacks, and 24.8 % of American Indians and Alaska Natives (Stone et al. 2013). Blacks living in the USA have the highest HBP prevalence in the world, and tend to develop HBP at younger ages (Go et al. 2013). Other pertinent health disparities among blacks versus whites include the fact that blacks have a 1.3 times increased chance of nonfatal stroke, almost a two times greater rate of fatal stroke, a one and a half times greater rate of death due to HD, and have a four times greater rate of end-stage kidney disease (Stone et al. 2013). Furthermore, death rates attributable to CVD are higher for both black males and females compared to their white counterparts (Go et al. 2013). Ethnic minorities including African Americans, Mexican Americans, Hispanics/Latinos, among others have higher rates of DM, which is another risk factor of CVD (Go et al. 2013).

Regarding gender, men have higher rates of HBP than women and death rates attributable to CVD are higher for men than women. Individuals of low SES have higher rates than individuals of high SES (Al'Absi and Hoffman 2003; Sperry 2009). The prevalence rate of HBP rises significantly for adults 60 years and older, with two thirds of the population having HBP (Sperry 2009). These statistics illustrate how important screening and intervention is for CVD related illnesses.

Treating CVD: Screening and Intervention Recommendations

As noted above, CVD encompasses a number of different pathologies, and contributes a tremendous amount of the burden on the USA economy and medical field. Due to this, much effort has gone into developing effective screening and intervention recommendations. Further, prevention and overall health promotion is being emphasized as much or more than "after-the-fact" treatments. Given that both intervention and prevention often involve behavior change, and given how much of CVD care occurs in primary care, BHPs have an opportunity to help meet the call of an evolving health system. Thus, BHPs need to be aware of established screening and intervention recommendations, as well as specific techniques for effectively treating and preventing CVD. Multiple governmental organizations (e.g., the United States Preventive Services Task Force (USPSTF), CDC, National Institute of Health (NIH), etc.) have outlined recommendations for CVD. The gold standard of primary care practice is based on the recommendations by the USPSTF.

USPSTF Recommendations The USPSTF provides recommendations for primary care and other physicians regarding a variety of conditions, including CVD (see http://www.uspreventiveservicestaskforce.org/recommendations.htm). Both treatment and screening recommendations are provided, along with a grade based on the strength of evidence supporting them (grade A = recommended, high certainty that benefit is substantial; grade B = recommended, high certainty that benefit is moderate to substantial; grade C = likely to only have small benefit and it is up to the physician to determine appropriateness for individual; grade D = not recommended, moderate to high certainty that the service has no net benefit; grade I = insufficient evidence to determine benefit).

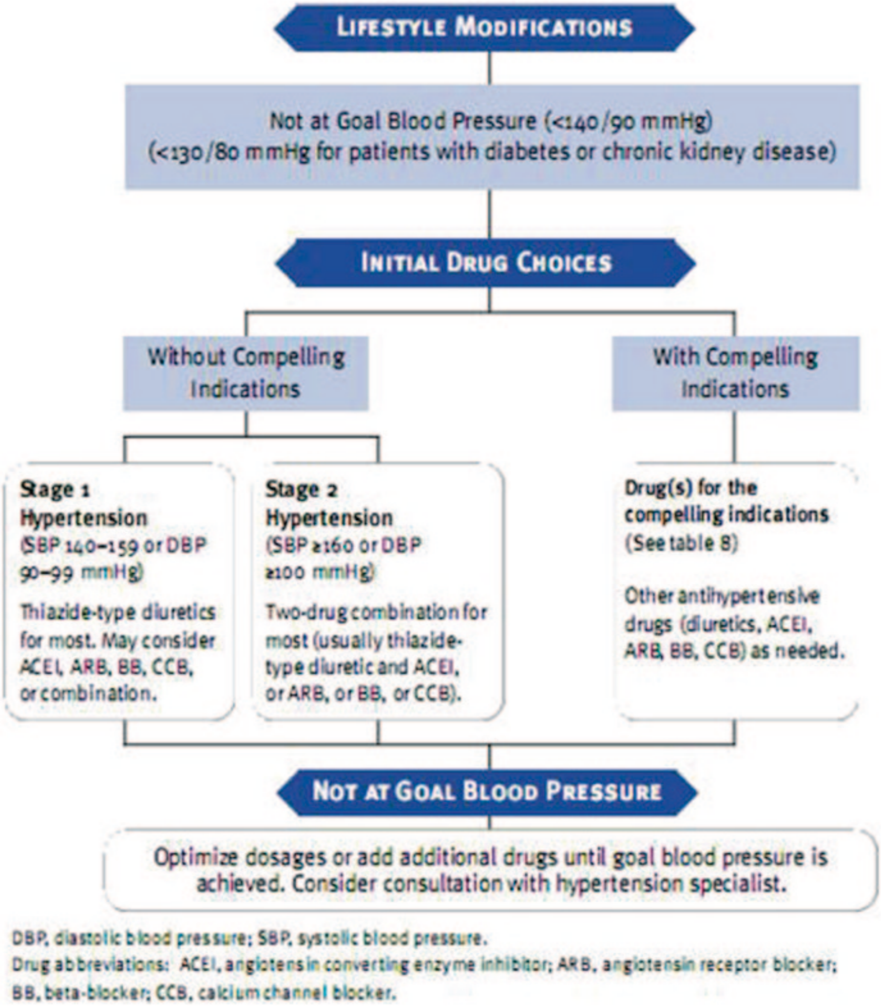
In 2010, the USPSTF systematically reviewed the overall benefit of behavioral counseling regarding preventing CVD and CVD-related concerns. Specifically, the USPSTF reviewed studies of behavioral counseling for dietary change, physical activity change, or both (Lin et al. 2010). Researchers looked at improvements in weight or body mass index (BMI), BP, glucose levels, and cholesterol/lipid levels as outcome measures. Of the various prevention options, the USPSTF found that counseling advice for dietary improvements showed the greatest impact on reducing risk for CVD (Lin et al. 2010). Further, offering high-intensity counseling showed the most robust improvements in the identified outcomes. However, and as pointed out by the USPSTF, many of these higher-intensity interventions were not delivered in primary care agencies and, one could assume, may not be feasible for primary care (Lin et al. 2010).

Overall, the USPSTF assigned the recommendation of behavioral counseling interventions for CVD prevention a grade C (Lin et al. 2010). While there is undeniably strong support regarding the relationship between behavioral factors (i.e., healthy diet and physical activity) and risk for CVD, the benefit of offering counseling on these factors has yet to be firmly established. Note, however, that the USPSTF did not assess the differences that rendering providers (e.g., a PCP or a BHP or a nurse) had on the outcome measures or the effect sizes of these interventions. While some of the interventions were either fully or partially delivered by physicians, no specifications regarding the other providers' credentials were detailed. One might imagine that as more BHPs enter primary care and deliver behavior change programs, outcomes could improve. The BHP can often take more time than can a PCP, and of course has specific training in behavior change strategies.

Regarding behavioral counseling for adult tobacco users (a risk factor for CVD), the USPSTF encourages providers to offer tobacco cessation counseling (Calonge et al. 2009). The USPSTF defined this recommendation as a grade A, indicating significant evidence to support the use of tobacco cessation counseling to reduce risk for heart and vascular diseases (Calonge et al. 2009). Specifically, the USPTSF encourages use of the 5-A counseling framework, which is discussed in more detail later in this chapter. While the USPSTF acknowledges that one brief visit can be successful in reducing tobacco use, it reports that longer and multiple visits produce superior outcomes. Fiore et al. (2008), which the USPSTF referred to in their report, found that brief and intensive tobacco counseling were both effective in increasing quitting rates. They also found a dose response in that the benefits of counseling plateaued after 90 min of total counseling. Further, combining counseling with pharmacotherapy, such as nicotine replacement therapy (NRT), buproprion, or varenicline, can have superior outcomes when compared to providing a single form of treatment (i.e., behavioral counseling or pharmacotherapy; Calonge et al. 2009; Fiore et al. 2008).

Overall, the USPSTF encourages medical and primary care agencies to adopt specific strategies to effectively treat, screen, and reduce risk of tobacco use. Specifically, the task force recommends agencies develop tobacco-user identification systems to make sure all tobacco users are identified in the agency. More so, assuring clinical interventions are evidence-based and providers have the proper resources (e.g., psychoeducation and behavioral intervention handouts, quitlines, etc.) at their disposal is recommended. Finally, the USPSTF recommends that agencies have qualified, trained staff to provide and assist in the delivery of interventions and screening practices. These recommendations represent an opportunity for BHPs, who are well positioned to assist PCMHs in effectively implementing these recommendations (Calonge et al. 2009). They must, however, be trained in brief tobacco cessation interventions and be available to help when the need arises.

Regarding further screening and treatment options for CVD-related concerns, the USPSTF found good evidence for screening and treating HTN in the primary care setting; however, there is insufficient evidence regarding how often individuals should be screened for HTN (Wolff and Miller 2007). Different agencies have different recommendations for this. The Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC 7) recommends individuals who have a BP under 120 over 80 mm Hg be screened once every 2 years. It further recommends that those individuals who have BP ranging from systolic 120–139 mm Hg or diastolic 80–90 mm Hg be screened every year. These screening recommendations have been identified as "grade A" recommendations (Wolff and Miller 2007). Regarding treatment recommendations for individuals with HTN, the USPSTF refers to the treatment algorithm developed by the JNC 7 (see Fig. 11.1).



DBP, diastolic blood pressure; SBP, systolic blood pressure.
Drug abbreviations: ACEI, angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; BB, beta-blocker; CCB, calcium channel blocker.

Fig. 11.1 JNC-7 algorithm for HTN intervention

Specifically, first-line treatment for HTN includes lifestyle modifications, which consists of decreasing dietary sodium intake, increasing potassium, increasing physical activity, losing weight, reducing stress, and decreasing alcohol consumption. Of course, all of these involve behavior change, and as will be discussed in subsequent sections, research has shown BHPs could have an important role to play in modifying these behaviors. Second-line treatment includes the introduction of pharmacological options (i.e., thiazide-type diuretic, angiotensin-converting enzyme (ACE) inhibitors, dihydropryridine calcium channel blocker, spironolactone, or a beta blocker; Wolff and Miller 2007).

The USPSTF also provided recommendations regarding the screening of CHD. At this time, however, the task force graded any recommendations regarding CHD screening for asymptomatic adults as “insufficient,” indicating at this time there is an inadequate amount of research to recommend or not recommend screening (USPSTF 2009).

Objective Measuring of Risk and Quality of Life Patient-centered medical homes provide unique obstacles when assessing for CVD. Particularly, assessment measures need to not only be effective in assessing risk for pathologies, such as CVD, but also to do so in an efficient, timely manner. For CVD, the most commonly used brief assessment measurement was developed from the ongoing Framingham Heart Study. The Framingham Heart Study offers a 10-year risk assessment based on the individual’s age, diabetes status, smoking status, systolic BP, total and high-density lipoprotein (HDL) cholesterol, and current BMI or lipid levels (to access the Framingham 10-year CVD risk calculator, visit https://www.framinghamheartstudy.org/risk-functions/cardiovascular-disease/10-year-risk.php). The Framingham Heart Study also provides risk calculators for CHD, congestive HF, HTN, and stroke (to access other Framingham risk calculators, visit https://www.framinghamheartstudy.org/risk-functions/index.php).

In addition to the Framingham risk calculators providing information regarding an individual’s likelihood of developing a disorder, it is quick and utilizes information that is most likely readily available in the patient’s chart. Thus, BHPs would most likely be able to complete these assessments with the patients, as well as develop specific behavioral interventions to lower the patient’s risk, when needed. Thus, not only would PCPs be relieved of another task to complete (i.e., calculating patient CVD risk) but they could also work with the BHP on addressing the behavioral components that are related to the patient’s respective risk level.

