# Integrated Care and Psychiatrists

# 14

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## Introduction

The world of health care in the United States is changing fairly rapidly, especially with regard to how care is delivered. Providers, patients, and payers need to adapt to the changing healthcare environment to maximize their effectiveness and to avoid being made irrelevant by this cataclysm of system transformation, particularly the specialized interface between primary care (PC) and behavioral health (BH) (which includes mental health and substance use disorders and the patients/services/providers associated with such conditions). It is abundantly clear that delivery system redesign is essential to improve health of the population, improve patient experiences with the delivery of healthcare services, and reduce per capita costs for such services.

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The prevalence and burden of mental health conditions, their frequent comorbidity and confounding interdependent relationships with other health conditions and treatments, and the need for coordination of care for persons with such complex and multifactorial presentations are key components of the BH–PC interface. It is important to emphasize that psychiatrists are critical to this interface because of their bio-psycho-social expertise, their chronic illness management focus, their understanding of and utility in modifying human behavior, and their leadership skills. We mention these clinical and leadership functions, not to establish or preserve psychiatric hegemony over the provision of mental health and addiction services, but to objectively assert the unique strengths of well-prepared psychiatrists that make them essential to the BH–PC interface.

Policy experts have repeatedly and consistently cited the lack of sufficient numbers of providers and inadequate organization of services in PC settings as key contributory factors in this system inadequacy. Beyond expanding the number of PC providers and improving services with the intention of expanding the PC safety net, the relationship of BH and PC on an interpersonal and systems-based level must be considered. This chapter is intended to address the ways that psychiatrists should be trained, organized, oriented, utilized, deployed, supported, and monitored in integrated systems of care. The range of roles in which psychiatrists can engage include team-based direct clinical assessment and care,

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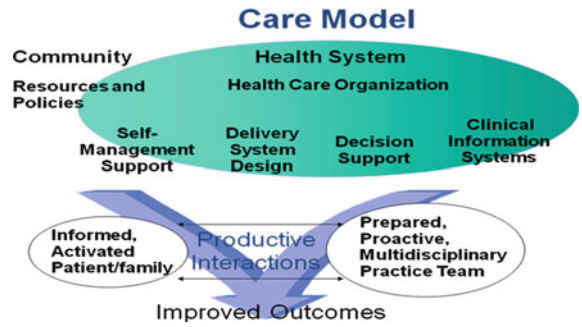


**Fig. 14.1** Chronic Care Model

consultation with a wide range of providers, training, policy development, quality improvement, research and evaluation, system implementation, and leadership within such teams or broader systems of care.

It is our intent to be succinct and user-friendly in our presentation of facts and guidance. Since this handbook is intended to guide community and public psychiatrists in aspects of practice that will enhance their effectiveness, we focus on the knowledge and skills needed to function in such systems. We do provide sufficient references to support the factors that contribute to increased effectiveness and improved patient outcomes derived from such practice.

## Background

Psychiatrists have been working in PC settings and in collaboration with PC providers for many years. Early models of collaborative care (Morrill 1978) showed the benefit of placing BH providers in PC clinics. Although these approaches failed to achieve broad or systematic acceptance, over the next 2 decades a diverse range of healthcare organizations, including Kaiser Permanente, Group Health of Puget Sound, Intermountain Health, the Veteran's Administration, the Indian Health Service, and Federally Qualified Health Centers (FQHCs), began to develop and implement colocation of mental health services as part of overall health services, allowing closer linkages to PC.

The trend towards integration was facilitated by the introduction of the Chronic Care Model for disease management (Wagner et al. 2001). This model (Fig. 14.1) described the essential elements of an effective clinical organization engaged in meeting the needs of persons with chronic health problems, recognizing that the majority of healthcare costs are associated with chronic health conditions. The six components of this model (Delivery System Design, Decision Support, Clinical Information Systems, Healthcare Organization, Patient Self-management and Support, and Community Resources) were intended to apply to general medical conditions. However, it readily became apparent that they also applied to BH conditions. This realization of the importance of colocation and integration of key clinical disciplines in the delivery of such care quickly followed (Mauer et al. 2005).

Clinical research models were introduced to improve the detection and treatment of depression in elderly patients in PC settings. One of these, the IMPACT (Improving Mood: Providing Access to Collaborative Treatment) study (Unützer et al. 2002), increased detection of depression, improved outcomes, was cost-effective and outperformed "treatment as usual." Over time, IMPACT has become a widely used model for treating mental illness in collaborative care settings. It has been modified to serve diverse age and cultural cohorts and for the treatment of a variety of psychiatric conditions, especially those likely to be encountered in PC settings.

