DISSEMINATION OF INTEGRATED CARE WITHIN ADULT PRIMARY CARE SETTINGS

THE COLLABORATIVE CARE MODEL

I. EXECUTIVE SUMMARY

The integration of behavioral health and general medical services has been the focus of intensive resources, planning, and education efforts for at least a decade. Significant, high-quality scientific health services research spanning three decades has identified one model in particular as being effective and efficient in delivering improved outcomes for a population of patients with behavioral health disorders seen in primary care settings, while also controlling costs and improving access and satisfaction with care. Known as the Collaborative Care Model, it separates itself from other attempts to integrate behavioral health services through its wide adaptation and steady reliance on consistent principles of chronic care delivery, as well as attention to accountability and quality improvement (QI).

Over time, through many large-scale adaptations encompassing thousands of patients, expert consensus has identified four essential elements of Collaborative Care. These include the provision of care that is 1) team-driven, 2) population-focused, 3) measurement-guided, and 4) evidence-based. A Collaborative Care team is multidisciplinary, shares roles and tasks, and together is responsible for the health outcomes of their patients. As a whole, the team is focused on the entirety of their patient population, regardless of the patient's current level of engagement in treatment. The team is equipped with tools to help manage their population of patients efficiently, often conceptualized as a disease registry. Together, this team utilizes measurement-guided patient-centered outcomes to guide the delivery of evidence-based care in order to achieve "treat-to-target" clinical goals for each patient. These core processes, in aggregate, allow each team to be held accountable to the care they provide and improve upon their processes of care to achieve better outcomes in cost savings, satisfaction, access to care, and health for the patients and systems they serve.

Each of these core elements can be adapted to a variety of community settings, and this report highlights the background, eligibility requirements, adaptation of the essential elements, accountability, and quality improvement efforts in five of the largest Collaborative Care implementations to date from the persons directly involved in their implementation. Lessons learned from these early adopter programs provide invaluable insights for systems seeking quality, evidence-based "integrated care" solutions.

The American Psychiatric Association (APA) and the Academy of Psychosomatic Medicine (APM), jointly represented in authorship of this report, are dedicated to advancing the scientific understanding of evidence-based integrated care by outlining the current state of knowledge in this complex field and advocating for productive dialogue surrounding these models through the publication of this report.

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This report is dedicated in loving memory to the spirit and passion of Dr. Wayne Katon, whose body of scientific evidence and character lives on.

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II. WORKGROUP BACKGROUND

A. Formation of Workgroup

At the APA September Components Meeting of 2014, several committees identified the need for APA policy and guidance for membership defining evidence-based standards of integrated care models and showcasing emblematic programs of robust Collaborative Care implementation. The Council of Psychosomatic Medicine (PSM), under the guidance of Dr. David Gitlin, and the APM, under the guidance of then-President Dr. Linda Worley, convened a workgroup chaired by Drs. Rundell and Vanderlip to examine existing models and assist interested organizations with defining evidence-based integrated care implementations. Both organizations were concerned that emerging policy documents and implementation recommendations were often not sufficiently evidence-driven. It is important to address the increasing national interest in integrated care model dissemination through the best available data and experience.

B. Membership of Workgroup

Following further discussions, the Workgroup membership was specifically selected to represent several large-scale integrated care implementations nationally. This included psychiatric and non-psychiatric leadership from the following:

1) The University of Washington Advancing Integrated Mental Health Solutions (AIMS) Center (Marc Avery, M.D., and John Fortney, Ph.D.)

2) The Veterans Health Affairs (VA) population (James Rundell, M.D. and John Fortney, Ph.D.)

3) Active military/Department of Defense (Charles Engel, M.D., M.P.H.)

4) The Minnesota DIAMOND (Depression Initiative Across Minnesota—Offering New Directions) project (Mark Williams, M.D.)

5) An academic/university-based health system – The University of California, Davis (David Liu, M.D.)

Carol Alter, M.D., provided additional representation from the APM and APA Council on Healthcare Systems and Financing. Consultants providing oversight and guidance also included APA administration from the Office of HIV Psychiatry (Ian Hedges) and the Office of the CEO and Medical Director (Kristin Kroeger), as well as Lori Raney, M.D., Chair of the APA Workgroup on Integrated Care. Drs. Gitlin and Crone were representatives from the APA PSM Council and the APM.

C. Charge of Workgroup

Beginning February 2015, the Workgroup convened a series of teleconferences. During the first teleconference, the group discussed the charge of the Workgroup and expected product and timeline of development. Issues discussed at length included the scope of the Workgroup report and how to conduct the review of evidence-based literature on integrated care models. At the conclusion of the first teleconference, there was considerable interest in producing a report that highlighted the importance of primary care integration through the Collaborative Care Model. Drs. Rundell and Vanderlip reformatted the Workgroup charge to be inclusive of a range of implementations while calling for consistency in definitions to be used in integrated care discussions and use of a common language when addressing essential components of Collaborative Care Models. At the conclusion of the second teleconference call, an outline for the report was developed based on Workgroup discussions and review of the literature. The Workgroup elected to keep this report focused on integrated care models for mental health and primary care, though it is important to acknowledge that there is impressive evidence for the effectiveness of integrating mental health services with specialty medical-surgical care (Sharpe et al. 2014) and integrating medical and preventive services into specialty care of the seriously mentally ill (Druss et al. 2000, 2002, 2010).

The Workgroup's final charge was to produce a working set of principles defining evidence-based integrated care implementation based on review of published literature and expert consensus when sufficient evidence could not drive a recommendation. Adaptations of these principles through in vivo implementations are highlighted. This product is intended to facilitate standardization of educational materials and messaging for APA and APM membership as well as policy-makers, external and allied organizations, health system partners, payers, and the general public.

III. SUMMARY OF EVIDENCE FOR INTEGRATED CARE

The notion of integrated care encompasses a broad spectrum of health services interventions intended to blend primary care services with traditional mental health services. Integrating mental health into primary care settings, as well as the blending of primary and preventive medicine into traditional mental health settings represents a more holistic approach to treatment than the traditional consultative and referral models. Bringing mental health services to primary care normalizes and de-stigmatizes treatment for behavioral health disorders, simultaneously increasing access for patients by making evidence-based mental health services available in their regular primary care clinics. The delivery of primary care services to mental health settings also can overcome barriers to receiving medical and preventive care, offering increased convenience and familiarity with services. Merging mental health services within primary care services is more studied than the reverse; the science around effective health services delivery is greater for these models.

For models integrating mental health into primary care, mental health providers can impact the care of more patients than in the specialty mental health referral sector. Integrated mental health providers take on more consultative and team-based roles and focus on helping primary care providers (PCPs) treat mental health disorders, leveraging their skills and expertise to reach more patients in need. In addition, integrated care encounters are typically briefer and more problem-focused than traditional specialty mental health encounters.

The terminology around integrated care models is somewhat inconsistent and confusing. The terms "integrated care" and "Collaborative Care" have often been used interchangeably, while at other times these terms reflect subtle but important differences in approach. For this report, we define Collaborative Care as the embodiment of the model originally developed by Katon and colleagues at the University of Washington, demonstrated to be clinically effective in randomized control trials (W. Katon et al. 1995; W. Katon et al. 1996). Collaborative Care is a specific type of integrated care that operationalizes the principles of the Chronic Care Model (E. Wagner 2001) to improve access to evidence based mental health treatments for primary care patients.

There is expert consensus that all effective Collaborative Care Models share four core elements: 1) team-driven, 2) population-focused, 3) measurement-guided, and 4) evidence-based. These four elements, when combined, can allow for a fifth guiding principal to emerge; accountability and quality improvement. Table 1 reviews the core elements of Collaborative Care implementation. Collaborative Care is *team-driven*, led by a PCP with support from a "care manager" (CM) and consultation from a psychiatrist who provides treatment recommendations for patients who are not achieving clinical goals. Other mental health professionals can contribute well to the Collaborative Care Model. Collaborative Care is *population-focused*, using a registry to monitor treatment engagement and response to care. Collaborative Care is *measurement-guided* with a consistent dedication to patient-reported outcomes and utilizes *evidence-based* approaches to achieve those outcomes. Additionally, Collaborative Care is

patient-centered with proactive outreach to engage, activate, promote self-management and treatment adherence, and coordinate services.

Table 1: Essential Elements of Collaborative Care

Element	Definition
Team-Driven	A multidisciplinary group of healthcare delivery professionals providing care in a coordinated fashion and empowered to work at the top of their professional training.
Population-Focused	The Collaborative Care team is responsible for the provision of care and health outcomes of a defined population of patients
Measurement-Guided	The team uses systematic, disease-specific, patient-reported outcome measures (e.g., symptom rating scales) to drive clinical decision-making.
Evidence-Based	The team adapts scientifically proven treatments within an individual clinical context to achieve improved health outcomes.