While assessing specific risk for particular concerns, such as CVD, is important in PCMH, so too is it important to have brief assessments that measure overall quality of life or functioning. Two popular quality of life/functioning assessments are the Duke Health Profile and the World Health Organization Quality of Life Brief (WHOQOL-BREF). The Duke Health Profile consists of 17 items that provides a general health score, as well as domain scores that include physical health, mental health, social health, perceived health, and self-esteem (Parkerson et al. 1990). The Duke Health Profile also has the ability to assess for anxiety and depression. The

WHOQOL-BREF is a 26-item measure of quality of life that provides a total composite score, as well as domain scores regarding social, physical, psychological, and environmental well-being (WHO 1998). Both measures are brief and provide an assessment of not only general quality of life but also domains that may influence quality of life and subsequent medical treatment. Using these measures helps promote the holistic, functional perspective of PCMHs.

Other Modifiable Risk Factors

In addition to diet, physical inactivity and tobacco use, several other modifiable risk and behavioral factors for developing CVD are emphasized throughout the literature (Carter 2004; Dornelas 2008; Go et al. 2013; Hunter et al. 2009; Lin et al. 2010). Some risk factors for CVD are non-modifiable, such as age, gender, and family history of CVD. However, a large proportion of the risk factors, especially those associated with CHD, stem from modifiable health behaviors and conditions, such as problematic alcohol use, stress, and the aforementioned tobacco use, poor diet, and physical inactivity. The related conditions of high plasma cholesterol, HBP, obesity, and DM are also risk factors. The estimated population attributable fractions for CVD mortality, which refers to the percentage of those who die from CVD due to the exposure to a certain situation or influence, and includes HBP (40.6 %), smoking (13.7 %), poor diet (13.2 %), insufficient physical activity (11.9 %), and abnormal blood glucose levels (8.8 %; Go et al. 2013). Additionally, the attributable fractions for ischemic HD mortality are 34.7 % for HBP, 20.6 % for poor diet, 16.7 % for smoking, and 7.8 % for insufficient physical activity (Go et al. 2013).

Preventive measures for all types of CVD, and CHD in particular, include eating a healthy diet that is high in fiber and low in saturated fat, cholesterol, and salt (<2.4 gm per day) as well as maintaining a healthy weight (i.e., BMI <25.0), exercising regularly (i.e., moderate leisure-time physical activity for >150 min per week or vigorous activity for >75 min per week for adults and >60 min per day for children), not smoking, and limiting alcohol (i.e., no more than one standard drink for women, and two standard drinks for men, daily; Go et al. 2013). These preventive measures not only contribute to having good health in order to enjoy life but also people with low CHD risk can live nearly 10 years longer than those who have high risk (AHA 2014). Because some of these health behaviors can accumulate in childhood and add to the risk of CHD, it is important for good health behaviors (e.g., maintaining healthy weight, engaging in physical activity, etc.) to start in childhood (AHA 2014). As such, any BHP working in primary care should look for ways to help with both children and adults. By integrating into well-child checks and other interventions with children, a BHP can help prevent CVD throughout the lifespan.

Avenues of Providing Behavior Change

A variety of behavioral strategies and approaches can be used to help patients make the healthy changes that can prevent and/or treat CVD. A 2013 document from the AHA outlines "Evidence-Based Individual Approaches for Improving Health Behaviors and Health Factors" for coronary problems (Go et al. 2013). Each of their recommended approaches is exactly the sort of assistance a BHP could provide in a primary care clinic. The first is helping patients set specific goals and develop an individualized plan for improving diet, reducing smoking, and increasing physical activity. Additional approaches include the use of self-monitoring tools for diet and physical activity. This can be done via paper and pencil food and activity diaries or via web-based or mobile applications. Scheduling follow-ups with a provider who can assess and reinforce goal progress, and adjust and set new goals, is also helpful. Providing feedback about goals is an effective mechanism for improving health behaviors as well as helping patients increase their belief that they can successfully change their behavior (Go et al. 2013; Stone et al. 2013). Improving support from the patient's family, friends, and peers in the workplace or community is another valuable approach. Using at least two of the aforementioned strategies is strongly recommended (Go et al. 2013).

Thus, while we know what needs to change in order to prevent and successfully treat CVD, there is limited research regarding the most effective and efficient ways of helping patients make these changes. We have found three specific treatment avenues that are starting to develop research regarding their effectiveness in targeting CVD-related concerns. Each of these is helpful for use in primary care, because their trans-diagnostic nature allows for use with patients who have multiple chronic conditions, and their malleability makes them useful for brief visits.

Motivational Interviewing (MI) Patients can and should be educated about how healthy lifestyle changes can prevent and/or treat CVD, but having this knowledge does not mean behavior will change. Traditionally, CVD patients have very poor adherence to medical and lifestyle recommendations (Go et al. 2013). Patients may be ambivalent about their desire to change as well as their ability to change. Many lifestyle behaviors are behavior patterns or habits that patients have engaged in all day long, day after day, for years; as such, it can be difficult to implement change. Miller and Rollnick (2002) developed, and continue to develop, MI, to help patients who are struggling to change behaviors.

The MI approach is a patient-centered style of interacting and collaborating with patients in order to resolve ambivalence about a behavior change. It was originally developed to help individuals overcome addictions; however, the concepts are now widely applied in medical settings (Knight et al. 2006). Miller and Rollnick (2002) highlight the importance of a motivational component to treatment, explaining that behavior change should not be viewed as "all or nothing"; rather, readiness to change certain behaviors should be assessed through the lens of the transtheoretical model. In this model, one's readiness to change is considered along a continuum consisting of five stages of change (precontemplative, contemplative, preparation, action and maintenance). The role of the healthcare provider is to help the patient progress through the stages, and any progress is considered positive, even if the desired behavior change has not yet occurred (Miller and Rollnick 2002).

There have been multiple studies and literature reviews pointing to the utility of MI in a health-care setting. It has been shown to increase physical activity, and subsequent independence and quality of life, in older individuals with HF (Brodie and Inoue 2005); to be a useful method for nurses to help change health behaviors in those with coronary risk factors (Thompson et al. 2011); and to help Latinos in controlling BP via lifestyle changes (i.e., lose weight, dietary approaches to stop hypertension (DASH) diet, and increase physical activity; Rocha-Goldberg et al. 2010). Knight and colleagues (2006) completed a systematic review that included three randomized controlled trials (RCTs) that utilized MI with CVD. Overall, there was strong support for MI in improving behaviors related to CVD; however, the studies varied in the intensity (e.g., 45 min visit once a month to an hour each week) and who provided the intervention (e.g., nurse practitioners, registered nurses, and psychologists). Still, there is evidence in the literature supporting the use of MI for helping patients modify behaviors to prevent and treat CVD. As with all of the approaches discussed, the transferability of MI to PCMH still needs to be firmly established. For more information on the use of MI in health care, see Rollnick et al. (2008) book, *Motivational Interviewing in Health Care.*

Acceptance and Commitment Therapy (ACT) In recent years, so-called third wave behavior therapies, such as ACT, are gaining support. Robinson et al. (2010) outline the use of ACT in brief, primary care visits for specific conditions (e.g., weight, depression, anxiety, etc.). Furthermore, Strosahl et al. (2012) outlined the use of focused ACT (FACT), which is using ACT in brief sessions in their recent book, *Brief Interventions for Radical Change: Principles and Practice of Focused Acceptance and Commitment Therapy.* FACT was born out of work in primary care, and the brevity of these techniques is suitable for medical settings. Because ACT and FACT are transdiagnostic and providers cannot feasibly have different protocols for each and every health condition, clinicians can use its conceptualization and techniques to address factors associated with CVD including treating depression, anxiety, stress, weight, smoking cessation, exercise adherence, treatment adherence, reducing substance and alcohol use, among others. Finding a way to encourage adhering to treatment, eating a proper diet, starting an exercise routine, and reducing stress levels will continue to be important in the primary care setting.

Substance Abuse and Mental Health Services Administration (SAMSHA 2010) has found ACT to be evidence-based for depression and chronic pain. Other evidence supports the use of ACT for weight management, anxiety, smoking cessation, and substance and alcohol use (Arch et al. 2012; Forman et al. 2013; Gifford et al. 2011; Heffner et al. 2003; Hernandez-Lopez et al. 2009; Tapper et al. 2009). Jonathan Bricker from the Fred Hutchinson Cancer Research Center in Seattle, WA, continues to complete research projects regarding the effectiveness of ACT with tobacco users. From individual to group visits, to smoking quit lines and websites, even an ACT smoking app (i.e., SmartQuit), Bricker's research has demonstrated the effectiveness of multiple modes of delivery of ACT with smoking cessation (Bricker et al. 2010; Bricker et al. 2013). Additionally, Low et al. (2008) conducted a study which found that with regards to stressful experiences, those who used acceptance-based strategies had better heart rate habituation and recovery than those who used evaluative emotional processing. The researchers concluded that using mindfulness and acceptance-based strategies may help in producing positive health outcomes (Low et al. 2008). By focusing on increasing psychological flexibility through the six core principles (i.e., mindfulness, acceptance, cognitive defusion, self as context, committed action, and values), a patient can improve their overall health functioning, and specific health conditions.

More research are needed to establish the efficacy of ACT to address medical conditions in primary care especially those related to CVD. One such study by two of the authors and colleagues (Melissa Baker and Kristin Tiernan) used three brief in person visits based on ACT principles to help patients with HBP make changes in areas related to quitting smoking, increasing exercise, improving diet, reducing stress, and reducing alcohol. (Robinson, Rosen, Gould, Bauman, Beachy and Baker 2014). While the results of the study have been promising and are currently being revised for publication, larger studies, particularly RCTs, are needed to establish ACT's effectiveness. However, due to its transdiagnostic approach, as well as being adapted to fit within brief visits in primary care centers, it appears to be an intriguing approach for PCMHs when treating CVD.

The 5-A's Lastly, Hunter et al. (2009) discussed approaching behavioral interventions in primary care settings from the 5-A's approach. Originally adopted and modified from Whitlock et al. (2002), as well as Goldstein et al. (2004), Hunter et al. (2009) posited that the 5-A's is well fitted for primary care due to its brevity, structure, and transdiagnostic focus. The 5-A's consists of five strategies the clinician can use to promote behavior change: assess, advise, agree, assist, and arrange. Each strategy builds off of the previous strategies.

In the first, *assess,* the clinician determines how the presenting concern is affecting one's overall functioning (e.g., physically, cognitively, emotionally, socially, etc.). The focus is on how the problem is affecting quality of life. Next, in the *advise* stage, potential strategies for addressing that problem are provided. For example, an individual who presents with HBP could potentially be advised to address one of the modifiable risk factors (e.g., increase physical activity, quit smoking, reduce alcohol, etc.) that contribute to HBP. The patient and clinician then *agree* on a variety of options that are feasible and realistic for the patient to implement. Again, using an HBP patient, the clinician could discuss with the patient the feasibility of increasing exercise to 30 min, 5 days a week, or changing eating habits to follow the DASH diet. It is important during this phase that the BHPs work with the patient to develop realistic, functional goals to improve the specific health concern. Once the goal(s) are agreed upon, the clinician then *assists* in coming up with a specific plan. For example, the clinician could discuss using self-monitoring to track physical activity, with a goal of increasing exercise to 30 min, 5 days a week, or the BHP may discuss using stimulus control and self-monitoring to help the patient limit their salt intake, or to follow the DASH diet. Lastly, *arrange* refers to how the agreed upon plan will be implemented. Deciding upon when the clinician and patient will next meet, or if an outside referral is warranted, could be discussed during this phase.

For further reading regarding the 5-A's, see Hunter et al. (2009), where case examples are used to demonstrate use of this strategy with multiple problems. While a promising strategy for CVD in the context of PCMHs, additional research, especially RCTs, needs to be completed on the 5-A's method to assess its effectiveness in improving and reducing the risk factors of CVD.