Demonstration projects began testing the components and limits of integrated models across many settings. Several studies showed impressive results and meta-analyses of these

studies identify key factors associated with improved outcomes: (1) primary care providers (PCPs) who are competent and willing to prescribe psychotropic medications, (2) a multidisciplinary team approach that includes point responsibility for care coordination, whether by a BH provider or nurse, and (3) colocated BH providers, including access to consultant psychiatrists (Butler et al. 2008; Bartels et al. 2004; Gilbody et al. 2006).

In the past decade, startling new data emerged showing marked differences in the mortality rates of persons with serious mental illnesses (SMI) as compared with the general population (Parks et al. 2006). Multiple reports called for new models of care to reverse this trend, endorsing the need for specific attention to the comorbid health risks of persons with SMI, including metabolic side effects of psychotropic medications, diet, and other social determinants of health particular to this population (Bazelon Center for Mental Health Law 2004). SAMHSA and other funding organizations have developed initiatives to promote the implementation of "reverse colocation" models, in which PC providers are incorporated into BH specialty programs, especially community-based mental health facilities.

Many of these developments parallel the recommendations from the Institute of Medicine's pivotal series of reports on improving the quality of health care in the twenty-first century (Crossing the Quality Chasm). The IOM stated that an improved healthcare system must be *patient-centered, safe, timely, effective, efficient, and equitable* and that most health providers must be trained to be competent in *patient-centered care, evidence-based practice, and use of informatics, quality improvement methods, and multidisciplinary teamwork*. The IOM even focused specifically on improving the quality of care for mental health and substance use disorders, placing special emphasis on increasing collaboration and integration between BH and PC providers.

In the past 2 decades, but especially in the context of the state and federal health reform initiatives since 2008, the concept of the patient-centered medical home (PCMH, aka integrated health home or primary care home) has taken root. This has led to the development of many different models of care, most of which reflect an emphasis on delivery system attributes such as *access to care, accountability, comprehensive whole person care, continuity, coordination and integration, and person- and family-centered care*. In virtually all the PCMH models and initiatives, it is broadly accepted that services and providers for mental health and addiction are among the most important components and interprofessional relationships. Therefore, we need to think about integration of BH and PC generally, but also in the context of emerging PCMH models.

## Basic Concepts of Integrated Care

### Terminology

The interface between BH and PC is the metaphorical context within which interactions regarding patients and services may occur. The IOM describes an evolutionary path of the interface moving from one characterized by cooperation through collaboration and eventually to integration. "Integrated care" and "collaborative care" are used interchangeably when discussing this system of care.

### The Four Quadrant Model

Integrated care models have changed as they have been implemented and tested in relation to *types of clinical settings, types of BH and general medical conditions, level of risk, acuity, and severity of respective conditions, and the degree of comorbidity or complexity.* The Four Quadrant Clinical Integration Model (Mauer 2006) is a useful conceptual tool (Fig. 14.2) that allows clinical organizations to develop and implement integrated or collaborative care systems by organizing relevant

