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Treating complexity: Collaborative care for multiple chronic conditions

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Abstract

Individuals with co-morbid chronic medical illness and psychiatric illness are a costly and complex patient population, at high risk for poor outcomes. Health-risk behaviours (e.g. smoking, poor diet, and sedentary lifestyle), side effects from psychiatric medications, and poor quality medical care all contribute to poor outcomes. Individuals with major depression die, on average, 5 to 10 years before their age-matched counterparts. For individuals with severe mental illness such as bipolar disorder or schizophrenia, life expectancy may be up to 20 years shorter. As the majority of this premature mortality is due to cardiovascular disease, there is a critical need to engage these individuals around the care of chronic medical illness.

Introduction

Multi-condition collaborative care is based on the concept of ‘natural clusters’ of illnesses, illnesses with a high prevalence, high co-morbidity and bidirectional adverse interactions (i.e. outcomes of both illnesses are worse when the conditions co-occur). TEAMcare is a multi-condition collaborative care intervention aimed at improving outcomes among patients with diabetes, heart disease and major depression (Katon et al., 2010). In this paper we describe development of the TEAMcare model, our adaptation of the model for community mental health centre patients with serious mental illness, and challenges to the implementation of multi-condition collaborative care models.

Multi-morbidity (the presence of multiple chronic conditions) is highly prevalent and is associated with high levels of healthcare utilization and associated costs. Among Medicare beneficiaries, 72% of those with congestive heart failure and 52% with diabetes have two or more chronic conditions (Schneider et al., 2009). Patients with multi-morbidity are more likely to have major gaps in quality of care, and are more likely to develop complications of their chronic illnesses that lead to costly medical procedures and hospitalizations (Lin et al., 2010; Zulman et al., 2014). The onset of this multi-morbidity occurs 10 to 15 years earlier among socially disadvantaged populations (Barnett et al., 2012). A recent study of over 180,000 primary care patients emphasized that psychiatric illnesses occur at a very high rate among

these multi-morbid patients: those with one chronic medical illness had a two-fold higher rate of co-morbid psychiatric illness and those with four chronic medical illnesses had a five-fold higher rate of a co-morbid psychiatric illness (Barnett et al., 2012). Moreover, psychiatric co-morbidity appears to have a higher impact on clinical and financial outcomes among individuals with multi-morbidity (compared to those with one chronic medical condition) (Freeman et al., 2014; Lynch et al., 2014).

The co-occurrence of chronic psychiatric illness and chronic medical illness has a tremendous impact on outcomes. For example, among patients with diabetes, those with co-morbid depression have poorer self-care (i.e. adherence to diet, exercise, cessation of smoking and taking medication as prescribed) (Lin et al., 2004), increased medical symptom burden (Ludman et al., 2004) and functional impairment (Von Korff et al., 2005), and almost two-fold higher medical costs (Simon et al., 2005). Patients with diabetes and depression are also significantly more likely to develop microvascular and macrovascular complications (Lin et al., 2010), and to have costly intensive care unit admissions (Davydow et al., 2011) and ambulatory care sensitive hospitalizations (Davydow et al., 2013), and to have a 50% increased risk of mortality over a 5-year period when compared to patients with diabetes alone (Park et al., 2013). Patients with major depressive disorder also have a 60% increased risk of subsequent development of cardiovascular

disease (Van der Kooy et al., 2007) and depression has been recognized as an independent risk factor in morbidity and mortality associated with cardiovascular disease (Ruo et al., 2003).

Patients with diabetes who have co-morbid schizophrenia or bipolar disorder also have higher rates of diabetes complications (Becker & Hux, 2011), more diabetes-related hospitalizations, and increased diabetes-specific mortality (when compared to patients with diabetes and no psychiatric illness) (Becker & Hux, 2011; Mai et al., 2011). Treatment with second-generation antipsychotic medications has been associated with poorer glycaemic control among patients with pre-existing diabetes (De Hert et al., 2011), and patients with serious mental illness (SMI) appear to receive less intensive pharmacotherapy for diabetes and other cardiovascular risk factors (Nasrallah et al., 2006). Among Medicaid enrollees with diabetes, those with a co-morbid psychiatric illness receive poorer quality of outpatient diabetes care, and are significantly more likely to have one or more hospitalizations for an ambulatory care-sensitive condition (Druss et al., 2012), and to be readmitted within 30 days of discharge from a medical hospitalization (Chwastiak et al., 2014).