The commonalities of the previous three approaches should be highlighted. Specifically, the brevity and focus on functional restoration, while also being able to address specific health components is key. Regardless of one's orientation or intervention, BHPs and other clinicians must be flexible and use transdiagnostic approaches when addressing concerns such as CVD in PCMHs.

Other Factors to Consider When Working with Cardiac Patients When BHPs are working with cardiac patients, they must keep in mind a number of different factors. For instance, anxiety and depressive symptoms are likely to increase after the initial diagnosis of HD; however, after about 1 month, most people resume normal functioning (Dornelas 2008). The severity of the disease and the patient's premorbid functioning affects how much impairment a patient experiences (Dornelas 2008). Many people are able to return to work; however, clinicians and patients must take into account the patient's attitude towards work, the requirements of the job, the work environment, and a patients' age when discussing the decision of whether to return to work. If a patient decides to go on medical disability, one must also be aware of some of the potential difficulties, including but not limited to experiencing boredom, loss of purpose, a reduction in social ties, an increased dependence on his or her partner, and increased financial burdens (Dornelas 2008). As has already been mentioned, depression is very common among cardiac patients, and it is often related to situational issues. Helping patients adjust to the diagnosis can be an important part of treatment with cardiac patients.

For patients diagnosed with HF, there are a number of factors to consider. First, the condition is often highly unpredictable, and many patients do not have a full understanding of the condition or the requirements of the treatment regimen (Dornelas 2008). As alluded to previously, depression in patients is linked to poor prognosis and higher mortality rates in those with HF (Jiang et al. 2004). In fact, for those with HF, one in five have a diagnosis of major depressive disorder and one in three experience increases in anxiety 1 year after diagnosis (Artinian 2003). Some HF patients experience deficits in cognitive functioning, which can limit understanding of patient education materials. Overall, there are a number of different biopsychosocial factors to consider when working with patients with CVD.

Integrating Behavioral Health and Primary Care

When working in primary care, BHPs not only need to be aware of CVD screening recommendations, modifiable risk factors, and behavioral strategies to implement but also need to understand how to integrate their care into the PCMH team. We provide below a brief introduction to integration, and then discuss in detail the Primary Care Behavioral Health (PCBH) model which is designed to meet the goals, culture, and demands of PCMHs.

Doherty et al. (1995) outlined the first classification of integrated models by level of collaboration and integration, which included five levels ranging from minimal collaboration to fully integrated. The idea is to have a description of the degree of integration so organizations can evaluate where they are on the spectrum and where they can improve their integration. There is now an updated version, which includes six levels that are organized into three broader categories (Heath et al. 2013). The first two levels make up "coordinated care," in which the highlight of this movement is towards increased communication. The third and fourth levels constitute colocated care, which emphasizes improved proximity. The fifth and sixth levels are classified as integrated care, which is signified by practice change (Heath et al. 2013).

Practitioners by and large advocate for a change in health care towards more integration; however, upon realizing it may mean a change in the way they practice, practitioners often lose that same level of enthusiasm. Therefore, it takes concerted effort to bring change to an organization and perseverance through growing pains. Strosahl (1998) explained that behavioral health should strive towards integration versus merely collaboration. He discerned the two by noting that collaboration is behavioral health working with primary care, whereas integration involves behavioral health being a standard part of primary care (Strosahl 1998). If organizations can get to the highest levels of integration, they may be able to transform practice to a better system that benefits the patients, the providers, and the health of the larger society (Heath et al. 2013).

There are a number of models for merging behavioral health and primary care, but we propose using models that fit into the level 5 and level 6 of integration. For more information on each of the levels of integration refer to http://www.integration.samhsa.gov/resource/standard-framework-for-levels-of-integrated-healthcare, where you can find the full report and a detailed chart. For more information on specific integrated models of behavioral health and primary care, refer to Collins et al. (2010) in depth article, "Evolving Models of Behavioral Health Integration in Primary Care." Collins et al. (2010) organized the different practice models into the categories of coordinated, colocated, and integrated systems. The PCBH model, which is the model we focus on in this chapter, has been classified into the "integrated" category by Collins and colleagues.

PCBH Model Each of the authors of this chapter provide integrated health services at PCMHs that utilize the PCBH model. We have found this model fits seamlessly with the mission of the PCMH; indeed, it was designed specifically for that.

Over the past two decades, the PCBH model has been implemented into a variety of medical centers around the USA (e.g., community health centers, military health centers, VA health centers, etc.; Funderburk et al. 2013; Robinson and Reiter 2007). The "BHP" that we have referred to throughout this chapter is called a behavioral health consultant (BHC) in the PCBH model. The label "consultant" is used to denote the role and goals of the BHC, which are different from a traditional "therapist" role and goals (Robinson and Reiter 2007). The BHC's goal is to improve the efficiency and effectiveness of primary care medical providers (PCP; e.g., physicians, nurse practitioners, physician's assistants) in treating patients whose behaviors are significantly affecting their health (Robinson and Reiter 2007). This means the BHC's role is not to be the primary provider of behavioral care to the patient, but rather to augment and improve the PCP's care.

A BHC typically meets with patients for brief visits (30 min or less), and follows the patient along with the PCP until improvement is starting to occur and a clear plan is in place for continuing improvement (Robinson and Reiter 2007). This model allows the BHC to remain accessible to new patients, which is crucial in primary care where patient volume is very high. Indeed, the BHC often is available "on-demand," in the manner envisioned by the concept of the PCMH. The BHC utilizes a "take all comers" approach in which she/he helps with all manner of behaviorally influenced problems in patients of all ages. As such, they often help patients with CVD, or help patients to prevent CVD, in addition to helping with regular psychiatric or other behavioral issues. In a typical 8-h day, the BHC may treat an average of 10–11 patients; however, they have the capability of seeing up to 14 or more patients. The BHC works in concert with the PCP and other PCMH team members to develop, support, and implement behavior change plans for patients.

Bryan and colleagues (2012) have demonstrated that these brief behavioral health visits can improve patients' overall functioning and well-being in as little as one to three visits, with long-term benefits (Ray-Sanneurd et al. 2012). Not only has the research with regards to the effectiveness of the PCBH model been recently demonstrated, financial benefits of implementing such a model have also been noted (Meadows et al. 2011). Mauer (2002) pointed out that the PCBH model can help address health disparities, health outcomes in high-risk patients, collaboration between PCPs and BHPs, and the expertise available in community health centers.

Even with the novelty of integrated care and PCMHs, the PCBH model appears to meet the goals of PCMH integration. As conveyed in preceding paragraphs, the PCBH model can help a primary care clinic meet the required standards of the PCMH model, including but not limited to having BHCs help increase access to care, providing individualized care plans, and aiding the timely coordination of follow-ups. Further, MI, ACT, and the 5-As have been utilized within this model of integration (Hunter et al. 2009; Robinson and Reiter 2007); thus, the PCBH model allows for the successful implementation of relevant strategies to promote healthy behaviors related to CVD in the context of PCMH.

Role of BHCs: The Trident approach In the PCBH model, BHCs take a three-pronged approach to improving the efficiency and effectiveness of PCPs. These include: (1) providing direct interventions to patients to augment the PCP's care, (2) promoting understanding of the mind–body connection and the use of basic behavioral interventions among PCMH team members, and (3) reducing the workload burden on PCPs to enable targeted use of their skills. We refer to this three-prong approach as the "Trident" approach. We have already discussed in detail how BHCs can help in providing interventions, so below we expand upon the two latter prongs. We also discuss the characteristics of effective BHCs.

"Trident" approach for the role of BHCs in PCMHs

Goals of the PCBH model	Sample of methods used
(1) Provide interventions	Provide evidence-based individual interventions that are brief (≤30 min, limited follow-up), flexible, and focused on improving quality of life. Develop group interventions that utilize multiple professionals. Transdiagnostic approaches are beneficial
(2) Promote mind–body connection and the use of behavioral strategies by the PCMH team	Give presentations at meetings, distribute educational flyers, use clinical pathways incorporating the BHC, develop shared treatment plans containing straightforward behavioral interventions
(3) Promote targeted use of PCP's skills	Follow-up with patients instead of PCP, see patients before PCP to help plan the PCP visit, take over care during a PCP visit so the PCP can move to next patient, coordinate care, complete phone visits for behavioral issues, review outside mental health records, etc.

Promoting the Mind–Body Connection and the Use of Behavioral Strategies Most PCPs receive very little in the way of training in behavioral strategies (Robinson and Reiter 2007). Most family medicine residency programs, for example, provide only 1 month of "mental health" training, most of which is focused on diagnosing psychiatric problems and providing medication treatment. PCPs entering the real clinical world often feel underprepared for managing the behavioral aspects of care (Robinson and Reiter 2007). When combined with the fast pace of primary care, the result is a PCP workforce that is largely inclined towards prescribing medications rather than lifestyle changes. Most PCPs understand and appreciate the role that behavior and lifestyle plays in preventing and managing chronic conditions, such as CVD, but feel unable to do much about it.

Thus, a goal of the PCBH model is for the BHC to promote a new care milieu in primary care, one that is more attuned to and helpful for the behavioral aspects of health. The BHC promotes this by talking at site and provider meetings about behavioral topics and distributing flyers to patients and staff on these topics. The BHC also helps develop new clinical pathways that help ensure the BHC is routinely included in care for such conditions as diabetes, chronic pain or (as highlighted in this chapter), CVD. Through the everyday arm-in-arm care that the BHC and PCP provide, the BHC also aims to influence how the PCP practices, by implementing straightforward behavioral interventions with patients that the PCP can easily reinforce. For patients with CVD, for example, the BHC might teach the patient a relaxation or mindfulness strategy, help the patient set a realistic self-management goal around diet or exercise, or work out a clear plan for how the patient will improve adherence to medications. In each case, the BHC develops and charts a goal that is then discussed with the PCP, and the PCP then reinforces the goal at his/her subsequent visit. Thus, each such encounter brings the opportunity not only to improve direct patient care but also to teach and model simple behavioral interventions for the PCP.

Promote Targeted Use of PCP Skills Lack of training is not the only impediment to the delivery of behavioral interventions by PCPs; lack of time is also a huge problem. Most PCPs have 15 min for patient visits, and on an average a patient brings three to four complaints to each visit (Kaplan et al. 1995). In addition to direct patient care, the average PCP has over three dozen urgent but unpaid tasks to attend to everyday (Baron 2010). These include tasks such as reviewing records from a previous provider, returning phone calls to patients who have a question (or calling a patient to discuss a change in treatment or a new laboratory finding), ordering labs, reviewing laboratory results, ordering referrals, reviewing referral results, and on and on. The resulting time crunch means that acute issues generally rule the day, with little time for prevention or thorough chronic disease management. Time for nuanced discussion of behavioral issues is also simply not possible much of the time. When a behavioral issue does come up in a PCP visit, the PCP is forced to either ignore it, offer a quick “solution” (typically a referral or prescription), or to extend the visit longer. Extending the visit often means sacrificing time that would otherwise be spent with subsequent patients.

The good news for clinics implementing the PCBH model is that some of these tasks that take a PCP’s time can be assumed by the BHC. For example, when a behavioral issue arises in a PCP visit, the PCP can engage the BHC, move onto his/her next patient, then circle back to complete the visit after consulting and collaborating with the BHC. Similarly, patients with a known behavioral component to their health problems might be seen by a BHC just prior to the PCP (on the same day), allowing the PCP to enter into his/her visit with a good understanding of how to help the patient with that part of care. This allows the PCP to focus during the visit on the aspects of care that most require a medical background. Patients who are high utilizers of care might also be offered alternating visits with the BHC and PCP, thereby helping to keep the PCP available for patients who most need their medical training. A BHC can also sometimes help PCPs complete tasks that are of a behavioral nature. They can return calls to patients who are in emotional distress, review records from outside mental health providers, help arrange for outside referrals, etc. The goal of all of this is to remove from the PCP’s plate the tasks that can be done just as well, perhaps even better, by the BHC, in turn freeing up the PCP to put his/her skills to the best use. That is the essence of the PCMH, and the PCBH model is designed to align perfectly with it.