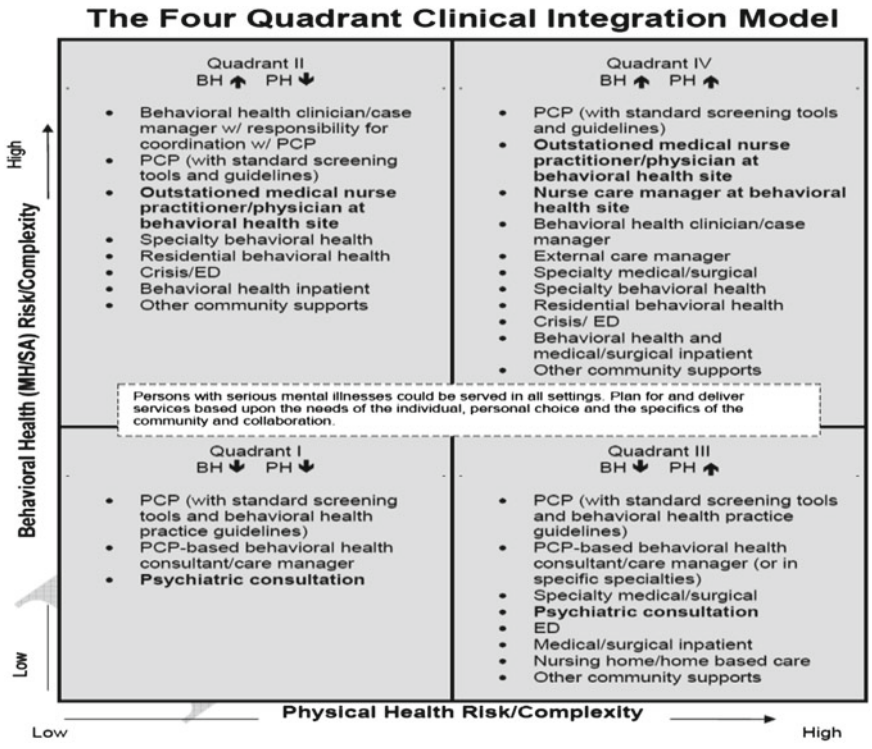


**Fig. 14.2** The Four Quadrant Clinical Integration Model

services and staffing in relation to four general population groups based on the parameters described above.

A relatively simple way of orienting to this model is to consider that most persons with severe and persistent mental disorders or substance dependence would fit into the upper two quadrants and that most persons with chronic or more severe physical health conditions (e.g., diabetes, hypertension, heart disease, cancers) would fit into the two quadrants on the right side of the chart. The kinds of BH services, staffing, and resources listed in each quadrant serve as a guide for specific operational delivery system development, but this must be customized in relation to the context in which the clinical organization exists, especially in consideration of *community service capacity; workforce availability, competence, and training potential; organizational support from clinical and administrative leadership; reimbursement factors; cultural characteristics; and patient preferences.*

## Levels of Collaboration

It is also useful to codify the degree of collaboration and colocation of providers associated with different models of care. Different models may be more apt for services associated with specific target populations or relevant quadrants in the Four Quadrant Model. They may also be considered as steps along a path to developing a more fully integrated system, one that evolves or develops in relation to a rational and feasible timeframe for system transformation. Ranging from separate site referral based care, to colocation, and varying degrees of clinical integration, this continuum allows planners and participants in the system to compare the elements of their program to a range of options and identify levels of collaboration that are appropriate for their current and future goals. The Levels of Collaboration most often used include:

*Minimal Collaboration*: BH and PC providers work in separate facilities, have separate systems,

and communicate intermittently as needed for referral purposes.

*Basic Collaboration at a Distance*: BH and PC providers have separate systems at separate sites and engage in periodic communication about shared patients. Improved coordination is the primary improvement compared to Minimal Collaboration.

*Collaboration On-Site with Minimal Integration*: BH and PC providers have separate systems but share the same facility. Proximity allows for more communication, but each provider remains in the separate clinical culture.

*Close Collaboration On-Site in a Partly Integrated System*: BH and PC providers share the same facility and have some systems in common, such as scheduling appointments or medical records. Physical proximity allows for regular face-to-face communication. There is a greater sense of being part of a clinical team in which providers have separate/specialized as well as shared roles in working together to treat their patients.

*Close Collaboration Approaching a Fully Integrated System*: BH and PC providers are part of the same team. The patient experiences the BH and PC treatment as jointly and interdependently provided.

A comprehensive 2010 report (Collins et al. 2010) provides clear descriptions of the eight most commonly observed models of care in the United States, identifying the level of collaboration, the relevant or target populations (i.e., quadrants), the current evidence base, as well as implementation and financial considerations for each model.

## Stepped Care

In order to manage the limited resources available to provide reasonably effective care, it is important to prioritize and match patient need with the appropriate level of care. This involves developing systematic methods to identify specific conditions and patient needs/preferences, initiate care that is correlated with the level of need, and then adjust the type and volume of care to match the clinical conditions as they change. Stepped care is a care allocation method based on the premises that care should be *least disruptive to the patient; the least extensive, intensive, and expensive care needed for positive results; and least expensive in terms of staff training required to provide effective care*.

## Care Models and Psychiatric Roles

The remainder of this chapter focuses on how psychiatrists can function within these clinical care models. As stated earlier, there are numerous models of care involving the integration of BH and PC. There are a very few fully integrated programs that address the PC and BH needs of the whole continuum of persons with BH conditions. This is an evolutionary goal and may not be fully achieved on a broad basis for many years. The continued existence of mirror image models (BH integrated into PC settings and PC integrated into BH settings) is inevitable and may be preferable in some communities and for some patient populations. Therefore, we address integration and psychiatric roles from these bidirectional perspectives.