The chronic care model and collaborative care

There are extensive gaps in the quality of care for patients with chronic medical illnesses in the USA. For instance, only approximately 47% of patients with hypertension receive adequate treatment to lower their blood pressure below guidelines (MMWR, 2012), up to half of patients with type 2 diabetes have glycated haemoglobin (HbA1c) levels above 8% (Ali et al., 2013), and only about 40% of patients initiating treatment for depression in primary care have a clinically significant decrease in depressive symptoms (at least a 50% improvement from baseline) at 4–6 months (Gilbody et al., 2006). These gaps in usual primary care are not due to knowledge deficits of physicians, but rather to system level issues in the way care is delivered. As Wagner and colleagues have described in their chronic care model, primary care systems are better organized to diagnose and treat acute complaints rather than to provide the support patients need to develop the self-care skills to manage chronic illnesses (Wagner et al., 1996). These system deficits include brief, infrequent visits with physicians, limited time to address barriers to adherence and proactively reach out to patients who are not showing up regularly, and a lack of patient registries to monitor quality of care and disease control among a patient population within a healthcare system.

To address these deficits in quality of care, the chronic care model includes the following components: patient self-management support, linkage to community resources, use of clinical information systems, provider decision support, and delivery system re-design (Fig. 1) (Bodenheimer et al., 2002). Initially researchers responded to documented deficits in quality of care by developing interventions to treat single illnesses such as glycaemic control in patients with diabetes (Shojania et al., 2006) or blood pressure control in patients with hypertension (Walsh et al., 2006) built upon the framework of the chronic care model. Systematic reviews of collaborative care interventions focused on improving quality of care and outcomes of single conditions have generally shown positive results (Gilbody et al., 2006), but application of these models for the care of patients with multiple chronic conditions raises complex challenges.

TEAMcare

Initial research in patients with co-morbid depression and diabetes focused on collaborative care approaches aimed at improving the quality and outcomes of depression care. It was hypothesized that improving depression outcomes would enable patients to improve self-care of diabetes and this would lead to improvements in glycaemic control. Three of these initial studies that tested collaborative care versus usual care in patients with co-morbid depression and diabetes did find improvements in quality and outcomes of depression care, and savings in medical costs – but no changes in diabetes self-care or glycaemic control (Hay et al., 2012; Katon et al., 2006; Simon et al., 2007). This led to the understanding that improving quality of depression care in patients with chronic illnesses such as diabetes was necessary, but not sufficient, to improve

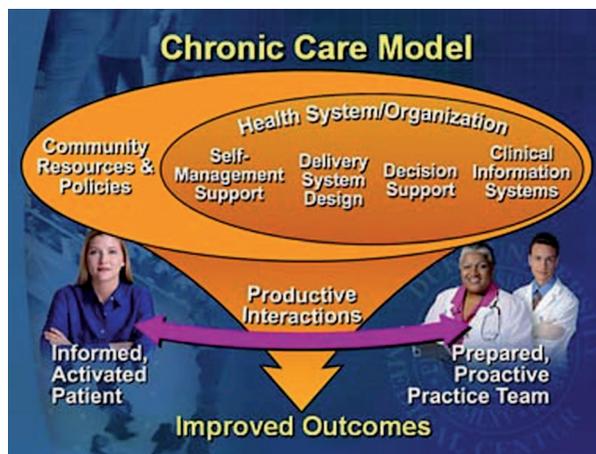


Fig. 1. The Chronic Illness Model.

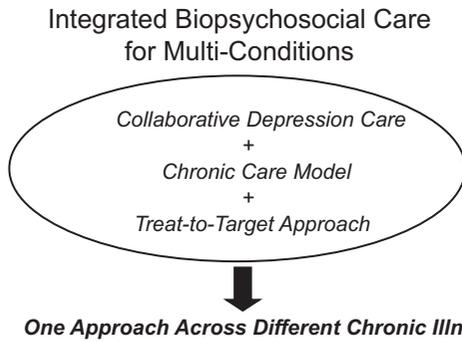


Fig. 2. Intergrated Biopsychosocial Care for Multi-Conditions.

diabetes self-care and disease control. It was proposed that, once depression was treated, a care manager could help the patient gradually develop skills and improve adherence, and work with the medical system more effectively. This hypothesis led to the development of the TEAMcare study. TEAMcare integrated a medication treat-to-target programme for cardiovascular disease (CVD) risk factor control with collaborative care for depression (Fig. 2) (Katon et al., 2010).