Because of these principles, Collaborative Care has demonstrated cost-effectiveness, significant improvements in clinical outcomes, and high levels of satisfaction in providers and patients in diverse community settings. It is *practice-tested* with sustained adoption in hundreds of clinics across the country. By aggregating patient-reported outcomes across providers and clinics, Collaborative Care also is *accountable* to payers and amenable to continuous *quality improvement*. Collaborative Care has consistently demonstrated the capacity to deliver improved clinical, cost, and quality outcomes, including better satisfaction and access to services than traditional models of care delivery.

The Cochrane Collaborative conducted a meta-analysis of 79 randomized controlled trials comparing Collaborative Care to usual care for primary care patients with depression and anxiety, finding small-to-medium effect sizes for short- and long-term clinical outcomes (Archer et al. 2012). The clinical improvement associated with Collaborative Care is meaningful to patients and providers. In randomized trials, compared to usual care, Collaborative Care doubles depression treatment response rates(Unützer 2002). Quality improvement data from real world implementation of Collaborative Care programs suggests that similar outcomes can be achieved in a variety of settings (Rubenstein et al. 2010; Unützer et al. 2012; J. Fortney et al. 2012).

Because Collaborative Care is a multi-faceted intervention with core elements, there is not strong evidence about the relative contribution of each core element. However, because there has been variation in some intervention components across randomized controlled trials, it is possible to empirically examine the contribution of some components using meta-analysis techniques. Using data from multiple randomized controlled trials, one Collaborative Care intervention component stands out as being highly predictive of clinical outcomes. Having regularly scheduled CM supervision by a psychiatrist (i.e., conducting weekly patient caseload

reviews) was significantly correlated with improved outcomes (Bower et al. 2006; S Gilbody, Bower, and Fletcher 2006). Thus, having specialty mental health providers on the team most likely contributes to the clinical effectiveness of Collaborative Care. In addition, evidence from meta-analyses suggests that skill sets brought by nurse CMs in those settings studied, especially those with past mental health service delivery experience, generate better clinical outcomes than CMs from other disciplines (Bower et al. 2006; S Gilbody, Bower, and Fletcher 2006; Thota et al. 2012). Another meta-analysis examined whether it matters if the members of the Collaborative Care team are physically co-located with one another. The authors concluded that there is robust empirical evidence for the effectiveness of Collaborative Care regardless of the degree of physical co-location. In fact, several studies have shown that a centralized mental health team can effectively support multiple remote PCPs (G. E. Simon et al. 2004; G. E. Simon et al. 2011; J. C. Fortney et al. 2007; J. C. Fortney et al. 2013; Dietrich et al. 2004; J. C. Fortney et al. 2015).

This review synthesizes the core elements of the Collaborative Care Model through expert consensus based on lived experience with wide-scale implementations involving thousands of patients. The core elements of Collaborative Care were re-confirmed from the initial findings of an interdisciplinary national summit on integrated care in 2011 at the Advancing Integrated Mental Health Solutions (AIMS) Center at the University of Washington. As dissemination efforts grow around integrated care, it is hoped that this analysis brings attention to the Collaborative Care Model and highlights the effective implementation of quality integrated care through defining and rationalizing the essential components of Collaborative Care.

IV. ESSENTIAL ELEMENTS OF THE COLLABORATIVE CARE MODEL

A. Team-Driven Care

1. Definition:

> A multidisciplinary group of healthcare delivery professionals providing care in a coordinated fashion and empowered to work at the top of their professional training.

Team-based Collaborative Care for mental disorders in primary care is operationalized within the Chronic Care Model framework articulated by Wagner and colleagues (E. H. Wagner, Austin, and Von Korff 1996). Team-based care is defined as a multidisciplinary group of care delivery professionals (e.g., office and support staff, nurses, CMs, PCPs, and appropriate specialists) providing and supporting care and implementing and revising the treatment plan. Broadly speaking, mental health practitioners potentially relevant to the Collaborative Care Model for mental health conditions in primary care may include a psychiatric nurse practitioner, social worker, licensed counselor or therapist, psychologist, or psychiatrist. This may be contrasted with medical model approaches involving varying degrees of "physician as treatment team." In that model, the physician fulfills most health care delivery and patient treatment roles.

2. Components:

Collaborative Care uses behavioral or general medical CMs to track the well-being and care of a population and uses psychiatrists to provide consultation to CMs and PCPs and, in some settings, direct consultative care to patients (Unützer 2002). Most studies of Collaborative Care management have relied on three main members of the health care team. These are: (a) the PCP; (b) a CM; and (c) a consulting psychiatrist (**Figure 1**). The PCP oversees the overall patient care plan and is the ultimate decision-maker for the clinical team.

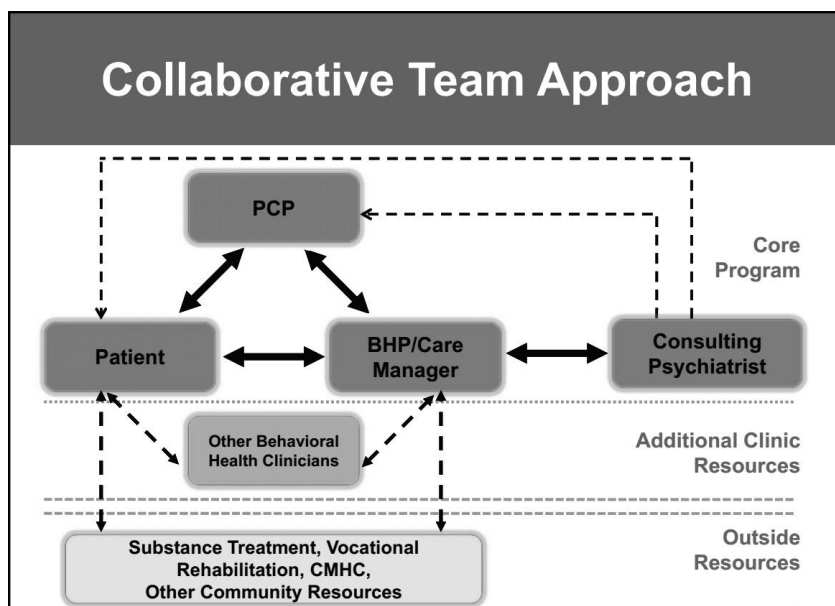**Figure 1: Team Diagram of Collaborative Care Model (**aims.uw.edu**)**

Figure 1: Dashed lines indicate less frequent methods of communication; bold lines indicate more frequent methods of communication.

The CM is the lynchpin member of the care team, linking the team to the patient and to each other. Accomplishing this often involves the use of telephone, measurement-based clinical outcome metrics (e.g., the nine-item Patient Health Questionnaire for depression [PHQ-9]) and health information/electronic medical record (EMR) technologies, such as registries, alerts, and reminders. Care managers also work to keep patients engaged in their care, assess treatment adherence, and explore treatment preferences. This information is then communicated to the team by available means (e.g., in-person, telephone, practice team meetings). The CM often prepares relevant clinical information to help ensure that periodic caseload review is accomplished efficiently when team members, including the psychiatric consultant, are present.

The consulting psychiatrist reviews the CM's caseload at routine intervals—a task often facilitated by using some or all of the health information technologies previously noted. Recommendations are formulated (e.g., medication or dosing changes, addition or discontinuation of psychosocial interventions, referral to alternative behavioral health services or assessments) for the treatment team, particularly the primary care clinician and the CM with regard to the need to change or maintain individual patient treatment plans. Section VI reviews the advantage of psychiatric consultation to the Collaborative Care team. The facilitated caseload review and consultative role of the psychiatrist allows for individualized case-by-case feedback to the PCP, a form of learning that most closely approximates adult learning styles and may be superior to didactic seminars or algorithmic flowcharts.

Other members of the Collaborative Care team may include a primary care-based psychologist or social worker for the purpose of patient assessment, enhancing access to evidence-based psychotherapies, and urgent assessment of a patient's potential to harm themselves or others. A nurse or mental health specialist may be appropriate in the CM role, and teams may employ other members to help patients implement their own self-management plan such as peers or community health workers. Often, CMs have training, skills, and experience in managing patients with other chronic illnesses (e.g., diabetes, cardiovascular disease) and permit simultaneous care management of patients with multiple comorbidities. Of note, meta-analyses of Collaborative Care studies for depression link characteristics of the CM to improved patient outcomes; specifically greater mental health expertise (S Gilbody, Bower, and Fletcher 2006; Bower et al. 2006) and nursing backgrounds (Thota et al. 2012).