## Behavioral Health in Primary Care Settings

Effective BH care in PC settings requires a range of functions and staff to perform them. This section outlines the key functions, with reference to the pathways of care, and the functions that are most appropriate for participating psychiatrists. The process of care is more consistent and reliable if a stepped care approach is implemented. Therefore, depending on the level of apparent acuity, severity, and complexity, any of several steps of care may be appropriate, including (1) Provision of basic illness education and self-management referral and information, (2) Direct provision of psycho-educational and motivational support by a clinical team member, (3) Colocated BH provider assessment and/or

brief treatment, and (4) Referral to higher level BH specialist (including psychiatrist) or external BH services. The specific staff suited for any of the above steps will vary depending on clinical conditions of patients, composition of the multidisciplinary team, and number, type, and FTE of BH staff who are colocated or integrated with the team.

The fully integrated team will be composed of some combination of traditional primary care team staff, including PC providers (physicians and/or other prescribing providers, such as nurse practitioners or physician assistants), nursing staff, medical assistants, reception and other support staff, and BH clinical staff. The BH clinical staff must include non-prescribing BH specialists (e.g., social workers, licensed counselors, psychologists), prescribing psychiatric providers (psychiatrists, nurse practitioners), and possibly nonprofessional BH staff to handle certain patient education, motivation, or care management functions. The step at which patients enter into the process will also vary depending on how clear the diagnostic impressions are at the point of triage/assessment, the level of engagement of the patient, the level of comfort and competence of the non-BH clinical staff, and the negotiated roles for the BH staff.

The pathways and processes of care will involve some or all of the following functions and services: screening; assessment by the PC provider; warm hand-off to BH provider; triage and/or comprehensive assessment by BH provider; case consultation; patient education and motivation support; office-based counseling by PCPs; brief on-site treatment by BH providers, including shared or simultaneous care by PCP and BH providers; referral to external BH specialty providers; care coordination; and outcome assessment. The selection and utilization of screening tools, especially in identifying the conditions for which treatment might be provided, is frequently a key decision support function in integrated programs. These screening instruments (e.g., PHQ-9, GAD 7, SBIRT) can be used with some or all patients in the PC setting to identify persons who may have target conditions such as depression, anxiety, somatoform disorders, and substance abuse. For those patients whose results indicate significant risk or probability of a BH condition, a higher level of assessment is provided, either by the PCP or a colocated BH provider.

If a PCP feels the need for additional diagnostic or treatment support, a referral to a BH provider may be made. Preferably this would involve a "warm hand-off" to the BH provider at the time of the PCP's visit with the patient, depending on the availability of the BH provider. The opportunity to introduce the patient to the BH provider, if only to set a time for a future appointment, increases the probability that continuity of the care relationship will be preserved, just as referral to a BH provider within the PC setting is more likely to be successfully completed as opposed to an external referral to a BH specialty program. The BH provider's assessment may include recommendations for brief interventions and self-care management. PCPs may proceed directly to office-based counseling and/or psychotropic medication treatment, with some of these interventions being provided exclusively by the PCP or by others on the team.

For more complex and challenging patients, the team (PCP, BH provider, or care coordinator) may request consultation regarding diagnostic impressions, treatment recommendations (including medications), and behavioral management concerns. This is most commonly where the integrated team psychiatrist becomes involved. In particular, psychiatrists are most likely to perform assessments of the more complex patients; curbside consultations with PCPs; more complex case-specific consultations derived from direct patient evaluations or from communications with other clinicians directly involved with the patient; and limited direct treatment with psychotherapeutic and/or psychiatric medication interventions. In addition to clinical care functions, integrated team psychiatrists may perform various team and systems level administrative and service coordination functions. These include participation in team meetings, quality improvement, service planning, coordination, training, research and evaluation, and oversight activities.

Particular emphasis must be placed on effective consultation skills, since in some integrated programs, there may be little support or funding for psychiatrists to provide much, if any, direct

care. Psychiatrists should be familiar with and capable of flexibly and adaptively providing the whole range of mental health consultation types, including patient-centered and consultee-centered clinical consultations as well as program-centered and consultee-centered administrative consultations (Caplan and Caplan 1993). Clinical consultation should be directed to supervise and support other BH clinicians and any of the non-BH team members, especially assisting PCPs with diagnostic clarity, psychopharmacology recommendations, behavioral management strategies, and office-based counseling techniques. Among the program level consultation functions, it is also essential for psychiatrists to participate in the development, implementation, maintenance, and sustainability of effective outcomes measures (including BH as well as general medical relevant measures).