The target population for TEAMcare was primary care patients with poorly controlled diabetes and/or heart disease (HbA1c levels of 8.5% or greater, systolic blood pressure (SBP) of >140 or LDL cholesterol >130), and co-morbid major depression. TEAMcare patients received a 12-month intervention with a goal to manage depression and improve glycaemic, blood pressure and lipid control. The intervention combined patient-centred self-care goals (such as

improving diet, increasing exercise and cessation of smoking) with pharmacotherapy interventions to improve depression, hyperglycaemia, hypertension and hyperlipidaemia. After 12 months (or when goals were met), care was transitioned back to the primary care provider, as illustrated in Fig. 3.

Six processes comprise the core elements of the TEAMcare intervention (Table 1). First, patients in TEAMcare worked collaboratively with a nurse care manager and primary care physicians to establish individualized self-care and clinical goals. Second, nurses used motivational interviewing and problem-solving techniques to enhance adherence to self-care goals and medication, and patients received a self-care depression book and video as well as self-monitoring devices (i.e. glucometers and home blood pressure monitors) appropriate to their condition. Third, in structured visits which occurred every two to three weeks, nurses monitored each patient’s progress with respect to depression (with the PHQ-9 score), control of medical disease, and self-care goals. Fourth, treat-to-target pharmacological treatment protocols for each of the four medical disease control measures guided adjustments of commonly used medications for patients not achieving specific goals. Fifth, nurses participated in systematic caseload reviews each week with a psychiatrist and primary care physician to review patients’ progress. An electronic registry was used to monitor progress on PHQ-9 score, HbA1c, LDL and SBP. Finally, the nurse care manager provided a critical care coordination role, communicating recommendations of the supervising physicians

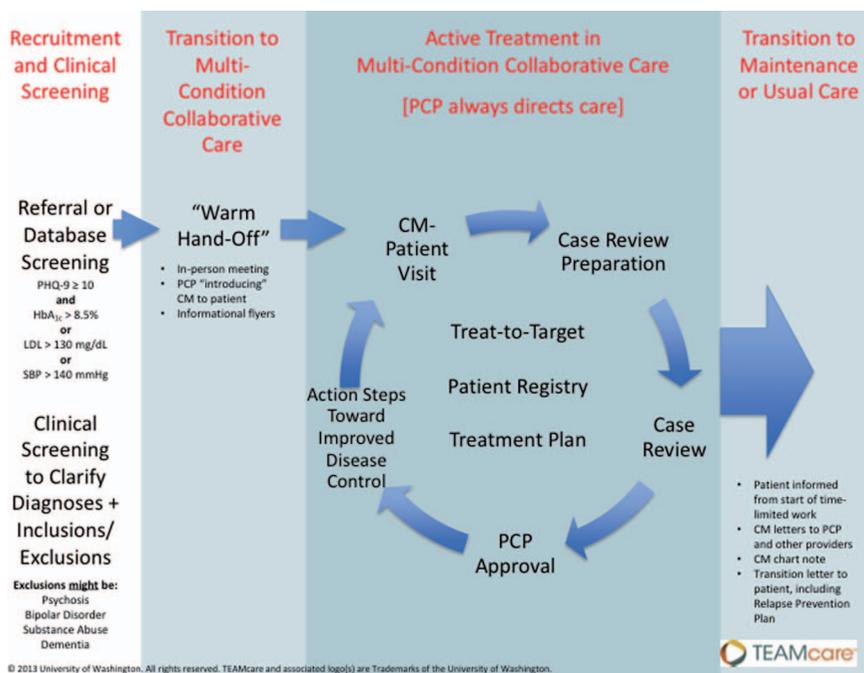


Fig. 3. Implementation of Multicondition collaborative care.

Table 1. Core elements of the TEAMcare intervention.