We use all of these strategies in our own clinics and are always looking for new ways to help. As one example, we recently paired BHCs with PCPs for 1 week, with the goal of seeing as many of the PCP’s patients as possible. Each patient was reviewed briefly with the PCP, including a description of what (if any) behavioral intervention was needed and offered. Surveys done of the PCPs afterward included many comments about how much time was saved by this practice (as well as how this helped the PCP feel more confident and comfortable addressing behavioral issues with patients; Baker, Beachy, Bauman, Wilson and Tiernan, 2014).

Characteristics of BHCs Depending on the setting, a BHC could be a psychologist, licensed clinical social worker, or some other type of licensed mental health professional. The degree is less important than the BHC's skills, knowledge base, and even personality type. For example, Freeman (2011) recommends looking for individuals with the following personality traits: flexible, high energy level, team player, and interest in health and fitness. We agree with those recommendations and would add the following: extroverted, self-starter, and interested in larger systems issues in addition to individual patient care. To be effective, a BHC must also "know a little about a lot," in contrast to the typical specialty mental health provider who must "know a lot about a little." A BHC must be well trained in general behavioral and psychological principles to allow helping with a wide variety of problems. Obtaining training in the PCBH model via graduate coursework, workshops or trainings, and clinical supervision is also important (Funderburk et al. 2013; Robinson and Reiter 2007).

In some cases, organizations hire a psychologist to be the lead BHC due to their expertise in program development, program evaluation, and research (Funderburk et al. 2013), while a variety of disciplines might provide the clinical care. Regarding theoretical orientations, CBT, behavioral therapy, ACT, interpersonal, and even insight and psychodynamic approaches can all be utilized in this model (Funderburk et al. 2013). Regardless of the process, most important is for the BHC to be able to produce a clear set of behavioral goals for a patient to follow and for other PCMH team members to reinforce.

Case Study

The following case example will focus on the "who, what, why, and how" of the role BHCs can take in providing care for patients with CVD in PCMHs through the lens of the Trident approach.

Mr. X is a 69-year-old American citizen who moved from India several decades ago who has been dealing with type II diabetes and HBP for approximately the past 15 years. Recently, he had been meeting every month with his PCP in order to address his HBP and rising A1C scores; however, the additional visits were having little effect on either chronic condition. During a regular morning check-in (called a huddle) between the PCP, medical assistant, and BHC, the PCP identified the patient as someone who might benefit from behavioral health services. He was remembering the previous week's provider meeting which included a 5-min presentation from the BHC. The presentation had detailed specific chronic conditions the BHC could help with, such as HBP and diabetes, and how behavioral techniques (e.g., mindfulness) could augment routine medical treatment.

Later in the day, during Mr. X's visit, the PCP stepped out of the examination room to talk with the BHC, who was sitting in the provider's work area completing paperwork. The PCP asked if she would still be able to meet with the patient regarding his HBP; he was also concerned that Mr. X might be depressed and was interested in the BHC's opinion on that. Because of the morning huddle discussion, the BHC had been planning on this, and was able to see the patient right away. They walked down to the examination room, where the PCP briefly introduced the BHC. He said, "Mr. X, this is the team member of mine that I told you about. I think she will help me find some ways to help you better." Mr. X thanked the PCP, who then moved on to his following patients.

After taking a minute to make sure Mr. X understood the service she would be providing, the BHC started in with gathering history about Mr. X's current situation. He disclosed he had been struggling with life stressors recently, including the loss of his wife almost 2 years ago. He also stated most of his family was in his home country of India and that he desperately missed them. The BHC empathized and normalized his current distress while she listened. She also learned that despite his grief, Mr. X was in many ways functioning reasonably well. He volunteered at a senior center each week, enjoyed helping his family around the home when he felt able, and had a few friends he visited with most weeks. He even made it to temple on a regular basis. He was eating regularly (despite often making unhealthy choices), and he had some mild problems with sleep but nothing too bothersome for him. But he did admit that since his wife passed he often questioned the point of all of this. He often would think of her and feel sad, and this sapped his interest in taking care of himself.

Yet, as the BHC pointed out, Mr. X did come to his medical appointments. He had been coming monthly, as his PCP had wanted. "Yes," he said, "I suppose it's important." The BHC inquired about why Mr. X felt that it was important for him to manage his chronic conditions. Laughing, he stated, "Well, my family of course!" The BHC asked him to explain that more, and it became clear that family was of utmost importance to Mr. X. His affect brightened when he talked about them and his answers became longer than answers to other questions she had asked. The BHC discussed with Mr. X how he can utilize his value of family to inspire adherence to the medication and behavioral change regimen prescribed by his doctor. For example, when Mr. X is at a "choice point" in whether to make an unhealthy or healthy behavior (e.g., what to eat for dinner), he can engage with his value of family, which can prompt him to make the healthy decision. The BHC also provided a brief psychoeducation piece on behaviors related to HBP (e.g., stress reduction, increasing exercise, etc.), and taught a mindful deep breathing exercise to use daily in addition to his medication. She also provided handouts to Mr. X regarding the information (i.e., values, mindfulness and behaviors related to HBP) discussed during the brief 15 min visit.

After the visit, but before Mr. X had left, the BHC reengaged with the PCP and briefly explained the specific interventions provided. She did not think Mr. X was depressed, at least not to the extent that medications seemed warranted, and recommended that for now they try to support him with the self-management tools discussed today. The PCP, who was not feeling enthusiastic about adding yet another medication anyway, liked this plan. They further agreed to stagger their follow-up visits, so that Mr. X would see the BHC in 2 weeks, and the PCP in a month (their usual plan). This would allow for more frequent visits with Mr. X, without adding to the PCP's schedule. The PCP re-entered the examination room and summarized the plan for Mr. X. He reminded him to practice the mindfulness exercise, which he noted many patients benefit from, and encouraged Mr. X to consider his value of family to help improve treatment adherence. Mr. X said he would try. The BHC documented the treatment plan in the shared electronic medical record, so both BHC and PCP would remember the details of their plan at follow-up.

Mr. X's case demonstrates all three prongs of the Trident. For the first prong, the BHC augmented the PCP's care by providing behavioral interventions focused on improving his HBP. Specifically, she taught a mindfulness technique and helped Mr. X clarify his values. Both are transdiagnostic strategies commonly used by FACT clinicians (Strosahl et al. 2012). For the second prong, the BHC's earlier presentation on how behaviors influence chronic conditions, and how BHCs could be helpful, clearly helped pave the way for her involvement with Mr. X. She had helped the PCMH team to consider this aspect of care that had previously been missing. Her brief interaction with the PCP after the visit also helped the PCP learn a bit more about behavioral interventions, and modeled for him how to talk about such interventions with patients. The third prong was evident in a few ways. For one, the morning huddle with the PCP helped the PCP strategize a bit for his visit with Mr. X, knowing he could focus on the medical aspects of Mr. X's care because he intended to obtain the BHC's help with psychosocial aspects. During the visit, he was able to move on to other patients and give them his full attention, while the BHC did her work with Mr. X. The follow-up plan also provided a way for Mr. X to obtain more support without adding to the workload of the PCP. Finally, the BHC's assessment probably helped the PCP avoid use of an antidepressant medication, which would have added to the care the PCP needed to manage.

Summary

Due to polices and initiatives that push for integrated care, such as PCMH, it is an exciting time for mental health professionals who desire to work on collaborative and medical teams. As we have discussed during this chapter, chronic conditions, such as CVD, are an enormous burden on medical systems and providers, and BHPs have a tremendous opportunity to ease this burden. Working within integrated models, and especially utilizing the Trident approach via the PCBH model, BHCs can begin making significant ripples throughout the medical system, with the ultimate goal of evolving patient care and making primary health care more efficient and effective.

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Chapter 12
Integrating Behavioral Health in the Pediatric Medical Home: Expanding Clinical Roles to Improve Access and Outcomes

Roy Grant

Introduction

The medical home was proposed by the American Academy of Pediatrics in 1967 as a model of care for children with special health-care needs—children with chronic health conditions who required care from pediatric subspecialists and mental health and child development professionals. In the medical home model, the primary care provider (PCP) is responsible for coordination of services from within the health care system and from community-based agencies including schools, to ensure that the child's complex needs are comprehensively met. As the medical home model evolved, there was an increasing focus on primary care management of chronic health conditions like diabetes, cardiovascular disease, and asthma. The emphasis remained on providing care that is comprehensive, coordinated, continuous, and patient centered. In pediatrics, this means care that meets the needs of the child and family. Because services from diverse providers are integral to the model, it has also become known as the health home or health care home. Variations have been developed, including a mental health home in which the mental health professional is the care coordinator for individuals with a primary psychiatric diagnosis (Grant and Greene 2012).

The notion of the enhanced medical home was developed as a model to provide optimal care for vulnerable children, defined as urban and rural poor and children in adverse circumstances including homelessness and foster care. These children often present with complex health, psychosocial, and mental health needs. In the enhanced medical home, efforts are made to incorporate specialist care at the primary care site to facilitate access, with an emphasis on colocating mental health services (Brito et al. 2008).

Another factor that has increased interest in the integrated behavioral—primary care model is the longstanding shortage of child and adolescent psychiatrists and

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care*,
DOI 10.1007/978-3-319-19036-5_12

other mental health professionals with pediatric specialization. While there is considerable variation in estimates of the prevalence of childhood mental health and developmental conditions, it is clear that the need for services far exceeds available treatment resources, especially in low-income urban and rural communities where needs are greatest. There is a greater level of need than currently reflected in the data, because mental health conditions may not be identified in a timely fashion, if at all. This undermines early intervention and optimal treatment success, and places the child at risk of adverse outcomes. One solution to this problem has been to expand role of the PCP.

This chapter reviews the literature on prevalence, risk factors, access to mental health and child development services, and the expanding role of pediatric PCPs in identifying, referring, and treating children and youth with behavioral health problems. Several models of integrated pediatric primary care and mental health services are discussed.

Prevalence of Pediatric Mental Health Problems

The most commonly cited prevalence figure for child and adolescent mental health problems is that 20 %, one child in five, meets criteria for a psychiatric disorder in any given year, and that only 20–25 % receive needed treatment. These data were presented in the comprehensive mental health report to the nation by then Surgeon General David Satcher, which was published in 1999 and is considered a landmark in the literature for calling attention to mental health care as a public health concern (U.S. Department of Health and Human Services 1999). The report relied on data from the Methodology for Epidemiology of Mental Disorders in Children and Adolescents (MECA) Study. In this study, interviewers administered a computer version of the Diagnostic Interview Schedule for Children (DISC) to the children and youth, and they conducted structured interviews with parents and caregivers for information on demographics, risk factors, and current functioning. Limitations to the MECA study included the age range, with the sample including only children and youth aged 9–17 years old, and demographics, with an underrepresentation of lower income and racial-ethnic minority families (Lahey et al. 1996). Poverty and minority populations were highlighted in the Surgeon General's report as having higher prevalence of mental health problems than the general population, so their underrepresentation affected prevalence rates. With older adolescents and younger children also excluded, there are limitations to the degree to which this prevalence figure may be generalized.

Methodological issues also make it difficult to establish a reliable pediatric prevalence figure. Some prevalence data reflect parent report of a prior diagnosis while others reflect parent report of current symptoms. Some studies of prevalence among adolescents are based on self-report from the youth who participate, and some are based on results of a standardized screening administered to identify symptoms consistent with a psychiatric diagnosis. Prevalence data that rely on the report of a prior diagnosis necessarily exclude children who did not have access to a diagnostic setting.