The willingness of administrators and the PC team to accept the participation of psychiatrists in these nondirect care functions may require some time for the BH providers to demonstrate their clinical value to the team. The wide variation in how psychiatrists are allowed to perform such functions in community-based mental health programs reminds us that the most appropriate utilization of the broad range of skills that psychiatrists provide may fail to occur. Such administrative decisions are usually related to resource limitations, the level of enlightenment of administrators, the track record of relationships between administrators and psychiatrists at the specific clinic, and myriad other factors. Psychiatrists who have program or agency medical director experience may be more likely to be seen as acceptable for such functions. It is essential, however, that some minimum level of psychiatrist staffing, as expressed through actual FTE amount, should be explicitly determined in BH-integrated programs and PCMH. It would also seem obvious that, in order for this more inclusive range of psychiatrist activities to be actualized at the level of clinical care, there should also be significant psychiatrist participation at the system level (local, regional, state, and national) with psychiatrist medical director positions in the mental health and/or health authorities of those governmental jurisdictions.

## Integrated Psychiatrist Skills and Attitudes: Patient-Centered, Evidence-Based, Recovery-Oriented, Culturally Competent, and Trauma-Informed

Key to all these functions is the need for the psychiatrist to be aware of and willing to provide evidence-based care recommendations as much as possible, including awareness of comorbid general health conditions and co-occurring substance use disorders and the developmental, psychological, and sociocultural issues that are relevant to specific patient cohorts, as defined by age, cognitive abilities, or other clinical factors that impact presenting clinical conditions. The psychiatrist must be committed to true collaboration with other health colleagues, mindful of and competent in the communications processes that support such collaboration, and comfortable with and willing to fit into PC culture. The psychiatrist must model awareness of the key patient-centered skills and attitudes that are associated with effective mental health care, including recovery-oriented service principles, cultural and ethnic diversity competence, and trauma-informed care.

Although it is preferable for psychiatrists to provide as much of these functions in person, alternative synchronous or asynchronous communication methods, e.g., tele-video, internet, or telephone, may be necessary and even preferable in certain circumstances for some or all of the psychiatrist's activities with the integrated care team. Teams will often settle into a preferred mode of communication that allows prompt consultation and response time. PCPs may use one mode of communication while the BHPs utilize different modes in a given clinic. It is important for the psychiatrist to find out what works best and to match it to the respective setting.

Working with PCPs in integrated care settings is likely to be challenging, but should also be rewarding. PCPs are generally aware of the high prevalence of BH conditions that present in their clinical practices and are often very eager to learn from and work with effective collaborating psychiatrists. One of the main challenges for BH providers in integrated settings is to manage the range of clinical activities in a balanced way so

that access to triage and assessment visits are readily available. Any significant delay in access, such as a wait list, can undermine the effectiveness and relevance of having integrated BH providers. At the same time, it is important to prevent PCPs from simply referring any and all patients who have any BH concerns, a circumstance that would overwhelm the limited BH capacity and circumvent the opportunity for PCP staff to gain and maintain their own BH assessment and treatment skills.

Tracking key data (either in the EHR or a separate data tracking system), including rates of referrals for certain conditions and outcomes measures for various BH conditions should be reviewed so that patients with various BH problems are neither being over- or under-referred to the BH providers. Such measures, coupled with stepped care protocols, can assure the most appropriate and efficient use of the BH staff while achieving better clinical outcomes. The utilization of disease registries, individual case feedback, and iterative encounters may offer incentives for many PCPs to improve their practices and hone their BH skills, resulting in improved clinical efficiency and comfort in recognizing, treating, and formally referring for BH treatment. The consulting psychiatrist may play a key role in setting up and reviewing such data systems as well as utilizing the data to advise PCPs or their teams on various aspects of care.

The populations of focus are often quite heterogeneous. In many PC settings, a variety of factors may require the consulting psychiatrist to be prepared to work with a wide range of patients, both in terms of age and types of conditions encountered. This could include adolescent and even some child patients, not to mention the elderly, as well as the full gamut of mental health, developmental, and addictions conditions that can be imagined. This may provoke discomfort and even reluctance to see patients for whom one feels less well prepared to evaluate or discuss in consultation, but it is actually advisable for the psychiatrist to participate in such activities. While readily acknowledging the limitations of knowledge and skills, the consulting psychiatrist may be able to access information and resources that will lead to a reasonable assessment and treatment recommendations. Demonstrating such willingness to go outside the comfort zone (when responsibly done) parallels the kinds of "on the job training" and collaborative learning experiences that many PCPs find to be central to their clinical practice. With appropriate backup, many adult psychiatrists can effectively provide consultation across age groups.