Task	Process
Identify goals	Specific and measurable (BP, A _{1c} , PHQ-9, SBG, number of steps)
Support self-care	Self-monitoring, adherence to medications adjustments
Monitor progress	Systematic, pro-active
Treat-to-target	Persistent and individualized
Regular case reviews	Supervised case reviews, treatment recommendations
Care coordination	Shared medical record and care plan, co-sign orders

BP, Blood pressure; SBG, Serum blood glucose; A_{1c}, Glycosylated hemoglobin; PHQ-9, Patient health questionnaire.

(about initiating or changing medications) to the patient's primary care physician. The patient's primary care physician was responsible for reviewing these recommendations and making medication changes they deemed appropriate.

In comparison to usual primary care, the TEAMcare intervention was associated with improved depressive outcomes as well as improvements in HbA_{1c}, systolic blood pressure and LDL cholesterol (Katon et al., 2010). Patients receiving the TEAMcare intervention also had significant improvements in functioning and quality of life (Von Korff et al., 2011), as well as eating a healthy diet and increasing exercise (Rosenberg et al., 2014). Cost-effectiveness analyses found that over a 2-year period the TEAMcare intervention was associated with approximately US\$600 in cost savings per patient in a capitated medical system and an estimated \$1,100 in cost savings in a fee-for-service system (Katon et al., 2012).

Other collaborative care interventions for co-morbid depression and diabetes

Two new studies have been developed to improve both depression outcomes and medical disease control in patients with co-morbid depression and diabetes (Bogner et al., 2012; Piette et al., 2011). Piette and colleagues tested a manualized cognitive behavioural programme delivered by nurses for 12 weeks, followed by nine monthly booster sessions (Piette et al., 2011). Although the initial sessions focused on patient depression management, after five sessions a pedometer-based walking programme was added. This intervention was tested in a randomized controlled trial with 291 participants with co-morbid depression and diabetes from both community-based clinics and the US Department of Veteran Affairs (VA) hospital clinics (Piette et al., 2011). The nurses worked relatively independently of primary care but also communicated with primary care

doctors regarding patient suicidal ideation, discontinuation of antidepressant medication, persistent elevated symptoms or a need for a prescription refill. Intervention patients were found to have significant improvements compared to usual care controls in depression outcomes and systolic blood pressure but no improvement in the primary outcome of HbA_{1c} levels were observed.

Bogner and colleagues randomized 180 patients with co-morbid depression and diabetes from three community-based primary care clinics in inner-city Philadelphia to a 12-week collaborative care intervention or usual care (Bogner et al., 2012). A care manager integrated into the primary care clinic provided three in-person and two telephone visits over 3 months. All patients had been prescribed both an antidepressant and oral hypoglycaemic agent in the previous year. The intervention aimed to improve education about depression and diabetes, adherence to guideline treatment recommendations, adherence to glucose monitoring, and clinical status. More than 60% of the clinic population were non-Caucasian (over 50% were African American). After 12 weeks, the patients who received the intervention had significant improvement in adherence to both antidepressant and oral hypoglycaemic medications compared to usual care. Intervention patients also had significant improvement in depression and HbA_{1c} outcomes at 12 weeks (Bogner et al., 2012).

Natural cluster of serious mental illness, diabetes and cardiovascular disease

Collaborative care models may provide a robust clinical and policy framework for the integration of care for chronic medical conditions and treatment for SMI. The National Survey on Drug Use and Health (NSDUH) defines SMI as a mental, behavioural, or emotional disorder (excluding developmental and substance use disorders) that is (1) diagnosable currently or within the past year, (2) of sufficient duration to meet diagnostic criteria specified within the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 1994, 2000), and (3) results in serious functional impairment, which substantially interferes with or limits one or more major life activities (SAMHSA, 2013).

Individuals with SMI experience higher rates of diabetes, hypertension, and CVD compared to the general population, leading to premature mortality (Crump et al., 2013; Druss et al., 2011). These individuals are at increased risk of the two major potentially modifiable cardiovascular risk factors, smoking and obesity (Correll et al., 2010; Dickerson et al., 2013). The National Cardiometabolic Screening

Study of over 10,000 psychiatric outpatients at mental health centres in the USA found that over half were obese (Correll et al., 2010). It has been estimated that tobacco-use related disorders are responsible for half of the premature mortality for those with SMI (Callaghan et al., 2014; Critchley & Capewell, 2003).