Despite these methodological issues, there is some consistency to the epidemiologic findings. Costello et al. (2005) reviewed prevalence studies over the preceding decade and concluded that, despite the wide range of findings, 12 % of children within a 12-month period had a mental health disorder of sufficient severity to compromise current functioning. This finding is similar to Satcher's report that 11 % of children who met diagnostic criteria also had a significant functional impairment.

In 2013, Perrou et al. synthesized child mental health surveillance data for 2005–2011 for the Centers for Disease Control and Prevention (CDC). These data were derived from federal household surveys, including the National Health Interview Survey (NHIS), which used in-person interviews of a nationally representative sample of ~ 7000, and the National Survey of Children's Health (NSCH), a random-digit-dial telephone survey with a nationally representative sample of ~ 78,000. Both surveys relied on parent report and had 17 years as the upper limit for included children and youth. Three additional surveys were cited for data for adolescents 12–17. Two of these surveys used a self-report methodology and the third used a standardized depression-screening tool.

Together, these data for diagnosed mental disorders showed a prevalence rate among children 3–17 years old of 13–20 % in any given year. Trend data showed a steady increase in prevalence over time. The most common diagnosis was attention deficit hyperactivity disorder (ADHD) at 6.8 %. Among adolescents, "current" depression (symptoms within the past 12 months) ranged in the three surveys from 6.7 % (screening) to 8.1 % (reported), with a "lifetime" prevalence (ever diagnosed) of 12.8 %, and 4.7 % had a substance abuse disorder. For children 3–17, there were notable disparities based on household income, with highest rates for children in families with incomes below the federal poverty level (FPL), followed by < 200 % FPL, and lowest in families with incomes > 200 % FPL. Economic disparities were less evident for adolescent depression. In an infographic available at the CDC website (CDC, n.d.), prevalence data were translated into numbers of children affected: ADHD, 4.2 million; behavior or conduct disorders, 2.2 million; depression, 1.3 million; and substance abuse disorders, 2.2 million. Data subsequent to the Surgeon General's report reinforced its key findings regarding the high prevalence of pediatric mental health conditions and the degree to which children do not receive needed services (Koppelman 2004).

Among adolescents, the most common causes of mortality are psychosocial. They are motor vehicle accidents, other accidental injuries, suicide, and homicide, making adolescent mental health and psychosocial problems a major public health issue (Eaton et al. 2012). Jackson and Lurie (2006) reported a lifetime adolescent major depressive disorder of from 20–25 % and a current prevalence of from 3 to 8 %. Rates for females were about twice those of males. These data were consistent with prior school-based surveillance in grades 6, 8, and 10 (Saluja et al. 2004).

Data from the 2013 CDC Youth Risk Behavior Surveillance System (YRBSS) survey show that 8 % of high school students had attempted suicide in the preceding 12 months (Kann et al. 2014). Using a definition of "major depressive episode

(MDE)” as 2 weeks or longer experiencing depression symptoms, investigators at the National Institute for Health Care Management (NIHCM 2010), an insurance membership organization, reported a prevalence among adolescents of 8.2 % in the preceding 12 months. Only 38.9 % received any treatment for an MDE. Adolescents with a self-perceived need for mental health treatment who do not get intervention are at high risk for substance abuse disorders (Mason et al. 2013).

Depression is less commonly diagnosed before adolescence. School age children with social–emotional problems are more frequently diagnosed with an externalizing behavior disorder, including ADHD and oppositional-defiant disorder or disruptive behavior disorder. The CDC has previously reported higher rates of diagnosed ADHD, with an increasing trend over 5 years (2003–2007) from 7.8 to 9.5 %. This raised the concern that ADHD, a diagnosis largely based on observed behavioral signs and symptoms, may be overdiagnosed (Batstra and Frances 2012). Shonkoff et al. (2008) estimated the prevalence of serious emotional disturbance in children 2–5 years old to be approximately 12 %. They emphasized that social–emotional problems manifest differently in young children than in older children, adolescents, or adults. Early social–emotional problems often interfere with typical developmental trajectories, with presentations characterized by delayed speech–language and possibly cognitive developmental functioning. These developmental problems are more likely to be identified than any underlying social–emotional problems. Mood, anxiety, and stress disorders may be comorbid with and potentially masked by disruptive and oppositional behavior, which is the most common reason for early childhood mental health referrals. Early-onset behavior disorders are associated with later academic deficits and psychiatric problems including depression and substance abuse (Shepard and Dickstein 2009).

To summarize, it is difficult to establish a reliable estimate of the prevalence of child and adolescent mental health problems because of differences among the studies in methodology and age inclusion criteria. Nonetheless, the data suggest that from 12 to 20 % of children and youth are likely to require mental health intervention during any given year, that concern about possible mental health problems should begin in early childhood, and that the majority of children and adolescents in need of mental health services do not receive them.

Autism Spectrum Disorders

Until the introduction of the fifth version of the American Psychiatric Association’s *Diagnostic and Statistical Manual* (DSM-5) in 2013, the diagnostic category autism spectrum disorders (ASD) included several distinct diagnostic entities, predominantly autism disorder, Asperger’s syndrome, and pervasive developmental disorder not otherwise specified (PDD-NOS). These conditions vary in symptomatology and severity, ranging from gaze aversion, severe speech–language delay, and repetitive, self-stimulatory, and sometimes self-injurious behavior characteristic of severe autism to the higher language and social functioning characteristic of Asperger’s syndrome (McPartland and Volkmar 2012).

The CDC conducts ongoing ASD surveillance for children diagnosed at 8 years of age using data from its Autism and Developmental Disabilities Monitoring Network. As of this writing, the most recent data year was 2010 (CDC, 2014). Prevalence data for that year confirmed a steady and dramatic upward trend, with a rate of 14.7 per 1000 or one child in 68 diagnosed with ASD. The authors of the 2014 CDC report emphasized that because only 14 sites in 11 states were included in the Network, and there were notable geographic and sociodemographic variations in prevalence, the data cannot be generalized to all 8-year-olds in the USA. Nonetheless, this generalization was often made in news media. A report in *USA Today* online is representative: Under a headline "Autism rate soars" Weintraub (2014) wrote that the CDC's findings mean that "virtually every grade in every elementary school has at least one child with autism—a seemingly astonishing rise for a condition that was nearly unheard of a generation ago." In less than 6 months, the article had nearly 10,000 "connects," 686 tweets, and 156 comments.

In the peer-reviewed literature, there was considerable skepticism about the accuracy of the CDC data. In an editorial in the journal *Autism,* Mandell and Lecavelier (2014) noted the increase in successive surveillance reports from 1 child per 150 in 2002, to 1 per 110 in 2004–2006, and 1 per 88 in 2008. They questioned the validity of these data because, among other reasons, the surveillance methodology did not account for the ambiguities in the ASD diagnosis.

There has been ongoing concern that factors other than incidence of ASD had an impact on the increases reflected in these data, including changing diagnostic criteria, improved early identification, and different methodologies to make diagnoses and to capture data (Rice et al. 2012). Bishop et al. (2008) applied current ASD diagnostic criteria to a small sample of adolescents and adults with previously established diagnoses of developmental language disorder. A substantial percentage would have met current ASD criteria but did not at the time they were diagnosed. King and Bearman (2008) retrospectively applied current autism diagnostic criteria to a large cohort of children who had previously been diagnosed with mental retardation (now termed intellectual disability). They found that a substantial percentage would have met current ASD criteria and concluded that the change in criteria for individuals with intellectual disability accounted for more than one fourth, 26.4 %, of autism cases in California from 1997 to 2005.

The American Academy of Pediatrics (AAP) issued guidance in 2006 recommending regular developmental screening in primary care that included use of a standardized autism-screening tool. Sufficient time has elapsed for this recommendation to have had an impact on primary care identification of ASD and therefore an increase in the number of children diagnosed. Herz-Picchiotto and Delwiche (2009) analyzed diagnosed autism trends in California between 1990 and 2006 by birth cohort. They found that early identification accounted for 12 % of the increased prevalence during that period, while changes in diagnostic criteria to include children with milder symptoms accounted for 54 % of the change.

Especially in the absence of a neurobiological basis for ASD, there has also been an absence of consensus on the etiology of autism (Lai et al. 2014). In a population-based study in Sweden, Sanden et al. (2014) found a heightened risk of being diagnosed with autism for children with a family member already diagnosed. This would be consistent with a genetic component to the condition. LoParo and Waldman (2014) conducted a meta-analysis of studies of the possible link of the oxytocin receptor gene (OXTR) and autism, and concluded that there is evidence of significant association.

Other investigators explored the role of environmental toxic exposures including to air pollutants and heavy metals. Rossignol et al. (2014) conducted a systematic review of these studies and found evidence of an association between toxic exposures and autism risk. Investigators have also explored the possible role of parental age on autism. Durkin et al. (2008) analyzed data for all children of diagnosed autism in the CDC surveillance network who were born in 1994. They found triple the risk of autism diagnosis for children born to older parents, defined as >35 years for the mother and >40 years for the father. King et al. (2009), using data for children diagnosed with autism in California, also found an increased risk of autism based on maternal or paternal age, but to a lesser degree.

Other approaches to autism etiology include examination of brain architecture. In an exploratory study with a small sample, Stoner et al. (2014) found evidence of atypical brain development in children with autism that might begin in utero. In a twin study in which one twin only was diagnosed with ASD, Froehlich-Santino et al. (2014) found an association between the diagnosed condition and perinatal respiratory distress. Gallioretti et al. (2014) suggested an association between the increased prevalence of autism and the increases in induced labor and cesarean section births. In common with virtually all of the studies reviewed, the authors concluded that further research is needed.

It is difficult not to conclude from the literature that the etiology of autism is not yet established. In this absence of certainty, the notion that autism is caused by childhood immunizations, specifically the mercury adjuvant to the measles–mumps–rubella (MMR) vaccine, has been promulgated. Its origins are in the now discredited study by Wakefield, et al. published in 1999 and retracted in 2010 by *The Lancet*. Wakefield et al. concluded that the onset of autism symptoms was coincident with receipt of MMR vaccination. This article was retracted because information became available questioning the validity of Wakefield's data and suggesting undisclosed financial conflict of interest.

A critical reading of the Wakefield article reveals fatal methodological flaws: a small, unrepresentative sample and a retrospective methodology that could only detect the point in time when symptoms were identified but not their time of onset. The alleged association between vaccination and autism has been debunked by, among others, the Institute of Medicine (2004). It has been disproved in a population-based Canadian study which found no decline in autism prevalence subsequent to the removal of mercury adjuvant from vaccines (Fombonne et al. 2006). Nonetheless, with celebrity champions underscoring the fact that parents of children with autism believe it to be associated with vaccination, the notion remains firmly held. This is an instance of the desire for certainty outweighing any reliance on evidence. Concern about vaccine safety has become sufficiently widespread to have had serious public health consequences, reduced herd immunity and outbreaks of measles and other vaccine-preventable diseases (Camargo and Grant 2014).

It is in this context of controversy about the prevalence and causes of autism that the ASD diagnostic criteria in the DSM-5 were dramatically changed from prior editions of the manual. One major change was the exclusion of PDD-NOS as a spectrum disorder and reclassification as a "social–communication" disorder. Multiple investigators have concluded that the new diagnostic criteria will exclude many children who had met previous criteria, apparently reducing ASD prevalence. The change will not only impact epidemiology. There is reason to expect that the new criteria will also have a negative impact on access to services. The reclassification of PDD-NOS, for example, makes it more likely that affected children will receive services for communication disorder but not for social and behavioral problems (Grant and Nozyce 2013). Prior to this change, access to services for children with ASD was already problematic because of the variability among the states in their definitions and eligibility standards for services in programs funded through the Individuals with Disabilities Education Act (IDEA), the Early Intervention (EI) Program for infants and toddlers birth to 35 months, and preschool and school-age special education programs (Stahmer and Mandell 2007; Pennington et al. 2014).