Relationship building and continuity are crucial to effective consultations and they may, over time, lead to reductions in requests for face-to-face evaluations of patients or at least a reduction in the number of inappropriate lower severity referrals. Depending on the model of integration utilized, some arrangements have consulting psychiatrists working primarily with the PCP or BH providers and directly seeing few if any patients (Trivedi et al. 2007). Inherent in such models is the assurance of sufficient consultant time, as well as bidirectional trust and comfort among those involved in the collaboration.

## Liability

Although the risk of malpractice litigation in the provision of such consultation is considered by many to be relatively low, liability concerns are common among psychiatrists entering into collaborative or integrated care settings. Detailed discussion of these issues is beyond the scope of this chapter. However, it is essential that liability coverage be provided. The level and type of coverage clearly depends on the situation in relation to the employment or contract status of the personnel involved.

## Documentation

The consulting psychiatrist must be judicious but thorough in documenting the clinical assessment, treatment recommendations, and consultation transactions that occur in the course of such work. This is a broad subject, also beyond the scope of this chapter. Suffice it to say that, in addition to the need to provide clear and succinct

recommendations, the level of detail of clinical documentation depends on the type of clinical activity, billing codes used, and the availability and sophistication of electronic health record systems. Many psychiatric consultants have found that providing notes (assessments or briefer consultation notes) that follow an APSO format (Assessment, Plan, Subjective, Objective) as opposed to the traditional SOAP format works very well for their PC colleagues.

## Primary Care in Behavioral Health Settings

Persons with the most severe and disabling mental health and addiction disorders have a much greater prevalence of comorbid general medical problems, have much greater mortality than the general population, and too often receive little or no adequate PC services. These persons have more difficulty navigating the complex and fragmented healthcare systems in most communities. They may be treated in discriminatory ways in mainstream health settings. These patients (particularly those in the upper two quadrants of the Four Quadrant Model) often receive most of, if not all, their health care within a BH specialty setting, either because they can't access the general medical system, because they or their BH providers fail to recognize or follow up on apparent medical concerns, or due to the overall fragmentation and chaos that characterizes many publicly funded health systems (Alakeson et al. 2010).

Depending on the availability and degree of evolution of fully integrated programs, it may be necessary to develop colocation of PC services within specialty BH settings. Such "reverse colocation" models are well described elsewhere and involve a variety of arrangements in which PC providers are included in the BH setting. Such arrangements involve a similar range of clinical, infrastructure, and administrative variations as described in the section on BH in PC settings. Such models are less abundant and lag significantly in their aggregate level of development, although recent state and federal initiatives are promoting rapid uptake of this care approach.

## General Medical Risk Monitoring in BH Settings

This section outlines ways in which psychiatrists in BH settings can better advocate for and, when appropriate, provide general medical care, disease prevention, and reverse colocation and integrated care. It has become well established that persons with mental illnesses have substantially higher prevalence and mortality from a number of comorbid health conditions, including relatively higher levels of all five modifiable risk factors for cardiovascular disease: hyperlipidemia, hypertension, obesity, diabetes, and tobacco use. Of these risk factors, tobacco use is persistently the most significant in its pervasiveness and health impact (Compton et al. 2006; Lasser et al. 2000). Similarly disturbing findings for persons with SMI apply to Type II diabetes, hypertension, and metabolic syndrome (a constellation of abdominal obesity, elevated blood lipids, impaired glucose tolerance and hypertension) (McEvoy et al. 2005). While many factors may be associated with cause and effect mechanisms of these elevated risk factors, the use of atypical antipsychotics, often necessary for symptom control, may create or accelerate these problems. PCPs and psychiatrists fall well short of recommended screening and monitoring guidelines, and rarely utilize well-established and efficacious smoking cessation strategies for this population.

Given the clinical, economic, and quality of life implications of these severe health disparities, psychiatrists and PCPs must be much more attuned to recommended guidelines for screening and prevention of somatic illness with patients in BH or PC settings.