Cardiovascular risk reduction strategies must be tailored to the unique vulnerabilities that affect the ability of patients with SMI to manage chronic medical conditions such as diabetes. Impaired attention, concentration and memory – caused or exacerbated by affective disorders or psychotic disorders or by medication side effects – can interfere with a patient's ability to understand treatment recommendations. Moreover, the adverse metabolic side effects of second-generation antipsychotic medications and other psychotropic medications need to be specifically managed (De Hert et al., 2011). Stigma, discrimination and limited access to medical care can all affect quality of medical care (Siantz & Aranda, 2014).

Medical services for patients with SMI are typically provided by primary care and specialist medical clinicians who are outside of the clinics where patients receive mental health services. Because of this fragmented care, treatment of chronic medical conditions in this vulnerable patient group presents complex clinical and organizational challenges. Many individuals with SMI have trouble navigating general medical services when referred for care, and many general medical providers lack the time or tools to effectively address the general medical needs of patients with SMI. One sample of over 150,000 adults found individuals with SMI were over 2.5 times more likely to report difficulty in accessing healthcare services (Bradford et al., 2008). Psychiatrists and primary care physicians alike have been slow to adopt recommended metabolic CVD screening guidelines for adults with SMI on psychotropic medications (Barnes et al., 2007; Mitchell et al., 2012; Morrato et al., 2009).

Given the intensity of treatment and management required for SMI disorders, many individuals with SMI consider their mental health centre their home site for healthcare. Delivering interventions to target CVD risk reduction on-site at community mental health centres has compelling advantages, as the co-location of primary care services in mental health settings may reduce barriers to medical care. Mental health centre clinicians have training and experience to work with patients with severe symptoms and functional impairment, and to address these as barriers which interfere with effectively managing chronic illness. Changing health behaviours can be difficult, but mental health clinicians are experts in behavioural change. Moreover, frequent reinforcement can play a critical role in successful long-term

adoption of behaviour changes—and individuals with SMI typically have frequent contact with mental health clinicians, providing opportunities for support and reinforcement of positive behaviour changes such as increasing physical activity and reducing fat and total calorie intake in the diet.

There is emerging evidence that such co-location of care is associated with improved processes of care. In a study at a single VA hospital, 120 patients with SMI were randomized to receive primary care through a co-located medical team in the mental health clinic or through the VA general medical clinic. Veterans (ex-military personnel and their families) Patients who obtained care in the integrated clinic received on-site primary care and case management that emphasized preventive medical care, patient education and close collaboration with mental health providers. Patients treated in the integrated care clinic were significantly more likely to make a primary care visit, had a greater number of visits, and were more likely to receive preventive measures (Druss et al., 2001). Subsequent evaluations of 10 such co-located clinics in the national VA have demonstrated that patients from co-located clinics are more likely to receive some (but not all) preventive services, including colorectal cancer screening, screening for metabolic disorders, and to have good blood pressure control (Kilbourne et al., 2011a, 2011b).

In 2009, in response to growing concerns about the excess morbidity and mortality among mental health consumers, the federal Substance Abuse and Mental Health Services Administration (SAMHSA) issued the Primary and Behavioral Healthcare Integration grant programme. Since 2009, this grant programme has provided funding of more than \$20 million per year to 100 community mental health organizations across the country to provide primary care services and wellness and prevention services to their clients, either directly or through partnerships. The goal is to identify best practices for specialist mental health homes that can be implemented more broadly (Scharf et al., 2013). Evidence-based interventions are therefore critically needed for these models of co-located care.

There is evidence that patient self-management support is effective in improving medical outcomes among patients with SMI (Siantz & Aranda, 2014). Self-management support can even be effectively delivered through such low-cost and scalable strategies as the use of a personal electronic health record (Druss et al., 2014). Chronic disease self-management, however, typically refers to behavioural interventions (most often groups) to minimize disability and delay progression of chronic illness through the support of healthy lifestyle behaviours, management of emotional reactions to illness, finding and utilizing

resources, and working collaboratively with care providers (Lorig, 2002).