3. Rationale:

The goal within Wagner and colleagues' notion of team-based care is "to promote a systematic, planned approach to care" for chronic health conditions (E. Wagner 2001). The advantage to this approach is its capacity for efficiency and effectiveness through: (a) productive and planned patient and provider interactions; (b) informed, activated patients and their partners; and (c) a prepared, proactive clinical team. More specifically, as the elements of team care have been employed within research trials, the rationale for team-driven care is to match the skills of team members to specific tasks designed to maximize quality of care and

produce timely and measureable patient status improvements. Many—perhaps most—patients with anxiety and depressive disorders do not improve in response to the first treatment, and a sizable proportion never adhere to the treatment plan long enough to lead to reasonable expectations of improvement. Regularly collecting valid status measurements facilitates proactive adjustment of the treatment plan when indicated, the provision of feasible self-management strategies for affected patients, and keeping patients fully engaged in their care over time. This requires diverse skill sets possessed by no single member of the treatment team. The team-driven approach also allows for internal accountability and follow-up, checks and balances, and may help protect members from burnout and turnover when managing challenging clinical scenarios (Helfrich et al. 2014).

4. Narrative Description/Case Study: *Introduction to "the team".*

The following section serves to facilitate better understanding of the Collaborative Care team through a clinical example.

> John J. is a 48-year-old white male visiting his PCP, Dr. Stevens, for a follow-up visit for managing hypertension. During the visit, John's PHQ-9 score is taken and found to be 16, in the moderate range for major depression. John was treated by Dr. Stevens 12 months ago for depression and remains on fluoxetine 20 mg daily, to which he had a fair initial response. This is John's first PHQ-9, part of the new Collaborative Care protocol instituted by Dr. Stevens's clinic.

> Dr. Stevens discusses the test results briefly with John during their clinic appointment and introduces him to Ms. Cook, a CM/behavioral health specialist with the clinic's Collaborative Care team. Ms. Cook is immediately available in the clinic to meet patients coming and going from appointments at the request of the PCP or other clinic staff. John agrees to speak with Ms. Cook after the appointment, and Ms. Cook runs through a few patient screens for behavioral health and substance use conditions that are often comorbid with major depressive disorder. John screens negatively for alcohol use or a history of mania. Ms. Cook discovers that John has recently moved out of his house, and he and his wife are separating. He is staying with a friend in town, and it has been hard for him to make it to work consistently. He often goes to bed late and sleeps in, missing his alarm in the morning, and eventually calls in sick. Ms. Cook shares some of this initial information with Dr. Stevens after their appointment, and Dr. Stevens increases John's fluoxetine to 40 mg daily. She also engages him in a behavioral activation strategy to improve his mood that includes getting together with his friend Joe over the weekend.

> Three days later, Ms. Cook has her weekly meeting with Dr. Brown, the consulting psychiatrist. They discuss John, the new addition to Ms. Cook's caseload. Dr. Brown acknowledges the PHQ-9 score and the fluoxetine increase and reminds Ms. Cook of additional brief intervention techniques she has reviewed in the past with other patients. Five weeks later, during their caseload review, Dr. Brown notices John's PHQ-9 score is unchanged. Ms. Cook notes that he stopped taking the fluoxetine the week

before because of some ongoing jitteriness. Dr. Brown recommends switching to sertraline instead, and Ms. Cook conveys the recommendation to Dr. Stevens by flagging him in the electronic health record. Dr. Stevens reviews John's other medications the following day and writes a prescription for sertraline after Ms. Cook has called John to discuss the recommendations of the consulting psychiatrist. John agrees to try the sertraline. Ms. Cook reviews the side effects with John and offers her contact information in addition to Dr. Stevens's office if he has any problems with the medication. Dr. Stevens phones Dr. Brown and asks about the titration schedule of sertraline and starting dosage to confirm his management is appropriate. They agree to continue with increases in this medication with a target PHQ-9 of less than 5 if possible.

By constant communication and sharing of tasks, the Collaborative Care team can work at their optimum level of efficiency and competence and share in the management of patients in a coordinated fashion.

B. Population-Focused Care

Healthcare costs as a percentage of the U.S. gross domestic product are unsustainable. Consequently, it is clear that models of reimbursement and care delivery designed around efficacy of service delivery need to be counterbalanced by attention to the population. Collaborative Care Models are a nexus for balancing population and individual health but must incorporate principles of population management to be successful.

1. Definition:

> The Collaborative Care Team is responsible for the provision of care and health outcomes of a defined population of patients.

When implemented through the lens of Collaborative Care Models, three traditional components of population health (D. Kindig and Stoddart 2003; D. A. Kindig 2007) can be modified as follows:

(a) *Health outcomes and distribution within a population* – By reviewing a registry list of patients each week in systematic case review, the Collaborative Care team can sort patients who need more attention regardless of their level of clinical engagement. Patients who have been receiving care coordination resources for some time without demonstrating interest in engaging also can be identified, allowing refocusing of health resources to other patients or intensification of outreach efforts.

(b) *Patterns of determinants of these outcomes* – Individual clinicians are accustomed to treating patients one at a time. Aggregating data on larger groups of

patients allows for identifying trends in delivery system gaps (e.g., lack of social services, addiction screening, presence of comorbid conditions such as chronic pain, financial limitations to medications), which make them easier to overcome.

(c) *Relevant policies and interventions* – Aggregated data and population management facilitates the systematic advocacy for improved legislative policy and system-wide interventions that are an essential component of population health (e.g., the way opiates are managed in a practice or the lack of alternatives for mentally ill patients in emergency settings needing housing or inpatient beds).

2. Components:

(a) Monitoring population outcomes

Population-based care requires effective data collection and outcome monitoring. These data typically include symptom measures (e.g., PHQ-9), process measures (e.g., access), satisfaction measures, and cost measures (e.g., emergency department utilization). A first step in population management is generally to try to reach consensus on measures that are relevant for a given practice. Standardizing the measures used and setting up a way to compare practices or sites on population outcomes is an important first step. When possible, screening tools generally also can be used to monitor outcomes. A second step in population management is to block time in the schedule to consult with those most able to react to the data with resources and authority to address systemic barriers that are discovered. When data reveal that non-evidence-based practice is occurring, a population management approach offers a way to provide information to a provider to show how he/she is not conforming to standard practice and offer support or training. Variation in outcomes should lead to exploration of important differences between treatment locations or patient populations and to teach those implementing changes about ways to adjust the approach to improve outcomes. Those involved in working with population health data need to be both at the administrative level and practice levels.

One example of a practice-based data review is in the systematic caseload review in Collaborative Care. The caseload review process requires real-time input from the consultative team of, at minimum, the psychiatrist and the CM, and population review time is protected at consistent intervals (e.g., once weekly). The psychiatrist is usually providing advice and guidance to the CM regarding the caseload of patients. This periodic "check in" allows the team the capacity to review a list of patients' health data and sort by severity to see which patients are in need of more attention or by length of treatment to see who may have reached maximum benefit. It also allows for the identification of patients lost to follow-up and in need of more proactive management.

(b) Patient-centered services

In the management of a population, it becomes more important to address problems effectively and early than to wait for them to declare themselves in an office. In the Improving

Mood Promoting Access to Collaborative Care (Unützer 2002) model of Collaborative Care, for example, a CM continues to gather information on patients utilizing whatever means are necessary (e.g., home visits, phone calls, emails, text messages, or spontaneous clinical encounters), allowing the psychiatrist to provide input to that patient's treatment team when the patient is not improving as expected and is not engaging in traditional means. There is a higher threshold for discharging the patient from care in this model, partly because there are more options available, and partly as this is an essential element of population-focused care. A patient who "no-shows" for an appointment represents an opportunity to explore more creative avenues of engagement to prevent further worsening of chronic illnesses. In addition, by being imbedded in primary care, the care coordinator has additional opportunities to connect with patients when they arrive for immunizations, refills of hypertensive medication, or the like, allowing care to be tailored to the individual in the settings most convenient to them and their lives.

(c) Raising the capacity of specialty and primary care through stepped care

A goal of population-based care within the Collaborative Care Model is to raise the capacity of the primary care system to manage behavioral health conditions. A significant portion of the work of the psychiatrist in integrated care settings is indirect, involving curbside consultations with primary care colleagues, teaching nurse care coordinators about mental health issues, and providing suggestions in the patient's record to the PCP based on the latest evidence, with enough background to do case-based teaching (Raney 2015a). Rather than requiring a patient to attend specialty behavioral health appointments and perpetual co-management, the goal is to make sure the patient gets what he/she needs regardless of which healthcare door he/she enters and to titrate the intensity of services to the degree of patient complexity and response to treatment. Patients with less complex disorders are managed peripherally as outcomes improve. The specialist eventually intensifies treatment for complex or treatment resistant cases via more direct consultation and management. Known as "stepped care", this is an essential component of population-based care and ensures that limited specialty resources are applied judiciously to the portions of the population most in need. Utilizing this tactic opens more face-to-face time in the specialist provider schedule for more complex and difficult-to-treat patients, improving access to specialty care.