For patients not routinely receiving effective PC and preventive services, whether in PC clinics or in reverse colocation BH programs, comprehensive guidelines for preventive services exist that are particularly relevant to the SMI population. These recommendations include metabolic screening intervals for antipsychotic medications, laboratory and physical exam values useful in the diagnosis of diabetes, dyslipidemias, obesity, and metabolic syndrome, as well as blood-borne and communicable disease screening (HIV, hepatitis,

syphilis, tuberculosis) and vaccination recommendations. A useful checklist follows to guide recommendations to patients or PCPs or BHPs to assist in completion of screening guidelines for this population.

Psychiatrists may also make use of patient disease registries, quality improvement methods, and electronic medical health records to develop and implement screening and monitoring protocols and to improve communication with PCPs. Improving the recognition, referral, and/or treatment of comorbid health conditions for persons with SMI will result in improved outcomes, reduction of morbidity, and ultimately improved health and recovery. This must be a priority for all current and future community psychiatrists.

## Psychiatric Leadership in Integrated Care

The vision we have presented in this chapter requires community psychiatrists who are versatile, flexible, and capable of working with a wide range of patients and providers. They must be familiar with public health psychiatry and other aspects of population health. They should demonstrate the core competencies articulated by the Institute of Medicine, described earlier, as well as the more recently released Core Competencies for Interprofessional Collaborative Practice developed by a consensus group representing the major health disciplines (Interprofessional Education Collaborative Expert Panel 2011). Beyond the knowledge, skills, and attitudes associated with the direct provision of clinical care and the effective consultation techniques critical to effective integration of care (Katon and Unutzer 2011), psychiatric leadership in clinical oversight, delivery system design, training, and a wide range of additional administrative and policy functions may provide additional value to the care and care systems that emerge in transforming health systems. The relevant leadership skills for psychiatrists are addressed in other sections of this handbook, but must be incorporated into the functioning of any psychiatrist involved in integrated care. Psychiatric leadership in these areas is needed to ensure that appropriate expertise and guidance leads to incorporating evidence-based, recovery-oriented, and affordable approaches to treating mental illness and substance use disorders in all settings and addressing PC needs in BH specialty sites. Whether the psychiatrist's assigned roles are strictly clinical (including direct care and/or consultation) or encompass more explicit and overt administrative, planning, or policy functions, the key leadership qualities that psychiatrists embody are intangible assets for the clinical team, the healthcare provider organization, and the overall delivery system.

## Appendix A: Comprehensive Preventive Health Screening for Adults with Serious Mental Illnesses

This appendix is designed to assist community psychiatrists in providing preventive disease services currently recommended for the general population, based on age, gender, smoking, and pregnancy status, with additional recommendations for screening services and/or medications for persons with SMI.

### Recommended Universal Screening

Universal preventive health recommendations (USPSTF) based on gender, age, smoking, and pregnancy status are accessible at http://epss.ahrq.gov/ePSS/search.jsp, including a printable version. The USPSTF list is a reasonable baseline set of recommendations. Further services may be indicated based on personal history, family history, other known risk factors for preventable diseases, or individual patient characteristics.

#### Immunizations

A convenient and user-friendly guide for recommended adult vaccine schedules, assuming patients are up to date on recommended childhood vaccinations, is accessible at: http://www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm. Of particular note for persons seen in BH settings, where there is a high incidence of tobacco use, especially smoking, adults who smoke are considered to have chronic underlying lung dis-

ease and should be offered a pneumococcal (polysaccharide) vaccine once before the age of 65, and again at the age of 65 in addition to yearly influenza vaccinations.

## Additional Preventive Services for Persons with Serious Mental Illnesses

### Communicable Diseases

People should be offered screening at intake and annually for the following if risk factors exist or persist (De Hert et al. 2011): syphilis; tuberculosis, hepatitis B, and hepatitis C; HIV.

### Cardiovascular Disease

Basic screening should occur similarly to the general American adult population, with additional screening as guided by individual risk factors (i.e., high-risk medications, smoking cessation, etc.).

### High-Risk Medications

Some common medication classes and specific medications to consider in screening and monitoring for this population:

*Second generation antipsychotics* (American Diabetes Association, American Psychiatric Association, American Association of Clinical Endocrinologists and North American Association for the Study of Obesity 2004):

*Lithium*: Renal, thyroid, pregnancy, fluid status, urinalysis, and complete blood count.

*Valproic acid*: Liver function tests (baseline and throughout), complete blood count with platelets, serum drug levels; prothrombin time/partial thromboplastin time, especially prior to surgery; serum ammonia if the person is lethargic or with mental status changes.