Similarly, there is clear evidence that care management can improve physical health outcomes among patients with SMI. The Primary Care Access Referral and Evaluation (PCARE) trial demonstrated the effectiveness of locating a nurse care manager in a specialist mental health clinic with the goal of increasing the access to and engagement with primary care services among Community Mental Health Center (CMHC) patients with SMI. In a randomized controlled trial of 407 patients with SMI at an urban community mental health centre, PCARE was associated with increased preventive services and improved cardiac risk index compared to usual care (Druss et al., 2009).

Multi-condition collaborative care for diabetes and serious mental illness

There may be too few studies to date to definitively identify the ‘active’ ingredients to effective models to improve medical outcomes among psychiatric patients (Bradford et al., 2013), but systematic screening and the use of medically supervised qualified care managers would appear to be essential components. Three collaborative care interventions, designed to include both care management and support for patient self-management in order to improve cardiovascular outcomes among patients with SMI, have been recently tested in randomized controlled trials.

Integrated Illness Management and Recovery (I-IMR) is an 8-month programme combining training in self-management for both psychiatric and general medical illness. In a randomized controlled trial 71 middle-aged and older adults with SMI and (a variety of) chronic medical conditions were randomly assigned to receive I-IMR or usual care. Compared to usual care, I-IMR was associated with greater improvement in participant and clinician ratings for psychiatric illness self-management, greater diabetes self-management and an increased preference for detailed diagnosis and treatment information (Bartels et al., 2014).

Life Goals Collaborative Care (LGCC) is a collaborative care intervention targeting CVD risk factors in patients with bipolar disorder. In a pilot randomized controlled trial of 68 patients, the intervention was not associated with reductions in CVD risk factors at 12 months compared to enhanced treatment as usual (Kilbourne et al., 2012). In the Self Management Addressing Heart Risk trial (SMAHRT), participants receiving LGCC had a statistically significant decrease in blood pressure compared to those receiving enhanced usual care (Kilbourne et al., 2013). This intervention included the LGCC self-management support group, and also

care management and tracking of health behaviours in a registry and dissemination of treatment guidelines to mental health and primary care providers.

Our group has adapted the TEAMcare model to target cardiovascular risk reduction among community mental health centre patients with type 2 diabetes. This intervention combines collaborative care for psychiatric illness (care management and patient self-management support) with a treat-to-target approach to intensify pharmacotherapy for CVD risk factors. Key components of the original TEAMcare model are included: an individualized health plan with specific and measurable targets, regular visits with a nurse care manager to support patient self-management, and weekly team-based systematic caseload reviews for pharmacotherapy intensification using a case-load registry and a treat-to-target approach to achieve treatment goals (Table 1).

Significant adaptations from the original TEAMcare model were required, both with respect to the team structure and the intervention itself:

- The multi-disciplinary team is based at the mental health centre (not the primary care clinic),
- The nurse care manager is a community mental health centre/psychiatric nurse (not a primary care nurse). Caseload sizes are smaller than for the nurse care managers in primary care studies, given the clinical complexity of patients, and also the increased efforts towards outreach, including home visits,
- The intervention, training and manuals have been adapted to address neurocognitive deficits and psychotic symptoms that are prevalent among individuals with serious mental illness, and can interfere with engagement in self-care and medical care. To address these cognitive problems, the intervention incorporates repetitive reflection, and the use of visual aids and simple concrete materials,
- The adverse metabolic effects of second-generation antipsychotic medications are collaboratively managed with the patient’s psychiatric prescriber. For example, changing to an antipsychotic medication with fewer metabolic effects or adding metformin to mitigate the side effects are considered in collaboration with the patient’s prescribing clinician,
- Collaboration with other members of the patient’s mental health treatment team is also incorporated, and mental health case managers and peer support staff are involved in outreach to increase engagement and adherence with the nurse care manager – and to reinforce the treatment plan.

The adaptations to the core elements of the TEAMcare model that were required for implemen-

Table 2. Core elements of collaborative care models: comparison of implementation in primary care setting and community mental health setting.