Psychosocial Stress

A comprehensive definition of childhood mental health also includes psychosocial problems. These include exposure to domestic violence (DV), maternal depression, foster care, homelessness, and food insecurity (Brito et al. 2008). Wildman et al. (2004) estimated that 20% of children seen in pediatric primary care have significant psychosocial stress exposures, but only 2% receive mental health intervention. The majority receive care in by their PCP or none at all, even if the problem rises to the level of a diagnosed psychiatric condition. Psychosocial problems are most prevalent among children in low-income families, where prevalence of maternal depression, DV, and child maltreatment are higher (Garg et al. 2007).

There is an established link between stress exposures, especially during the first 3 years of life, and later development of developmental and mental health problems. Stress exposures are also associated with greater incidence of physical illness including chronic health conditions. This is especially true of "toxic stress," defined as prolonged exposure to environmental or psychosocial adversity without the mediating involvement of an adult to ameliorate the impact of the stressor(s) (Shonkoff 2010). Some potential toxic stressors may be interrelated, for example, DV, maternal depression, and homelessness, with the child exposed to multiple stressors, each of which is independently a risk factor for poor health and mental health outcomes. There is an additive nature to risk exposures, as is clear from results of the Adverse Childhood Experiences (ACE) Study. A single adverse event or exposure nearly doubles the child's risk of poor health, which nearly triples for four or more exposures (Flaherty et al. 2006). The CDC, in its online summary of the ACE study results, note that early childhood adversities are associated with higher rates of psychiatric disorders including depression, suicide, substance abuse, and risk of intimate partner violence.

Maternal Depression

Maternal depression is associated with an increased risk for the child of developing psychopathology, including later diagnosed depression. Estimates of the degree of increase range from two to five times that of a child who is not raised by a mother with depression (Sellers et al. 2013). Because of the impact of depression on parenting, children exposed to maternal depression also may be exposed to other risk factors, including DV and limited parental support (Barker et al. 2012). The absence of a supportive parent to mediate stress exposures heightens the risk that these will be experienced by the child as toxic stress.

In a 1990 literature review, Downey and Coyne reported a study that found that 7 % of children of depressed mothers met adult diagnostic criteria for depression while 25 % presented symptoms of depression but did not meet diagnostic criteria. Similar high risk for depression was confirmed in other controlled studies that included school-age children and young adults. The rate of diagnosed major depressive disorder was six times that of children not exposed to maternal depression. Maternal depression has also identified as a significant factor in the development of conduct disorders in low-income school-aged children (Shaw et al. 2003; Chronis et al. 2007).

Exposure to DV

Osofsky (2003) summarized the many methodological inconsistencies that make it difficult to ascertain the prevalence of DV, also referred to as intimate partner violence (IPV). These include different thresholds for the severity of an incident to be counted as DV; different surveillance methods including monitoring reported DV incidents, direct report on surveys or interviews; and the underreporting of DV incidents. The latter has been consistent over time and suggests that regardless of the data collection method, the prevalence of DV will be higher than indicated by the data. The National Institute of Justice Violence Against Women Survey found that one woman in four, approximately 25 %, reported having been raped or assaulted by an intimate partner (Tjaden and Thoennes 2000).

Fantuzzo and Mohr (1999) discussed the differences in methodology among various studies that attempted to ascertain the number of children exposed to DV, and concluded that an accurate estimate was not available. Citing a statistic that more than 3 million children are exposed annually, Osofsky noted that the data excluded children less than 3 years of age. More recent estimates range as high as 10 million children exposed annually; however, the difference may at least partly reflect more inclusive age criteria (Blair-Merritt et al. 2006). The impact of DV exposure on the child varies with age and developmental status, and includes developmental delays for young children, school problems (difficulty concentrating, academic lags and behavior problems), and heightened risk of psychiatric disorders including mood and anxiety disorders (Fantuzzo and Mohr 1999).

Child Maltreatment

DV is also associated with child abuse and neglect, with studies showing that up to 55 % of women involved in child abuse cases reported a history of DV (English et al. 2003). Children who have been physically abused are at high risk for a wide range of psychiatric conditions including depression, suicide, and adolescent risk behavior (Norman et al. 2012). Sexual abuse is additionally associated with traumatic stress reactions including post-traumatic stress disorder (PTSD; Vloet et al. 2014).

Many studies of the impact of maltreatment were done of children in the foster care system, with results attributed to foster placement rather than the circumstances that led to foster placement. For the more than 600,000 children in foster care, and especially young children, there are notable health consequences including higher risk of developing a chronic condition (Jee et al. 2006). The majority of children in foster care are of preschool age, and as many as 42 % of toddlers and 68 % of preschool aged children present with developmental and/or behavioral problems that require intervention (Stahmer et al. 2005). For children 3–14 years old in the foster care system, national survey data show that, based on screening with the Child Behavior Checklist (CBCL) approximately 48 % had scores in the clinically significant range indicating a need for further assessment and possible intervention. Of these children, less than 12 % received services (Burns et al. 2004). In adolescence, a history of abuse was associated with a range of psychiatric disorders, suicide attempts, and risk behavior including self-injurious behavior (Auerbach et al. 2014). By adulthood, it was associated with higher rates of diagnosed ADHD, PTSD, and bipolar disorder, among other psychiatric conditions (Sugaya et al. 2012).

Homelessness and Poverty

Studies have differed over time in reporting the impact of homelessness on child mental health. Studies of children in homeless family shelters during the 1980s, when family homelessness increased dramatically and was viewed as a national problem, showed significantly higher rates of developmental delay among preschool aged children and of behavior and mood disorders among older children. In a retrospective chart review study of homeless children who received mobile pediatric care linked to office-based mental health services, Grant et al. (2007) found that 30 % of children 12 months to 19 years of age had a diagnosed developmental or psychiatric condition. This included 19 % of young children less than 36 months old; 41 % of 3 and 4 year olds; 34 % of 5–11 year olds, and 24 % of adolescents 12–19 years old. For younger children, diagnoses tended to be of developmental and learning problems; for older children and youth diagnoses of psychiatric disorders were more prevalent. These included depression, ADHD and PTSD.

These rates of developmental and psychiatric conditions, based on data from 2004, were higher than those for housed peers of similar age. Subsequent studies of homeless children revealed a consistent narrowing of the gap between homeless and housed low-income children, reflecting the degree to which homelessness has become a feature of life for families living in poverty. Both homeless and housed children in low-income families continue to have higher prevalence of developmental and psychiatric disorders than do children in more affluent families (Grant et al. 2013). These data indicate the degree to which poverty can be viewed as a stressor, or more accurately a proxy for multiple stressors that are disproportionately found in poor neighborhoods and households (Brooks-Gunn and Duncan 1997).

The Annie E. Casey Foundation Kids Count data for 2014 show that nearly one child in four in the USA, 23 %, lives in a household with income at or below 100 % FPL. The number of children living in “deep poverty” or “extreme poverty,” defined as living in a household with an income at or below 50 % FPL, has steadily increased in the first decade after welfare reform legislation was passed (Annie E. Casey Foundation Kids Count Data Center 2014). By 2005, an estimated 2.2 million children lived in deep poverty (Sherman and Trisi 2014). By 2011, after the recession of 2009, this had increased to 2.8 million children. Household income for a family in extreme poverty is about US $ 2 per person per day (Shaefer and Edin 2012). As a result, families in extreme poverty, and poor families more generally, are at risk for homelessness and for food insecurity, defined as not having sufficient money for food or having concern about running out of money for food. Food insecurity is associated with a heightened risk for maternal depression and anxiety disorder, and of behavior problems as well as health and nutrition problems in children (Whitaker et al. 2006).

Developmental Delays and Disabilities

Prevalence data for childhood developmental delay are also inconsistent. One reason is lack of consensus differentiating the terms “developmental delay” and “developmental disability.” The terms are often used interchangeably, including throughout the IDEA legislation. Eligibility for EI (IDEA Part C) is based on degree of developmental delay determined by assessing the disparity between a child’s functional age (FA) and chronological age (CA). EI eligibility is not contingent upon the presence of a diagnosed condition that would constitute a developmental disability, such as cerebral palsy, Down syndrome, or sensorineural hearing loss, although eligibility may also be established by the presence of a diagnosed condition with a high probability of developmental delay. States have the option to set their own threshold for EI eligibility (percentage disparity between FA and CA), and a child eligible for EI in one state may not be eligible in another. States with the narrowest eligibility criteria (typically 50 % delayed) serve significantly smaller percentages of age-eligible population than do states with less stringent criteria (Grant and Isakson 2013).

A national study of the prevalence of several specific developmental disabilities done in the early 1990s found a population prevalence rate of 3 %, and this figure was initially used as a target for participation of age-eligible infants and toddlers in the federal monitoring of state EI programs. While the EI program has grown consistently over time, the national participation rate has remained less than 3 % since the program became operational in 1994. Prevalence estimates for developmental delay range from 11 to 20 % and strongly suggest that there is a large population of infants and toddlers in need that are not receiving EI services. Since the program's inception, EI has supplanted the health care system as the primary service delivery system for young children with developmental delays (Grant and Isakson 2013; Grant 2005).

Additional factors that affect the accuracy of prevalence data for developmental delay are different data collection methods (parent report of a prior diagnosis, parent report of current functioning, or screening directly administered with the child). Most prevalence data are based on parent report on federal household surveys, and show a steady increase. In 2008, 15 % of children 3–17 years old had a developmental disability (diagnosed condition), an increase from 12.8 % in 1997. These data were based on parent report on the NHIS (Boyle et al. 2011). Houtrow et al. (2014) reported a subsequent increase, with an estimated 6 million children reported with a disability in 2010–2011. For the first time, NHIS data showed a disproportionate increase in disability among children in higher income families (> 400 % FPL). Data typically show a heightened risk for developmental delay and disability among children born at low birth weight and children living in low-income families, as reported by Simon et al. (2013) using NSCH data and as reflected in the National Early Intervention Longitudinal Study (Hebbeler et al. 2007) profile of infants and toddlers in the EI program.

Early intervention for developmental delay is predicted to be optimally effective because the increased brain plasticity during the first 36 months of life facilitates developmental progress in response to treatment (Shonkoff et al. 2009). Early intervention for developmental delay may be a primary preventive factor with respect to later development of social-emotional and mental health problems. Despite recommendations from the AAP for regular developmental screening and surveillance, Bethell et al. (2011) found that nationally, based on NCHS data, only 19.5 % of children received a parent completed developmental screening like the Ages and Stages Questionnaire in primary care. Talmi et al. (2014) subsequently found a higher screening rate, but that only half of the infants and toddlers who screened positive for developmental delay were referred for intervention.

The most frequently identified developmental delay in childhood is in speech-language functioning (IDEA online data center, 2014). Early receptive language deficits are associated with childhood behavior problems and with incidence of adult psychiatric disorders (Schoon et al. 2010). Horwitz et al. (2003) found rates of expressive language delay of 13.5 % for toddlers 18–23 months old and of 17.5 % for children 30–36 months old. Rates were highest experiencing poverty and high degrees of parental stress. Early expressive language delay was associated with social deficits and behavior problems.

Access to Pediatric Mental Health Services

In many studies of the prevalence of child mental health conditions, the authors also note the high level of unmet need for intervention. Grant and Brito (2010) reviewed this literature and found that, while there is a wide range of estimates of unmet need based on different definitions, criteria, and data collection methods, it was clear that most children with psychiatric disorders and psychosocial problems go unserved. Roll et al. (2013) analyzed NHIS data over time to ascertain the level of mental health service need that could be anticipated as the Affordable Care Act of 2010 (ACA) is implemented, with the expectation that the health reform legislation will increase the number of primary care patients. Using data from 1997–2010 for children and adults, they found a steady increase in individuals with unmet mental health care needs. Multivariate logistic analysis showed that among the factors for higher risk of unmet needs was childhood, age 2–17 years.