(d) Attending to social and environmental issues

Any effort to manage populations of patients and improve their outcomes will eventually run into social and environmental contributors to behavioral health disorders – homelessness, poverty, lack of insurance, crime, lack of safety in the home, obesity, lack of exercise, and more. Any of these can make a significant impact on the potential for patients to develop, maintain, and recover from mental disorders. A psychiatrist working within a Collaborative Care Model managing the population of the care team can more easily identify systematic barriers to care, advocate for social work resources in primary care clinics, encourage wellness programs to include those with mental health issues, and link the primary care system with community supports and resources.

3. Rationale

Collaborative Care Models offer unique opportunities for psychiatrists to impact populations and use skills critical to population management. Projected psychiatric workforce shortages are already significant and will continue to grow, demanding judicious use of scarce specialist resources (P. Wang et al. 2005; Swartz 2011; Thomas et al. 2009). Given that there will continue to be ongoing shortages in access to specialty mental healthcare, systems that proactively identify populations at risk and track their outcomes across time will allow for more rapid triage of clinical presentations to appropriate levels of consultation and preservation of limited resources.

Adherence to follow-up and medication therapy for behavioral health conditions is notoriously poor (P. S. Wang et al. 2005; Bogner 2013; Velligan et al. 2010). Through the use of population-based registries to track outcomes and make follow-up recommendations to modify treatment plans, persons failing to remain engaged with care or adherent to therapies can be more easily identified, and strategies to engage them can be employed with increasing levels of creativity and intensity (stepped care). Consequently, population-focused management is an essential feature of Collaborative Care Models and may contribute largely to their efficacy in treatment adherence (Lin et al. 2004; Lin et al. 2012). An important aspect of population-focused management is the ability to apply evidence-based recommendations with sometimes relatively limited clinical information. This is made possible by systematic management by a trusted team of colleagues performing longitudinal evaluation (Cerimele et al. 2014). The failure to implement a quality population-based registry of cases severely weakens the capacity for this vital systematic follow-up. Population management thus offers a way to spread limited psychiatric resources over a larger population, to implement and monitor evidence-based strategies more broadly, to engage patients who are inefficiently using the healthcare system, and to learn from outcomes of groups of patients at multiple sites to inform better care delivery and advocate for improved care models within the greater community.

4. Case Study

The following section serves to illustrate population-based care through the ongoing Collaborative Care team clinical example.

Five weeks after his last appointment, John remains depressed. He did not return Dr. Stevens's last call regarding some recent lab results, and he no-showed one appointment. During their weekly caseload review, John is eighth on Ms. Cook's list of 58 patients when sorted by PHQ-9 score severity which leads to a case review. Their registry of patients also has flagged John's PHQ-9 as overdue and above their target. As she and Dr. Brown are reviewing all the patients, they review John's score and with the information in the registry are able to quickly recall his latest treatment plan, including the sertraline recommendations. Dr. Stevens did write the prescription, but Ms. Cook is unsure what happened after that. She attempted to call John about 1 week after the sertraline was prescribed and left him a message that wasn't returned. Ms. Cook and Dr.

Brown agree that John needs increased outreach given his recent depression and lack of engagement, and Ms. Cook takes on this task over the next week. They then move on to Sue after spending about 5 minutes discussing John.

Through the course of an hour, Dr. Brown and Ms. Cook review all of the patients in the caseload who are still not at target (on this particular day this was 22 of the 58 patients in the registry), rapidly triaging clinical scenarios with Dr. Brown and offering treatment suggestions or follow-up suggestions for those with unmet clinical needs. They allocate time and effort through an agreed-upon order: 1) new patients, 2) follow-up patients not yet at target or not improving, 3) patients not engaging in care, and 4) patients in remission, saving two or three complex patients for consistent check-in as time allows every week. Sometimes they do not discuss patients in remission unless certain problems arise. They review patients for possible discharge from the program who have met their clinical goals for 3 months with minimal care management (their program's discharge criteria) so as to open up more slots on Ms. Cook's caseload for new referrals, since 60 is her maximum. In this particular caseload review session, they identify two patients with more complicated personality traits and comorbid substance use disorders for referral to the local Community Mental Health Center (CMHC) for more intensive treatment. They identify one patient in need of housing and benefits assistance from the clinic social worker. The two referral patients will remain on Ms. Cook's caseload under consultation from Dr. Brown and management by Dr. Stevens until they make their first CMHC appointments. Dr. Brown makes a note to call the CMHC administrator to work out an easier referral process from their clinic.

The following day, Ms. Cook writes a letter from the clinic to John offering assistance and begins to call more frequently. Three days later, John calls back, and he discloses that he never picked up the sertraline and was not sure he was worth the attention of the team. He reports that he didn't want to feel like a failure again or let anyone down. John's PHQ-9 score over the phone is 18, and Ms. Cook screens John for suicidal ideation, which is negative. She provides some education around depressive symptoms, the role of the team, and their desire to help him feel better. John agrees to pick up the sertraline from the pharmacy and check-in with Ms. Cook before the weekend to report on how he's tolerating it.

Population-based care allows the Collaborative Care team to focus efforts on persons not improving or engaging well with care and rapidly link patients to other clinical or community-based resources as necessary.

C. Measurement-Guided Care

One of the core elements of Collaborative Care is measurement-guided or measurement-based care (MBC). This is also known as "treat-to-target" care. Because the

proactive longitudinal follow-up of patients by the CM involves repeated assessments of symptom severity, the Collaborative Care team can use this information to determine whether patients have experienced a treatment response. Because MBC facilitates the recognition of patients who are deteriorating or not improving as expected, it prompts the care team to adjust the treatment plan, thereby reducing clinical inertia – the failure to modify treatment regimens when outcomes are not met. Clinical inertia has been identified as a significant barrier to receipt of optimal treatment and chronic disease outcomes (Schmittdiel et al. 2008). In the Collaborative Care Model, these patient-reported outcomes and MBC are critical to the weekly case reviews conducted by the CM and consulting psychiatrist.

1. Definitions

> The team uses systematic, disease-specific, patient-reported outcome measures (e.g., symptom rating scales) to drive clinical decision-making.

Measurement-based care has been defined as the "enhanced precision and consistency in disease assessment, tracking, and treatment to achieve optimal outcomes" (Harding et al. 2011). Measurement-based care involves the systematic use of disease-specific, patient-reported outcome measures (i.e., symptom rating scales) to drive clinical decision-making. Symptom rating scales, such as the nine-item PHQ-9 for depression (Arroll and Goodyear-Smith 2010) are brief structured instruments that patients use to report their perceptions about the frequency and/or severity of the psychiatric symptoms they are experiencing. Measurement-based care seeks to optimize the accuracy and efficiency of symptom assessment in order to facilitate the recognition of patients who are not responding to treatment. Measurement-based care also facilitates the use of treatment guidelines and algorithms which specify clinical decision nodes based on whether the patient is experiencing a full, partial, or no response to treatment (Unützer and Park 2012). As such, it is a key component to evidence-based care. In addition, patients who regularly complete self-reported rating scales are likely to become more knowledgeable about their disorders, attuned to their symptoms, and cognizant of the warning signs of relapse or reoccurrence, thus enabling them to better self-manage their illness (Valenstein et al. 2009).

2. Components

Not all approaches to MBC are effective. A Cochrane review of depression screening (i.e., annual assessment of symptoms) found that patients with depression randomized to depression screening do not have better outcomes than patients randomized to no depression screening (Simon Gilbody, Sheldon, and House 2008). In addition, *patient-reported* outcome measures should be used for MBC rather than *clinicians' ratings* of their patients' symptoms, which are often biased and fail to detect deterioration (Hatfield et al. 2009). For MBC to be effective there is also good evidence that the patient-reported outcomes must be collected frequently and incorporated into multiple clinical encounters over time, including caseload reviews (Schmidt et al. 2006; Slade et al. 2006; Fihn et al. 2004).

For the patient-reported outcome measures to be clinically actionable (i.e., able to inform clinical decision-making), the symptom rating scale data must be current, interpretable, and easily available during the clinical encounter. If the symptom severity data are outdated or presented to the provider outside the context of the clinical encounter, this is not actionable and is not considered to be MBC. In addition to being current, interpretable, available, and usable by the provider during the clinical encounter, the instruments used to measure symptom severity must be reliable (i.e., consistent across repeated measurements when there is no change in symptom severity) and sensitive to change (i.e., able to detect clinically meaningful changes in severity) (Smith et al. 1997; Kerr et al. 2001). **Table 2** outlines the key principles of MBC.