TEAMcare core elements	TEAMcare in primary care	Community mental health centre TEAMcare
Identification of goals	Patient-driven self-care goals Team identifies treatment values that are not at target and supports PCP in optimization of pharmacotherapy	Patient-driven self-care goals Team identifies treatment values that are not at target and supports PCP and CMHC psychiatrist in optimization of pharmacotherapy
Support self-care – behaviour emphasized	Behavioural activation to decrease depression Motivational interviewing to target behaviour change	Motivational interviewing to target behaviour change Increased emphasis on tobacco and alcohol use Support of socialization Behavioural activation to decrease impact of depression and negative symptoms
Monitor progress	Registry in Access [®] , maintained by care managers	Registry in Access [®] , maintained by care managers
Treat-to-target outcomes	A1c; Blood pressure; LDL; Depression	A1c; Blood pressure; LDL; Depression
Regular case reviews	Weekly by team	Weekly by team
Care coordinator	Primary care nurse	Community mental health centre (psychiatric) nurse
Additional changes to model		
Caseload size of care manager	1:40	1:20
Place of most interactions with patient	Primary care clinic	Community mental health centre
Outreach	Phone outreach by care manager	Care manager uses phone and home visits for outreach CMHC team members help with outreach to increase engagement

PCP, Primary care provider; CMHC, Community mental health center; A_{1c}, glycosylated hemoglobin; LDL, low density lipoprotein.

tation in community mental health settings are described in Table 2. The most significant adaptations are the setting, the utilization of psychiatric nurses as medical care managers, the increased emphasis on outreach (and correspondingly smaller caseload), and the structured collaboration with the community mental health centre clinical team.

Implementation and dissemination

There is growing evidence that collaborative care models are effective across a broad range of mental health conditions treated in primary care and specialist mental health settings (Woltmann et al., 2012), and the multi-condition collaborative care interventions described above show promise for the integration of medical and psychiatric care for complex patients, including those with serious mental illness. But it is a very complex task to move from reading about a randomized trial of a new model of care to implementing it in a real-world clinical setting. Our experience at the University of Washington is that most systems need a range of support to accomplish successful implementation. Models such as TEAMcare require healthcare systems to work in different ways, including role changes for some professionals, development of a registry to track quality of care and patient outcomes, and administrative support for the financial aspects of these changes. Key leaders – including administrators, mental health, primary care and nursing leadership – must be aligned with these changes.

The TEAMcare dissemination centre (teamcare-health.org) has worked with multiple healthcare systems both in the USA and Canada to implement this new model of care. Our TEAMcare support team will often have several initial conversations with leaders, present a webinar on the essential components of TEAMcare, and then contract to provide a year of support services. These services usually include an onsite two-day training of care managers, physicians and other leaders. We then follow up with monthly support calls to clinics and teams to review patient recruitment efforts, how weekly team meetings are going, whether teams have implemented registries and have IT support. It is helpful for key administrators to be on some of these calls so that logistical problems can be efficiently handled. One of the key components of these support calls is to review patient level outcomes such as changes in PHQ-9 depression scores as well as HbA_{1c}, systolic blood pressure and LDL cholesterol. In large systems we expect initial variability in quality of care and outcomes as teams are learning how to efficiently manage a population of patients, and teams with problematic outcomes can then be targeted for more support by our implementation team. These monthly calls also help us to identify early adaptor teams that have better outcomes; we can use the processes these teams have developed to help teams that are struggling. After 10 or 11 months of these support phone calls we then follow up with a one-day onsite booster session which focuses on teams showing their data and describing their gradual evolution to overcome barriers to implementation.

There are significant challenges for the successful dissemination of these collaborative care models for multiple conditions, such as regulatory barriers that limit the exchange of information between primary care and mental health and substance abuse treatment settings. Several additional supporting elements seem essential for the successful implementation and dissemination of these collaborative care models for complex patients. As patient-centred medical homes (including Medicaid behavioural health homes) move forward, it will be important to develop and measure indicators not only for individual general medical and mental health conditions, but also for the key processes associated with clinical integration: effective communication among providers, care coordination, and continuity of care (Druss & Mauer, 2010). In addition to the development of quality metrics, appropriate financial models must be established, health information technologies (patient registries, electronic prescribing) need to be adapted, and technical support should be made available (Nutting et al., 2009).

Conclusion

With the implementation of the Affordable Care Act in 2014, US states have an unprecedented opportunity to improve the health of millions of Americans by integrating physical care with mental healthcare. The challenge is to develop and implement systems of care in which healthcare providers across disciplines collaborate effectively to realize this goal. For high-cost patients with complex co-morbidity, multi-condition collaborative care appears to be a robust approach to achieving the triple aim of more satisfied patients, better health outcomes and lower costs.

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