Kataoka et al. (2002) analyzed NHIS data and found that each year 80 % of children 6–17 years old in need of mental health services do not receive them. Among preschool age children (3–5 years), 3 % or fewer get mental health intervention. Le Cook et al. (2013) analyzed Medical Expenditure Panel Survey (MEPS) data for 2002–2007 and found significant racial-ethnic disparities in access and utilization of mental health services, with white children having twice the likelihood of initiating mental health care as African-American and Hispanic children. In their 2012 analysis of data from the National Comorbidity Study, Husky et al. (2012) found that 67 % of adolescents with suicidal ideation and 54 % with a suicide plan did not have any mental health visit in the preceding 12 months.

The criterion for unmet mental health need presupposes that a need for services has been identified. The actual rate of children with unmet mental health needs is difficult to ascertain because of under-identification of mental health problems. Assuming adequate identification and access, at least 20 % of children and youth in low-income families should receive mental health services during a year. Howell and Teich (2008) analyzed national Medicaid claims data and found that only 9 % of children and youth from birth to 21 years were treated for a psychiatric disorder in the preceding year. More than half of those with a psychiatric diagnosis were treated with psychotropic medication. The investigators further analyzed these data by state and found a range from 5 to 17 %, with states in the south having lowest mental health utilization. These results were consistent with a prior analysis of geographic variations in child mental health utilization by Sturm et al. (2003). They found that variations in child mental health utilization were not related to variations in need for services, but rather to the mental health system of care including workforce and applicable policies within the state.

Workforce

Strong concern about the inadequate supply of child psychiatrists and other pediatric mental health professionals, and the impact of workforce shortages of child mental health access, were apparent in the 1999 Surgeon General's report. These concerns were reiterated in then President Bush's New Freedom Commission on Mental Health report (2003). There are provisions in the ACA that may lead to an increase in qualified mental health personnel. In 2013, legislation known as the Pediatric Subspecialty and Mental Health Reauthorization Act (HR 1827) was introduced, with the strong support of the AAP and the American Academy of Child and Adolescent Psychiatry (AACAP). It includes among other provisions loan forgiveness to encourage pediatric specialization. As of this writing in mid-2014, however, the shortage of appropriately trained child mental health professionals remains critical.

Thomas et al. (2009) analyzed data from the Census Bureau and multiple federal household surveys to examine mental health workforce capacity at the county level. Their data analysis distinguished between mental health professionals who can write prescriptions, typically psychiatrists and other physicians, and non-prescribers, typically non-medically trained mental health professionals. Nearly every county, 94 %, had an inadequate workforce in this analysis.

Shortages for pediatric mental health professionals are greatest, because of the additional training required for this specialization. Nationally, the AACAP (2013) reports that there are only 8300 child and adolescent psychiatrists, including those that are semi-retired, leaving a workforce deficiency of approximately 30,000. These figures have remained consistent over the past decade. While the literature has emphasized the shortage in child psychiatrists, there is also an insufficient supply of child psychologists, clinical social workers and other pediatric mental health professionals (Huang et al. 2004). These problems are exacerbated by the geographic mal-distribution of child mental health professionals. Low-income inner city and rural areas are especially underserved, and these are areas where epidemiological data show service needs to be greatest (Kim 2003).

The US Health Resources and Services Administration (HRSA) designates counties as mental health professional shortage areas (mental health HPSA) based on a low ratio of available mental health providers to population and on population risk characteristics, principally poverty. The designation takes into account the full range of mental health professionals including psychiatrists, psychologists, clinical social workers, licensed counselors, and psychiatric nurses. Bird et al. (2001) reported that 87 % of mental health HPSAs are in rural (non-metro) counties. The negative impact of workforce shortages in rural areas is exacerbated by long travel distances to get to mental health service sites. This underscores the importance of available transportation in facilitating health care access (Soares et al. 2013).

Psychotropic Medications

With so few child and adolescent mental health professionals available and increasing levels of need, there has been a trend towards reliance on psychotropic medication as a first line of treatment. This has been associated with limited access to non-medically trained mental health professionals such as psychologists and clinical social workers to treat mental health conditions; reimbursement issues, with long-term psychodynamic treatment often not supported in insurance plans; and the way these pharmaceutical products are advertised and marketed (Steinberg-Epstein and Book 2011; Chubinsky and Rappaport 2006).

By 1996, the most commonly prescribed psychotropics in pediatrics were stimulants for ADHD in children 6–14 years old and anti-depressants for adolescents 15–18 years old. Their rates of use showed a marked increase since 1987 (Olfson et al. 2002). Subsequently there has been an increase in the use of atypical antipsychotics with children, especially for non-psychotic behavioral conditions. Often this usage is "off-label;" that is, outside the range of uses for age and condition that were known to be safe when the drug came to market (Zito and Safer 2005). A Cochrane Collaborative review of studies of the efficacy of atypical antipsychotics for conduct disorder and oppositional-defiant disorder showed some short-term gains in behavior management but with the side effect of significant weight gain. No efficacy studies were found for the use of these medications with children less than 5 years old (Loy et al. 2012). Nonetheless, the rates at which prescriptions are written for young children have increased dramatically as rates for school-age children stabilized. The most common psychotropics for the younger age group are stimulants, clonidine, selective serotonin reuptake inhibitors (SSRIs), and atypical antipsychotics, sometimes in combination. These drugs are not Food and Drug Administration (FDA) approved for use with young children. While their short-term side effects appear to be mild, there have not been sufficient studies to predict their impact on the developing brain or their long-term side effects (Fanton and Gleason 2009; Rappley 2006).

Psychotropic medications are used most frequently with vulnerable pediatric populations. Data from the 2011–2012 NCHS survey show that 7.5 % of children and youth 6–17 years old used a prescribed psychotropic medication during the preceding 6 months. Rates of usage were highest (9.9 %) for children in low-income households insured by Medicaid of Children's Health Insurance Program (CHIP; Howie et al. 2014). The Government Accountability Office (GAO) issued a report expressing concern about the overprescription of psychotropics for children in foster care. They focused on five states (Florida, Texas, Massachusetts, Michigan, and Oregon) and found that from 19.7 to 39.1 % of children in foster care birth to 17 years old were prescribed psychotropic medication. Rates were 2.5–3 times higher than for children not in foster care (Kutz 2011).

Integrating Mental Health and Pediatric Primary Care Services

In 2004, the American Academy of Child and Adolescent Psychiatry and the AAP issued a joint position paper endorsing integrated behavioral health–primary care services (American Academy of Child and Adolescent Psychiatry Committee on Health Care Access and Economics [and American Academy of Pediatrics] 2004). They cited data that 20 % of children and youth have a mental health disorder with only 20–25 % treated, and described the continuing shortage of pediatric mental health professionals in making the case for integrated care. The goals of the model are improved access to mental health services and better coordination and collaboration across medical and mental health sectors to improve treatment outcomes. In this model, the PCP also serves as the mental health provider. It is acknowledged that PCPs may require additional training to become able to assume this expanded role. If the child does not improve after initial treatment or has severe symptoms, a mental health referral is recommended with the PCP acting as a treatment comanager to support the family and coordinate care. There are policy issues that complicate adoption of this model. Possible financial barriers include variations in policy for reimbursement of pediatric visits for a patient with a primary mental health diagnosis and lack of reimbursement for collateral visits with parents and other caregivers. Also cited were communication problems across the medical, mental health, and education sectors that undermine coordinated, integrated care.

The AAP followed up with a toolkit for pediatricians that explained strategies to incorporate mental health and child development services in primary care practices. They emphasized the need to do so, citing barriers to making referrals including limited availability of community-based agencies and poor communication after referrals are made. This included lack of feedback on their shared patients' progress and exclusion of the referring PCP from clinical decision-making. The toolkit provides resources to help alleviate the discomfort that many PCPs have in managing behavioral health conditions, since this may involve skills that are outside their scope of training and expertise. Key among the strategies AAP promoted is forming partnerships with families, a hallmark of the medical home model.

In their discussion of primary care–behavioral health integration, Wissow et al. (2008) emphasized the need for improved identification of children in need of mental health services, citing studies that show only about one fourth are identified in the primary care setting. Social and behavioral concerns are often inadequately addressed in communication with parents. After referrals are made, only 40 % result in a first appointment being kept by the family. Again, the emphasis in successful care integration is on family involvement. The chronic care model integral to the patient-centered medical home may be a basis for primary care management of psychiatric disorders. This model typically involves augmentation of the primary care team to facilitate care coordination. There may not be sufficient personnel available for mental health management, however, contributing to reliance on pharmacotherapy.

The expansion of the PCP role to include management of mental health and psychosocial problems has raised issues for pediatricians. Dempster et al. (2013) administered a survey to regional AAP members and found that for psychosocial issues, pediatricians prefer to refer families to a mental health center than to counsel them directly. Significantly, more pediatricians believed that community-based treatment was more acceptable to parents than parent training services in the primary care setting, and that patients with commercial insurance had more treatment options than patients covered by Medicaid. Prescribed psychotropic medication was reported as the most available treatment option and the treatment they would most often use.

There is often a need for additional training for pediatricians and other PCPs to become able to successfully manage mental health and child development problems (Kolko and Perrin 2014). The role of the pediatric PCP in identifying and managing mental health problems was critical in the aftermath of major disasters that impacted children: the terrorist attacks in New York City on September 11, 2001, and the flooding in New Orleans following the Hurricane Katrina in 2005 (Madrid et al. 2008; Garrett et al. 2007). Limitations in readiness to assume this role were described by Laraque et al. (2004). They surveyed pediatricians in New York, New Jersey, and Connecticut regarding their reactions and perceived needs to manage mental health issues following 9/11. The pediatricians reported an elevated need for mental health services among their patients and expressed concern about their ability to identify and manage specific mental health conditions including mood and stress disorders.

Conversely, Olteanu et al. (2011) reviewed medical and mental health charts of children directly affected by the Hurricane Katrina in New Orleans who were patients of a mobile program that included primary care and mental health providers. They found that external referrals from community agencies, principally schools, were predominantly for with behavior and attention problems, whereas significantly more mental health referrals from PCPs were for children with internalizing disorders. They also found that on further assessment, the majority of children referred because of their disruptive behavior had underlying depression, anxiety, and stress disorders. This program illustrates the importance of collaboration between medical and mental health professionals to provide integrated primary care.

Integrated Behavioral Health–Primary Care Models

Investigators at NIHCM (2009) and Brito et al. (2010), among others, have published overviews of integrative pediatric primary care. The AACAP (2010) followed up their joint AAP policy statement with a guide to building collaborative medical–mental health primary care partnerships. They emphasized models in which the PCP works collaboratively with mental health professionals.

Three major models of care were described in these sources: (1) consultation by mental health professionals to PCPs, (2) colocation of mental health professionals at primary care sites, and (3) medical and mental health providers working as an integrated primary care team. Each is a way to achieve the medical home goals of delivering care that is comprehensive, continuous, and coordinated.

In the consultation model, mental health professionals are primarily available by phone or videoconference. Through the consultation, the primary care team develops a relationship with the professionals at a mental health agency that facilitates referral and allows for case conferencing to assist management in the primary care setting. Ideally, consultation is available on call and when needed. This can be an essential asset in managing psychiatric emergencies, potentially reducing the use of psychiatric emergency departments. Consulting psychiatrists support pediatricians in managing psychotropic medication. It is recommended that the reciprocal responsibilities in a consultant relationship be negotiated at the outset. Limitations of this model are inherent in the fact that the mental health consultants and PCPs work for different agencies. Parental consent (or patient consent for adolescents under some circumstances) would be necessary for exchange of information. It is not uncommon for community-based mental health agencies to have waiting lists for evaluation and treatment, which often discourages the family from following through on the referral. As commercial and public health insurance have increasingly become managed care products, it is possible that the insurance plan accepted at the primary care site will not be accepted at the mental health agency. This also may undermine the success of a referral.