*Tricyclic antidepressants*: Blood pressure, pulse, weight, electocardiogram in older adults and those with previous history of heart disease.

*First generation antipsychotics*: AIMS every 6 months, some with EKG.

### Metabolic, Nutritional, and Endocrinologic Deficiencies

Monitor for these deficiencies with the following screening tests/questions: complete blood count (anemia may present as depression); thyroid (may mask signs of depression, may be affected by some treatments); liver function tests (may be at elevated risk for nonalcoholic hepatitis, hepatitis, or alcoholism) (De Hert et al. 2011); vitamin B12 and folate (poor dietary intake); vitamin D (limited sunlight exposure or dietary intake); dexa scan: especially in those at equal risk to women above 65 years of age; questions about constipation and oral health (De Hert et al. 2011).

### Endocrinological or Metabolic Disorders

These disorders may be addressed with the following treatments: multivitamin; folate (dosage: 400–800 μg/day), especially in women of childbearing age; thiamine (dose: 100 mg/day): there is a high co-occurrence in alcohol misuse disorders; vitamin D (dosage: 400 IU

Table 2. Recommended Monitoring Parameters for Patients Taking Atypical Antipsychotics[a]

| Parameter | Baseline | 4 Wk | 8 Wk | 12 Wk | Quarterly | Annually | Every 5 Years |
|---|---|---|---|---|---|---|---|
| Personal history | X | | | | | X | |
| Family history | X | | | | | X | |
| Weight (BMI) | X | X | X | X | X | | |
| Waist circumference | | | | | | X | |
| Blood pressure | X | | | X | | X | |
| FPG | X | | | X | | X | |
| Fasting lipid profile | X | | | X | | | X |

[a] *Additional or more frequent screening may be necessary based on a patient's individual risk and personal or family history.*
*BMI: body mass index; FPG: fasting plasma glucose.*
*Source: Reference 19.*

daily); and calcium (dosage: 1,000 mg elemental daily); omega-3 fatty acids that may help with depression and schizophrenia (no dosage range has been identified, doses above 3,000 mg/day should be used cautiously; Akter et al. 2011).

### Intrapartum and Postpartum Period

Neonatal urine drug screen/meconium drugs of abuse on neonates born to mothers with serious mental illnesses or depression (De Hert et al. 2011); postpartum depression screening instrument; increased frequency of visits, higher monitoring of high-risk medications and exacerbation of symptoms.

### Co-occurring Conditions

Alcohol and substance misuse; tobacco use. Adults with SMI should be offered counseling routinely, in addition to pharmacological/replacement therapies to assist in cessation (Allen et al. 2011).

### Injury/Violence

Suicide risk; intimate partner violence; seatbelt use; helmet use.

## Appendix B: Indications for Referral to PCP

### Elevated Blood Sugar

Fasting blood sugar (serum) above100 mg/dL, two non-fasting (random) serum blood sugars above 200 mg/dL, or Hemoglobin A1C (non-fasting) above 6.5%.

### Dyslipidemia

Fasting LDL above 130 mg/dL, total cholesterol above 240 mg/dL; HDL below 40 mg/dL. Triglycerides (fasting) above 150 mg/dL. The following website provides a useful step-by-step guide for screening, diagnosing, and treating dyslipidemias: http://www.nhlbi.nih.gov/guidelines/cholesterol/atglance.htm.

### Hypertension

Two blood pressures above 140 mmHg systolic or above 90 mmHg diastolic greater than 1 week apart.

### Metabolic Syndrome

Any three of the following:

| Risk factor | Defining level |
|---|---|
| Abdominal obesity | Waist circumference |
| Men | >102 cm (>40 in.) |
| Women | >88 cm (>35 in.) |
| Triglycerides | ≥150 mg/dL |
| HDL cholesterol | |
| Men | <40 mg/dL |
| Women | <50 mg/dL |
| Blood pressure | ≥130/≥85 mmHg |
| Fasting glucose | ≥110 mg/dL |

Obesity is associated with insulin resistance and metabolic syndrome. The presence of abdominal obesity is more highly correlated with metabolic risk factors than an elevated body mass index (BMI). Therefore, the measurement of waist circumference is recommended to identify the body weight component of the metabolic syndrome. Some male patients develop multiple metabolic risk factors when waist circumference is only marginally increased, e.g., 94–102 cm (37–39 in.). They may have a strong genetic contribution to insulin resistance and should benefit from changes in life habits, similar to men with categorical increases in waist circumference.

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