Table 2: Key Principles of Measurement-Based Care

Six Components of Effective Measurement

1. **Measurement alone is not enough; outcomes must be incorporated into the clinical encounter.**

2. **Patient-reported outcomes are more accurate than clinician-reported outcomes.**

3. **Measures must be collected frequently to accurately assess the most recent clinical state.**

4. **Measures must be tightly correlated to the illness state and are typically diagnosis-specific.**

5. **Instruments must be reliable and sensitive to change.**

6. **Methods must be relatively simple to implement and low cost.**

3. Rationale

While the relative contribution of MBC to the overall effectiveness of Collaborative Care has not been established empirically, MBC on its own is one of the most widely studied elements of Collaborative Care. Virtually all randomized controlled trials with frequent and timely feedback of patient-reported symptoms to the provider during clinical encounters have found that it significantly improves outcomes (Harmon et al. 2007; Hawkins et al. 2006; Murphy, Rashleigh, and Timulak 2012; Reese, Norsworthy, and Rowlands 2009; Reese et al. 2010; W. Simon et al. 2012; Slade et al. 2006; Whipple et al. 2003; Lambert et al. 2002; Bickman et al. 2011; Brodey et al. 2005; Knaup et al. 2009; Krägeloh et al. 2015). A meta-analysis of nearly 300 therapists and 6,000 patients found that only 22% of patients randomized to usual care experienced symptom improvement compared to 38% of patients randomized to a MBC

group (Shimokawa, Lambert, and Smart 2010). Based on these findings, it is highly likely that MBC contributes to the overall effectiveness of Collaborative Care. Moreover, in an implementation study of MBC with over 3,000 patients, 100% of psychiatrists rated the symptom rating scales as helpful for monitoring response to treatment (Sachs et al. 2003).

Measurement-based care also can facilitate communication across providers working within the context of Collaborative Care. For example, the patient-reported symptom severity scores collected by CMs are shared with the PCP and consulting psychiatrist to focus the team based care on treat-to-target goals (Unützer et al. 2012). In addition, patients have positive perceptions of symptom rating scales and reported that they helped them increase their understanding of their illness and better express themselves to their provider (Dowrick et al. 2009). Finally, MBC will soon be required by health plans and accreditation agencies. For example, the National Committee for Quality Assurance (NCQA) has proposed depression symptom monitoring with the PHQ-9 and response/remission rates as health plan performance measures for the 2016 Healthcare Effectiveness Data and Information Set ("National Committee for Quality Assurance: Healthcare Effectiveness Data and Information Set (HEDIS)" 2013).

4. Case Study

The following section serves to illustrate MBC through the ongoing Collaborative Care team clinical example.

John, the patient, calls Ms. Cook, the CM, on Friday and reports that he picked up the sertraline and is taking it without side effects but doesn't feel much different after 2 days. Ms. Cook reassures John that this is not unusual, and that he needs to stick with the medication for 4-6 weeks at the right dose sometimes before his mood may change. They make a plan to check in once a week.

In 4 weeks, John's PHQ-9 score has gone from an 18 to a 15, and he is tolerating the sertraline without any problems. Dr. Brown, the consulting psychiatrist, recommends they titrate the dose to a higher level and continue to monitor John's response. Dr. Stevens, the PCP, writes a new prescription for John; Ms. Cook confirms that he picks it up at the pharmacy and takes it; and after another 4 weeks, his PHQ-9 is 13. John reports that he is feeling better and has applied for a new job. He and his wife are fighting less, and they are talking about having him move back in. In spite of these gains, however, Ms. Cook discusses John's remaining symptoms of prominent guilt and negative self-worth and poor quality sleep, energy, and concentration coupled to overeating—all of which contribute to his current score. They formulate a plan to begin more regular exercise. Because his PHQ-9 is still above 5, Dr. Brown's advice is to continue to titrate the sertraline to the maximum daily dosage, noting his steady improvements.

Four weeks later, John's PHQ-9 score is 5. He reports that he feels like his old self again, has moved back in with his wife, is exercising more regularly now, and starting to lose some excess weight.

The use of patient-reported outcomes and standardized measures can provide for valuable patient education experiences, attention to ongoing symptomatology in the context of sub-threshold clinical improvement, and facilitate more robust treatment response.

D. Evidence-Based Care

Evidence-based care utilizes principles of decision support connected to measurement-based outcomes to help facilitate the efficiency of the Collaborative Care team in population management.

1. Definition

> The team adapts scientifically proven treatments within an individual clinical context to achieve improved health outcomes.

Evidence-based care refers to the application of proven treatments within an individual clinical context to achieve MBC outcomes. Evidence-based care is defined by Sackett and colleagues as the "conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett et al. 1996). Evidence-based care incorporates data from systematic research into the clinical decision-making process while tailoring general disease management strategies to the individual.

2. Components

Several components of evidence-based care emerge within the context of Collaborative Care.

Identification of modifiable Measurement-Based Care outcomes is possible.

There must be a clinical scenario that is definable which allows for the application of existing systematic research data. This clinical scenario must have measurable outcomes that, when achieved, directly result in improved quality of life and individual functioning. While this may seem obvious, many clinical implementations of integrated care choose to focus on outcome measures for which there are no definable evidence-based treatments available. Abstract clinical measures such as quality of life, inpatient hospitalization, or generalized risk scores are enticing to include but often offer little guidance to healthcare personnel lacking a proven evidence-base for treating complexity. Such scores often represent down-stream end-points that encompass a more complex mix of biological, sociological, and psychological risk. This is in contrast to successful Collaborative Care interventions that select clinically definable and measurable outcomes such as the PHQ-9 or hemoglobin A1C values that are directly related to clinical illness severity.

Evidence-Based treatments exist.

Evidence-based care presupposes that treatments exist for the clinical scenario in question and that the treatments are efficacious, reliable, and proven to improve outcomes and quality of life. Ideally, these treatments are relatively inexpensive and well-tolerated. Furthermore, the treatments should be as "tightly linked" to the outcome measured as possible so that treatment intensification efforts are accurately reflected in outcomes and severity of illness is quantified (Kerr et al. 2001; Selby 2009).

Collaborative Care teams must have confidence in the dose of treatments offered so that failure to achieve a clinical outcome after the application of treatment is more easily dichotomized to poor treatment adherence/delivery or failure of response. This confidence is offered through the reliance on existing clinical evidence, allowing for some increased degree of predictability in response. An example is treatment for major depressive disorder. Through a robust evidence base, clinicians can be relatively confident that evidence-based treatment with pharmacotherapy and/or psychotherapy is effective in achieving remission of depressive symptoms for approximately 60-70% of patients. Psychotherapeutic interventions employed for depression care in the IMPACT model include Problem Solving Therapy and Behavioral Activation – two evidence-based approaches to depression management in primary care (Linde et al. 2015). Given this evidence-based expectation, Collaborative Care teams can more readily identify underlying causes for lack of clinical improvement. Evidence-based care allows clinical teams to be confident in their treatment efforts while also providing for judicious use of limited resources to maximize efficacy.

Standardized, stepped care algorithms can be employed.

Evidence-based care is most effective when treatment algorithms are standardized and levels of treatment intensification are commonly accepted among practitioners as a standard of care. This "stepped care" approach allows for a more rapid application of a treatment intensity framework for individual patients and facilitates the caseload review process and population management. Whenever possible, this should be driven by evidence and is often assimilated in guidelines for clinical management. One essential element of the Collaborative Care Model is the presence of treatment guidelines; education materials for patients, clinicians, and CMs; and ongoing trainings offered to ensure that the treatment team is delivering the most up-to-date therapies. One advantage of the Collaborative Care Model is the ability to disseminate evidence-based treatments rapidly through a population-based approach and systematic quality improvement.

Diabetes is an excellent example of this approach. The hemoglobin A1C value and the current therapies identify the level of treatment intensification necessary and are amenable to well-standardized algorithmic approaches. For example, an individual naïve to treatment with a hemoglobin A1c of 10.1% with type 2 diabetes should receive both metformin and insulin therapy from the beginning of treatment to achieve the total reduction in A1c necessary – metformin alone will likely be insufficient ("7. Approaches to Glycemic Treatment" 2014). This

knowledge is culled from the accumulated evidence-base in diabetes and is reflected in current diabetes guidelines.

3. Rationale

While the practice of evidence-based care extends back several decades, the application of this within Collaborative Care stems from the original Chronic Care Model which was formulated originally around diabetes care (E. H. Wagner, Austin, and Von Korff 1996). An essential element of any chronic illness management is the use of clinical decision supports to guide treatment intensification and improve outcomes. Clinical decision supports are simply the application of systematic research evidence to individual cases when possible and aid clinicians in rapidly assessing a clinical scenario and applying treatments with predictable chances of success. Population-based care, rapid assessment, and treatment intensification are not possible for clinical scenarios for which there is no commonly accepted evidence-base for treatment. Having standard guidelines also allows for shared agreement and buy-in amongst consultants and primary practitioners in chronic illness management. The Collaborative Care team can provide the algorithmic, population-focused management advice which can be counterbalanced by the PCP and CM's patient-level experience and input, overcoming barriers in clinical inertia and failure of treatment intensification commonly encountered in chronic illness management (Lin et al. 2012; Schmittdiel et al. 2008).

4. Narrative Description/Case Study:

The following section serves to illustrate evidence-based care through the ongoing Collaborative Care team clinical example.