An important element of consultation, especially in rural communities where the distance to a behavioral health specialist may be excessive for patients with limited transportation availability, is telepsychiatry, the behavioral health variant of telehealth services. In this model, the patient and often a member of the primary care team are present at the medical site and the behavioral health professional is present at the mental health service site. This model has been successfully used for treatment, with the patient and psychotherapist in different locations linked by video. Mental health agencies have also used telepsychiatry for follow-up visits after treatment has terminated (Van Allen et al. 2011). Limitations of this model center on billing, including whether insurance companies will reimburse both providers that are present at different sites during a single visit (Hilty Cobb et al. 2008). In some rural communities, the nearest behavioral health specialists may be in another state. This raises the question, especially in Medicaid, of reimbursement for services in a state other than that of the patient's residence.

In the integrated behavioral health–primary care model, the mental health and medical professionals work for the same agency and practice at the same location. This model is especially effective at community health centers, school-based health centers, mobile health programs, and others that serve vulnerable populations. Because all providers are under the same administrative auspice, insurance compatibility problems are minimized, although managed care restrictions on behavioral health services would be applicable. With this model comes the possibility of fully integrated care, with a shared health record that includes all medical and behavioral health evaluation and visit information. Problems that have arisen in practice include questions raised by mental health professionals about whether all of the information elicited in treatment should be shared with the primary care team. With the increasing use of electronic health records (EHR), it has become clear that many EHR platforms are not suitable for recording behavioral health information (Gracy et al. 2012).

Issues in Collaboration

The AAP (2009) has comprehensively addressed the issue of pediatric competencies necessary to meet the demands to manage behavioral health conditions in primary care, focusing on both clinical and communication skills. Beacham et al. (2012) surveyed PCPs at community health centers and in practice in other community settings to elicit their endorsement of the helpfulness of mental health collaborators on specific topics. Across these topics, the health center providers were more positive in their response to mental health collaboration. For both provider groups, collaboration was most positively received for management of patients with mood and anxiety disorders. The providers reported an overall lower level of acceptance of the integrative model than anticipated by the investigators.

Working successfully with a primary pediatric care program involves different clinical competencies for mental health professionals. Belar (2008) described clinical health psychology as a board- and American Psychological Association-recognized specialization for psychologists working within medical settings. This discipline uses a mind–body model and addresses health-related psychological problems throughout the lifespan, beginning with prenatal care. The medical setting may impose limitations on treatment options. Pomeranz et al. (2009) noted that there may be a need to keep treatments brief when working in a medical setting, sometimes shorter in duration than the time-limited cognitive behavior therapy model. Pediatric primary care settings see far more patients per day and have a higher patient capacity than is typical for a mental health setting. Lengthy treatment of a small number of patients would delay intervention for newly identified primary care patients in need.

McGinnis et al. (2014) described pilot programs at the state level to address issues that may impede successful care integration. The key features of state regulatory changes, which will especially impact care reimbursed by Medicaid, are: (1) creation of a statewide agency or other entity to facilitate care coordination, (2) development of data sharing tools, (3) development of quality management/quality improvement tools to track outcomes, which may be facilitated as more accountable care organizations (ACOs) are developed, and (4) modified reimbursement systems to facilitate integrated behavioral health–primary care models, for example, bundled payments and shared savings.

Integration of Mental Health Services to Routine Medical Care

Pediatricians and other PCPs have a number of tools already at their disposal that can be used or adapted to support an increased focus on behavioral health. These are (1) anticipatory guidance, (2) the Early and Periodic Screening, Diagnosis and Treatment (EPSDT) Medicaid services (Centers for Medicare & Medicaid Services, 2014), and (3) the AAP *Bright Futures* guidelines (2008).

Anticipatory guidance is communication around age-appropriate and developmentally appropriate behaviors and concerns that is routinely included in the pediatric primary care visit. Issues that should be addressed include eating, sleeping, behavior and development, and school functioning. Feeding problems may indicate mother–child interactional problems and suggest behavioral interventions (Adamson et al. 2013). Sleep disorders are an often overlooked indicator of developmental and behavioral problems. Children with sleep disordered breathing should be referred for developmental assessment as well as medical evaluation (Bonuck and Grant 2012). Parental concern about the child's developmental functioning should trigger for screening and possible referral for evaluation (Tervo 2005). Parent-reported school problems should be addressed promptly with appropriate interventions for behavioral and/or learning problems.

Among the medical screenings done under EPSDT are tests for lead levels and iron-deficiency anemia. Children with mildly elevated lead levels should be considered for developmental evaluation (CDC 2005). Iron deficiency anemia is associated with heightened risk of developmental delay, cognitive deficits throughout childhood, and psychiatric disorders (Congdon et al. 2013; Chen et al. 2013). Developmental screening is integral to EPSDT and should be a routine part of well-care visits at least through the first 36 months of life. The AAP has recommended that PCPs develop working relationships with their local EI programs to facilitate referrals and reciprocal communication (AAP Council on Children with Disabilities 2007).

The *Bright Futures* guidelines include recommendations for developmental, autism, psychosocial, mental health, and risk behavior screenings across the age spectrum. These recommended tools are all validated and evidence based. Their use increases early identification and referral for intervention (Hix-Small et al. 2007).

There are recommended, validated screening instruments available for use in primary care to identify clinical and psychosocial problems including postpartum depression, maternal depression, DV, and food insecurity. Referral to EI is mandatory for infants and toddlers with a substantiated child maltreatment case under federal law (S 3817, reauthorized 2010). The question of which screenings to use, and for whom, must be resolved for the primary care practice because the use of so many screening tools can not only negatively impact patient flow but also be burdensome for parents. The value of universal mental health screening in primary care is unclear. Additional provider training may be needed to maximize the value of screening results in clinical decision-making (Hacker et al. 2013; Wissow et al. 2013).

There are many medical conditions associated with early developmental delays, and comprehensive care should address both medical and developmental aspects. The most common is low birth weight. Others include seizure disorder, cerebral palsy, sickle cell anemia, meningitis, congenital cardiac anomalies, inborn metabolic disorders, and genetic syndromes (Nozyce and Grant 2009). Some medical conditions require mental health care as part of treatment. Patients presenting with obesity may have underlying psychological problems that should be addressed through family-centered intervention (Kaplan et al. 2014). Psychotherapeutic intervention is necessary for children and youth with eating disorders, for example, anorexia and bulimia (Campbell and Peebles 2014). Comorbid mood and anxiety disorders may compromise asthma management and lead to preventable hospital and emergency department use (Richardson et al. 2008). Parents and other caregivers of children with chronic conditions also may develop mental health problems, for example, depression, anxiety, and disturbed sleep among parents of children with asthma (Yilmaz et al. 2008).

Behavioral Health Integration and the Medical Home

National population-based data show that up to 70 % of primary care visits made with physical presenting problems also include significant psychosocial issues, and 12 % of emergency department visits are for a primary behavioral health complaint. Difficulties accessing behavioral health care, which could be addressed by primary care–behavioral health integration, contribute to the high per capita health care costs in the USA and undermine clinical outcomes. Integrated care can make a major contribution to achieving the goals of national health reform (Brown Levey et al. 2012).

Psychiatric disorders are bidirectionally associated with chronic disease. Depression, for example, may precipitate the onset of a chronic disease, or may manifest as a consequence of a chronic disease. Understanding this interrelationship facilitates treatment of medical and psychiatric disorders and improves clinical outcomes (Collins et al. 2010; Chapman et al. 2005). Croghan and Brown (2010), writing for the Agency for Healthcare Research and Quality (AHRQ), emphasized the importance of integrating mental health care in the patient-centered medical home for optimal quality in primary care services. In pediatrics, there is evidence of success for integrated models in treating ADHD and depression, and in identifying and intervening for psychosocial problems such as DV.

A joint statement advocating the integration of behavioral health care in the patient-centered medical home was endorsed by, among others, the AAP, the American Academy of Family Physicians, the American Psychological Association, and the American Osteopathic Association. This position was based on the need to integrate behavioral health and medical care to maintain a holistic view of the person, avoid fragmented service delivery, enhance access to care, and improve quality of care. Too often, medical home models have been implemented with a transformative intent but compromised by not including behavioral health services

(The Working Party Group on Integrated Behavioral Healthcare 2014). An agency responsible for recognition of primary care practices as medical homes (which in many states allows for enhanced reimbursement) is the National Committee on Quality Assurance (NCQA). There are three levels of NCQA medical home recognition depending on the degree to which the primary care practice meets requirements. These requirements do not include integration of behavioral health services.

Conclusion

The integration of behavioral health and primary care services builds on the medical home or health care home model. Some elements of the medical home have remained constant, focusing on care that is continuous, comprehensive, coordinated, and patient centered. In other respects, the model has evolved over time, from one primarily intended for children with special health care needs to one that emphasizes management of chronic medical conditions. There has been an increased emphasis on prevention and wellness, and on lowering health care costs by reducing hospital and emergency department use.

There is compelling evidence that to succeed, the medical home must include access to behavioral health services at the primary care site. Because of the high prevalence of mental health, developmental, and psychosocial problems, behavioral health integration is an essential component of comprehensive primary care. Evidence that chronic diseases are often comorbid with psychiatric disorders further underscores the need to enhance access to mental health services for optimal management of chronic disease in primary care and reduce health care costs.

There have already been changes in the elements necessary for formal recognition of primary care practices as medical homes. Initially, NCQA excluded primary care practices led by a nurse-practitioner or other nonphysician, and these practices were also excluded in federally funded medical home demonstration projects. The initial NCQA standards for recognition did not adequately reflect pediatric primary care practices.

Medical home recognition standards have changed in response to realities of primary care delivery systems. The next logical step is the requirement that behavioral health services be included in practices that seeks medical home recognition. Different levels of primary care–behavioral health integration could be accommodated in the three-tiered NCQA medical home recognition. Just as the reimbursement differential for formally recognized medical homes is intended to support care coordination for patients with chronic medical conditions, an additional enhancement should be available to primary care practices to support integrated behavioral health services. Investment in the integrated model can be anticipated to be offset by savings from reduced hospitalization and emergency department use.

Other health system modifications are necessary to bring about truly comprehensive and coordinated primary care. To be responsive to the expanded scope of practice inherent in the integrated care model, changes are needed in medical and mental health education. The scope of conditions that are reimbursed in primary care must be expanded to allow medical professionals to be compensated for their role in managing primary psychiatric and developmental conditions. These changes involve state governments in their Medicaid regulations as well as commercial insurance plans.

The expanded scope of primary care has been in part driven by a problem, the critical and long-standing shortage of pediatric behavioral health specialists. The solution, integrated primary care–behavioral health services, brings with it an opportunity to improve quality of care, especially for vulnerable children and families. Integrated care facilitates collaboration and coordination across the medical and mental health service sectors. Enhancing primary care to include behavioral health will improve early identification. Making behavioral health care available at the primary care site will help families overcome problems that have undermined the success of external referrals and contributed to the undertreatment of mental health and developmental conditions. Better integration of medical and mental health services can facilitate a wider range of treatment options, with less reliance on psychotropic medication as a default because others modalities are not available.

Primary care–behavioral health integration is the next step forward for comprehensive pediatric health care. It will help achieve the goals of the medical home and of national health reform.

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W. O'Donohue, A. Maragakis (eds.), *Integrated Primary and Behavioral Care*,
DOI 10.1007/978-3-319-19036-5