> Two months after John achieved early remission from his depression, Ms. Cook calls him for a routine check-in. He notes that he stopped taking the sertraline for a couple of weeks right after their last conversation and had a relapse of some of his symptoms. His PHQ-9 score has jumped from 5 to 13, and John is feeling embarrassed and shameful. He resumed his sertraline at 200 mg about a month ago but still struggles with energy and has stopped his workout routine. Dr. Brown suggests that they augment the sertraline with bupropion, and Dr. Stevens writes the prescription for John.

> One month later, John's PHQ-9 score is 10, and Ms. Cook engages him with Behavioral Activation focused on his exercise regimen again. They discuss the cycle of inaction, guilt, and depression, and John agrees to experiment with a different workout regimen and assess his mood. Dr. Stevens automatically adjusts his bupropion to a higher level since he is tolerating it well, and 1 month later John's PHQ-9 score is 4.

This clinical scenario depicts the use of treatment algorithms for depression care. After a relapse and partial response to sertraline at maximum dosage, Dr. Brown employed evidence from the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study (Rush et al. 2006) to augment with bupropion, and Dr. Stevens recognized the algorithmic step and ensured

that John was prescribed an appropriate dosage. Additionally, Ms. Cook employed a psychotherapy technique proven to be effective in the management of depression in primary care, Behavioral Activation Therapy (Linde et al. 2015). Through consistent application of evidence-based care, John was able to achieve remission of his depressive symptoms after his relapse.

V. ACCOUNTABILITY, QUALITY IMPROVEMENT AND MEASUREMENT

Successful implementation and ongoing maintenance of a Collaborative Care program requires many new system processes to achieve each of the four essential elements. Often, these processes are complex and include different clinical roles, workflows, and team makeup. There may also be increased demands on the system; including new or different training, communications, information technology, facility needs, and others. A systematic, quality improvement framework is thus required in order to assure that all of these processes are coordinated and effective.

A. Definitions

Two aspects of accountability and quality improvement surface repeatedly in Collaborative Care implementations, and include:

(a) Performance Measurement: The process of evaluating how well organizations are managed and the value they deliver for customers and other stakeholders (Moullin 2002).

(b) Pay-for-Performance / Value Based Purchasing: The process of paying providers to meet quality goals (Rosenthal et al. 2004; Rosenthal et al. 2005).

B. Rationale and Key Elements

The improvement seen in clinical outcomes derived from Collaborative Care is thought to be achieved via the four core structural elements of the model: care that is (a) team-driven, (b) population-focused, (c) measurement-guided, and (d) evidence-based. As important as these elements are to achieving better clinical outcomes, they also in sum create a framework for transparent accountability at multiple levels and with various participants – including the patient and clinical providers. Patient-Reported Outcomes Measures (PROMs) – structured self-report patient outcome measures – are being increasingly utilized by payers and accreditors to hold provider entities accountable for the health outcomes of populations served. For example, the National Council of Quality Assurance (http://www.ncqa.org) has included screening (and soon to include remission rate measurement) for depression as measured by the PHQ-9 as one of the measures for comparing health care plan performance levels in their 2015/2016 HEDIS measures for comparing health plan performance.

The use of PROMs creates new opportunities to demonstrate the value of Collaborative Care Models to patients and provider teams themselves. Through the use of self-reported measures individual patients can, together with their clinician, review data and determine whether clinical goals are met or whether care plans need to be adjusted. The clinician and patient together can use clinical outcomes data to help discern which clinical modalities and methods are most effective. This empowers the patient towards the maximal amount of self-management in his or her own care. Clinicians, in turn, are able to periodically review their caseloads in order to assess which patients are not improving as expected, or whether a change

in care or treatment strategy is indicated. This is important, because clinicians often are unable to make this determination using clinical judgment alone (Hatfield et al. 2009). In effect, patients and their clinicians become "agents of quality assurance" for their own care and practices (respectively). The same process can occur at the clinical team level, clinical program level, agency level, and the like. Data can be "rolled up" to display caseload, practice, or population summary reports for the purposes of practice monitoring, professional development, and program improvement.

Clinical outcomes measures like the PHQ-9 may serve as the primary clinical outcome measure for a program. However, for ongoing program success, programs should consider secondary process measures as well. Though one might think that the process of care is not relevant as long as the expected outcomes are achieved, expert consensus is that the means of achieving clinical goals are important. This is partially because the use of patient outcomes measures alone has not been associated with improved outcomes (Simon Gilbody, Sheldon, and House 2008). However, it also appears that use of process measures are important to help guide clinicians and leaders in assuring the necessary steps that are required for programmatic success, such as screening rates, access rates, financial stewardship, and service timeliness. Without attention to the processes, there can be an erosion of fidelity to the core processes required to achieve clinical outcomes, and ultimately an erosion of the expected outcomes themselves. Thus, a mixture of process and clinical-outcome measurements is required.

By utilizing this data in the context of caseload consultation, the Collaborative Care psychiatric consultant is in an optimal position for assuring fidelity with the Collaborative Care core processes. Throughout his/her medical school and residency training, the psychiatrist is trained to evaluate using a differential diagnosis, oversee, and suggest changes to patient care plans. The psychiatric consultant draws on this expertise in order to give education, guidance, and care recommendations for individual patients. Collaborative Care experts believe that the benefits of the model arise not only from WHAT services are offered but also HOW that care is coordinated and WHEN the services are given. Thus, the psychiatric consultant is often called upon to provide team leadership around the roles, functions, workflows, and other processes in the delivery of Collaborative Care.

Evidence-based, accountable care occurs only with intention. In a constantly changing environment of care, a structured and continuous quality improvement strategy is critical for initial and ongoing success. Programs that fail to create a system for ongoing process improvement are especially vulnerable to drifting back into non-collaborative and non-evidence-based patterns of care. From the outset, programs should have a plan for periodically monitoring their success in achieving the target population's intended clinical outcomes as well as monitoring fidelity to the clinical model. These reassessments allow teams and leaders to make necessary changes to the vision and action plan and to review the process of bringing on new staff. These also make for a great opportunity to celebrate clinical successes and re-energize teams (UW AIMS Center 2015). This ongoing quality improvement process touches all levels and functions of an organization. Fortunately, a number of practice change models and

methods exist, such as the Institute for Healthcare Improvement Collaborative Model (IHI 2003).

C. Narrative Description/Case Study: Measures for Quality Improvement

The following section serves to illustrate accountability and quality improvement through the ongoing Collaborative Care team clinical example.

> Ms. Cook, the CM, checks in with the clinic supervisor for the Collaborative Care program who helps to oversee the performance of all the CMs in the program. At Ms. Cook's last check-in about 3 months ago, her rates of depression remission or response as measured by a PHQ-9 of less than 5 or greater than 50% reduction from original PHQ-9 score, respectively, for patients enrolled at least 6 months in the program were on par with her colleagues at the same clinic – around 45%. However, this quarter her rates have dropped to about 30%. The clinical supervisor and she review her caseload turnover, which is also about the same as the other CMs, as is the severity of her patients based on her average initial PHQ-9 score. One notable exception is the number of patients discussed during the weekly caseload review process with Dr. Brown, which has dropped considerably. Ms. Cook notes that they rarely get through all the caseload now, as opposed to the beginning of their work together, sometimes discussing only 4 or 5 patients in an hour, leaving little time to consider others who still have uncontrolled symptoms but don't seem as complicated. She considers one case recently, John, who suffered a relapse in his depression after she hadn't made contact in about 5 weeks.

> Ms. Cook talked with another CM in her clinic who managed to maintain his response rate consistently around 55% and discovered that the other CM made it a point to check in with everyone in some capacity (e.g., phone, in-person, email) at least once every 2 weeks until their remission had lasted 3 months. She sets up a rotating schedule to call all her patients over the course of 2 weeks at a minimum regardless of their status (though sometimes more). She also will share the process and outcome results with Dr. Brown to help focus their caseload review process, ensuring that all of the caseload is considered at standard intervals.

Paying attention to both process and outcome measures can help to ensure that vital elements of Collaborative Care implementation, including population-based care (as shown above), are thoroughly implemented and ongoing monitoring is available to protect against programmatic drift.

VI. UNIQUE ATTRIBUTES OF PSYCHIATRISTS IN THE COLLABORATIVE CARE MODEL

Psychiatrists have integral roles on several levels to ensure success in Collaborative Care Models (Raney 2015a). Psychiatrists provide an effective combination of knowledge and skills for the Collaborative Care environment, given their background in medical and behavioral health fields as well as scientific and clinical authority to provide definitive recommendations in complex diagnoses and treatment regimens that involve both psychopharmacology and psychotherapy. Psychiatrists also offer leadership and accountability in caseload consultation, population management, medico-legal liability, and triage of potential clinical crises.

1. Training in both Medicine and Behavioral Health

The most common reasons for psychiatric consultation in Collaborative Care are diagnostic clarification and psychopharmacologic recommendations (Norfleet, Ratzliff, and Chan 2015; Raney 2015a). The psychiatrist on the team has the breadth and depth to clarify how psychiatric symptoms present within the primary care setting and the medical conditions that may mimic them. This background in psychiatric care of medically ill persons is gained during residency training rotations, followed by clinical experience or further training related to psychiatry in medical settings. Psychiatrists in Collaborative Care settings bring knowledge of latest evidence based pharmacological and non-pharmacological treatments, comfort in managing patients with medical illnesses, understand principles of handling drug-drug interactions, and skills in working with multi-disciplinary medical care teams.

Psychiatric diagnoses most commonly encountered in Collaborative Care programs include depressive disorders, anxiety disorders, bipolar disorder, personality disorders, substance use disorders, and somatic symptom disorders (Norfleet, Ratzliff, and Chan 2015). Although the most robust evidence base for Collaborative Care Models are in depression and anxiety, patients within primary care clinics present with a variety of primary conditions or comorbid behavioral health concerns, many of which can also be managed in the Collaborative Care framework. Furthermore, psychiatrists maintain proficiency in medical communication that may otherwise limit the adoption of some treatment recommendations by a PCP. Such experience and training may overcome barriers to implementation such as PCP engagement. Similar to primary care physicians, consultant psychiatrists within Collaborative Care should be "generalists" – willing to adapt practice styles and scope, as able, to the demands of the clinical situation and needs of their colleagues (Raney 2015a).

2. Educating others in applying evidence-based practice

Medication recommendations are a frequent request for Collaborative Care psychiatrists; discussing the rationale for a particular recommended treatment is often helpful for ensuring implementation, adherence, and education of the patient and team members. For example, a written recommendation for a specific antidepressant may include an explanation of why that particular one was chosen. These collegial and informative communications are

invaluable in gaining "buy-in" from PCPs, which often helps to shore up institutional support through positive PCP feedback. Furthermore, psychiatrists have the skill set necessary to evaluate the evidence-base across all treatment paradigms and operationalize evidence-based care within given clinical contexts. Through repeated consultation around specific patient scenarios, the psychiatric consultant is able to build the capacity of the PCP to confidently and competently treat a variety of psychiatric disorders.

3. Collaboration, Consultation, and Partnership with Primary Care

Working with PCPs in a Collaborative Care Model requires they understand the psychiatric consultant's role in assisting and supporting their management of psychiatric illness they may consider to be beyond their scope of expertise. Working as a team targeting outcomes, while having the patients remain under the PCP's care, requires significant trust from the PCP that you are available and employed in their best interest. Although this type of support from psychiatry will likely be seen as new (and unexpected) to most PCPs, an emphasis on trust-building is essential for a successful partnership. This process may begin with a face-to-face meeting, perhaps during downtime at the primary care clinic, where introductions are made and the Collaborative Care Model described. These opportunities may be reinforced with future meetings during which the psychiatrist provides the PCP with algorithms for diagnosis and treatment of common mental illnesses, such as depression and anxiety. Additionally, these meetings provide an opportunity to elicit feedback from the PCPs, which enhances the perception that this is indeed collaboration. It is important for the PCP to have access to the psychiatrist for questions, which may be informal "curbsides" or even urgent questions. Skills in providing informal consultation are crucial to the relationship and require some time to master (Raney 2015a). Contact by HIPAA-compliant electronic messages, cell phone calls, and pages are often encouraged as opportunities to communicate and obtain consultation.

Indeed, one advantage of psychiatrist participation in Collaborative Care Models is more ready access to emergent or urgent consultation and advice for urgent or life-threatening clinical situations which otherwise would not have been available. With the longitudinal nature of the consultant team's relationship, patterns in behavior that may differ and point to alternative diagnoses allow for novel clinical evaluation methods that also were not previously available, and more rapid triage of more complex situations to an appropriate level of care (i.e., an initial presentation of bipolar disorder as depression with no known history of mania converts to hypomania which may have previously been lost to follow-up).

4. Team Leadership, Vision, and Accountability

By virtue of their extended training and expertise in managing complex situations, psychiatrists are often called upon to provide guidance, leadership, and accountability to the Collaborative Care team, though it should be noted that each member of the team is treated with equal respect and mutual admiration. The cultures of primary care and behavioral health differ in many ways and the psychiatrist, trained in both worlds of general medicine and

psychiatry, can help mitigate problems that may occur as these cultures come together in the Collaborative Care Model.

Psychiatrists possessing skills in population management who review all patients in a particular caseload in accordance with clinical severity are ensuring the team is held responsible to the provision of evidence-based care across the population. Their consultant relationship helps to guarantee that they remain appropriately distant from clinical situations allowing for objectivity, creativity, and momentum to overcome clinical inertia. This distance is in contrast to the expected closeness of the CM and the PCP, and provides an essential checks and balances system when implemented correctly.

5. Medico-Legal Liability

When participating as a member of a Collaborative Care team, care is taken to clarify malpractice liability risks. Current literature and case law suggest the relative risk of curbside consultation is minimal, and that the medico-legal risk to a psychiatrist for providing organized advice on a patient not physically seen (indirect consultation, the most frequent role in this model) is less than for providing direct care as the patient is under the principal care of another provider (Olick and Bergus). During systematic caseload review, it is helpful to record team discussions to help track treatment history and follow-up, with the added statement in the team note explaining that the patient was not directly seen. Furthermore, as the expectation remains that the patient continues under the direct care of the PCP, who may or may not choose to take the recommendation offered, the clarification that "treatment plan recommendations provided in the course of this consultation should not supplant clinical judgment and are offered through data derived from the CM without direct patient consultation" could be included in all communications. Ready access to a specialist with expertise in both diagnosis and management helps to alleviate medico-legal concerns that inevitably arise when managing behavioral health disorders in the community.

VII. IN-VIVO IMPLEMENTATIONS OF COLLABORATIVE CARE MODELS

Introduction

Implementation of Collaborative Care requires extensive systematic change on multiple levels that span from the provider workflows and task shifting traditional roles, to payment and reimbursement reform. As such, bringing the Collaborative Care Model to scale is difficult. This section attempts to provide practices, health systems, and policy makers with actual implementation examples, highlighting each program's history, methods of implementation of the four essential elements, attention to accountability, funding mechanism(s), and lessons learned. Attempts were made to draw broadly across different services and payer types.

A. Washington State Mental Health Integration Program (MHIP)

1. Background & History

The Washington State Mental Health Integration Program (MHIP) was created in 2007 in partnership between the Community Health Plan of Washington (CHPW, a not-for-profit health plan), Seattle-King County Department of Public Health, and the AIMS Center at the University of Washington. The program was initially piloted in two of Washington State's most populous counties. Program data from the first years of 2008 and 2009 showed that, compared to counties without MHIP, the target population in MHIP counties had 17% fewer inpatient medical admissions and smaller increases in inpatient psychiatric costs (21% vs. 167%) over the review period. Compared to those that did not receive services, health plan enrollees who received MHIP services had a larger decrease in number of arrests (24% decline in MHIP clients), a smaller increase in those living in homeless shelters or outdoors (50% vs. 100%), and a smaller increase in days spent in state hospitals (33% vs. 500%) (Joesch 2011). Partially because of these positive results, the MHIP program was expanded statewide in 2009. During the first 14 months of statewide implementation, the state saved an estimated $11.2 million in hospital costs alone (*Community Health Centers: Behavioral Health Integration* 2013). The program has now been in continuous operation for over 8 years and has served over 45,000 patients in more than 150 community health centers.

2. Program Description

The program was initially patterned after the IMPACT program developed by the University of Washington (Unützer 2002). Like the IMPACT model, the MHIP program incorporates core components of team-based care, use of a clinical behavioral health (BH) CM, and use of a psychiatric caseload consultant. In addition to the PHQ-9, patients also were screened for anxiety and substance use conditions. Over time, additional screening tools have been incorporated into the care model, including symptom rating scales, functional rating scales, and important medical markers, such as glycosylated hemoglobin (hemoglobin A1C, HbA1c) and LDL cholesterol.

Appropriate and eligible patients are identified via standardized screening (such as the PHQ-9) or via referral by the PCP. Whenever possible, "warm handoff" referrals are utilized, connecting the BH CM immediately to the patient. The BH CM also has a primary role of coordination of referrals and care transitions – including referral to specialty mental health when indicated, once patients are enrolled in the MHIP program.

3. Adaptation of Essential Collaborative Care Elements

(a) Team-Driven and Evidence-Based Care

The MHIP program emphasizes a team-based care model, as depicted in **Figure 1**. In this model, the patient and primary care provider are joined by the BH CM and the psychiatric consultant in the care of the MHIP patient. In many clinics, BH CMs work alongside the primary

care team, whereas in smaller clinics a BH CM may work at another location but serve clients at the smaller clinic.

The BH CM serves a central role in MHIP care team – coordinating care, managing referrals and transitions, and assisting in medication reconciliation. The BH CM also plays the important role of providing brief, evidence-based treatments. BH CMs receive ongoing training in these practices via live trainings and recorded webinars.

The psychiatric consultant provides regular (usually weekly) caseload reviews with the CM for the purpose of ensuring population review for the assigned caseload. During the consultations, the psychiatrist assists with diagnosis and formulation and makes recommendations regarding medications, psychotherapy, and patient management. Recommendations are documented in a caseload review note that is forwarded to the PCP. The consultant remains available throughout the week by telephone to assist the care team in the event of additional questions. The psychiatric consultants are often available either in person or by telepsychiatry for direct patient care consultations for more complex clinical questions or concerns.

(b) Population-Focused Care and Measurement-Guided Care

A web-based tracking system, described by the AIMS Center (Unützer et al. 2002) is utilized to help support systematic outcome tracking and quality improvement. The MHIP registry captures clinical diagnoses assigned by clinicians working with patients and clinical outcomes using validated clinical rating scales, such as the PHQ-9 for depression (Arroll and Goodyear-Smith 2010). This information is gathered for all participants at an initial assessment and at each subsequent contact with a BH CM. The care registry displays individual and caseload summary data to the BH CM, who in turn utilizes this information to make care decisions. A key emphasis is review of patients who are not improving, with an aim of adjusting the care plan as needed.

4. Quality Improvement and Accountability

Initial experience with this program showed high levels of variation between programs as measured by PHQ-9 and Generalized Anxiety Disorders-7 (GAD-7) population-level outcomes. To help address this variation, real-time clinical reports were created and embedded into the care registry tool. These reports contained several key clinical indicators, including timely follow-up of patients, tracking medication lists, and the provision of psychiatric consultation for patients who were not improving. The CMs and consulting psychiatrists were trained in how to utilize this data when making care plans and prioritizing services. For instance, the timely follow-up measure often was utilized to determine whether a patient might benefit from an outreach call.

These measures were further reinforced financially – approximately 5% of their annual reimbursement per measure was tied to achieving each one of these quality measures, a

procedure known as "pay-for-performance." As shown in **Figure 2**, the implementation of these quality measures successfully improved overall care by demonstrating a 50% shorter time to achieve a 50% reduction PHQ-9 score (or achieving a score less than 10). Though this study was not able to separate the effects of providing the real time feedback from pay-for-performance stimulus, it is likely that both were factors in improving outcomes (Unützer et al. 2012).

FIGURE 2: Pay-for-performance-based quality improvement dramatically reduces median time to depression improvement in a state-wide Collaborative Care program.
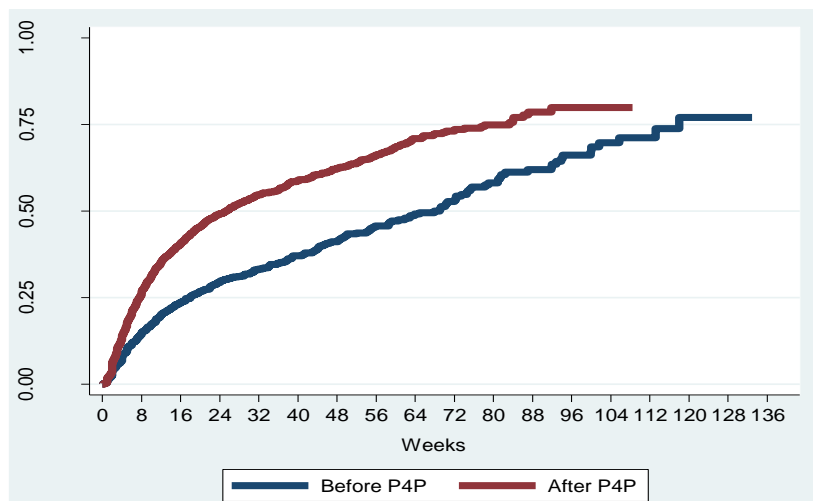
5. Funding

The program was initially funded by the state legislature and administered by the not-for-profit CHPW for the General Assistance Unemployable (GAU) recipients in two of Washington State's most populous counties. Shortly thereafter, the program received additional funding for veterans and their families, underinsured persons, older adults, and pregnant women and new mothers under voter-approved levy funds and administered by the Seattle-King County Department of Public Health. The program was further expanded statewide in 2009 under similar funding arrangements based on the demonstrated early success mentioned above. In 2014, the Medicaid expansion resulted in termination of the GAU program as these recipients became eligible for Medicaid. The program was continued as a treatment option for patients who selected CHPW as their Medicaid insurance carrier.

6. Lessons Learned

a. *Primary care-centered Collaborative Care is possible in a high-needs safety net population.*

Prior to the initiation of this program, there was little recorded experience of the effectiveness of providing primary care integration services to safety net populations. The Joesch et al. report (Joesch 2011) showed early evidence that Collaborative Care can

demonstrate quick and demonstrable population improvements and system cost savings. This encouraging data suggested that Collaborative Care programs can be effective in safety net populations in both bending the cost curve AND improving clinical outcomes.

b. *Systematic uses of process and outcomes measures that are built into clinician workflows are important for program success.*

As reported in the accountability section above, the incorporation of a combination of both real-time process and clinical outcome measures that are built into the BH CMs' workflows had a dramatic impact on clinical outcomes, reducing the time to depression remission for half of the overall patient population by as much as 50% (Unützer et al. 2012).

c. *Ongoing workforce development, training, and support are critical for program success.*

For such a large program, it was a challenge to find and train a clinical workforce of over 100 BH CMs and approximately 20 part-time psychiatric consultants. Once the initial roll-out process was complete, the challenge of program sustainability became apparent. Use of recorded web-based training helped, but training needs remains an ongoing challenge. Furthermore, as the program expands, it continues to draw clinicians from an already strained mental health clinician resource pool. Training efforts for current and new clinicians are ongoing, but more needs to be done to consider the "pipeline" for new clinicians (BH CMs and consulting psychiatrists) who are considering a career in Collaborative Care. A discussion of workforce training is offered in the Future Directions section.

B. Depression Initiative Across Minnesota, Offering a New Direction (DIAMOND)

1. Background and History

The Depression Initiative Across Minnesota, Offering a New Direction (DIAMOND) project was initially conceived in 2006 at the Institute for Clinical Systems Improvement (ICSI), a non-profit quality improvement organization representing more than 60 hospitals, medical groups, and health plans primarily in Minnesota. As a neutral convening group, ICSI was able to pull together a steering committee that involved not only care providers, but also insurance representatives, patients, employers, and regulatory groups for the state to look for common ground on the gulf between what was available in the literature regarding the treatment of depression and what was happening in the state.

At the time, a meta-analysis (S Gilbody, Bower, and Fletcher 2006) of 37 randomized controlled trials supported care coordination for depression as being superior to practice as usual. The Institute for Clinical Systems Improvement contacted Jürgen Unützer, M.D., one of the architects of the IMPACT model for the management of depression as an expert consultant and then reached out to member organizations in the state to seek interest and capacity for changes in their delivery system. The participation of insurance groups in the design of DIAMOND allowed the opportunity to link practice change with payment redesign, and practices across the state were offered the chance to have expert help in system redesign along with the promise of a new source of reimbursement for care coordination of depression in adult patients.

Interested medical groups were screened for readiness for change, and those deemed capable were assigned a place in a staggered implementation plan of five "waves" in which a group of primary care clinics worked on learning and implementing over 6 months. Those participants in earlier segments were then part of the training group for the next wave, with over 80 primary care clinics receiving training by the end of implementation. Each participating clinic was required to submit data on response (50% improvement) and remission (subthreshold clinical score) based on the PHQ-9 through an online registry, and ICSI returned data to each clinic to show them how they were doing compared to other sites transparently, allowing clinics to contact each other to find out what was working best or to overcome common barriers. As a quality improvement project, there was no overall grant funding for DIAMOND; however, the HealthPartners Research Foundation received funding to follow and study the implementation using a stepped wedge study design with repeated cross-sections of patients across clinic settings (Crain et al. 2013).

2. Program Description

Eligible patients were 18 years or older. They had to be in a PCP's panel, with a PHQ-9 of 10 or more, and they could not have an entry diagnosis of bipolar disorder. These patients were identified by the involved clinics through electronic means or upon the patient's arrival into the

clinic to see their PCP. Once identified, the PCP was asked to decide if the patient was likely to have major depression or dysthymia, with PCPs having received prior training on diagnosis. Each clinic found it had to be proactive to ensure the easy availability of the primary measure (PHQ-9) in both case identification and monitoring of outcomes.

The way in which patients entered the care coordination program evolved over time as word of the availability of this option spread and early success was noted. Initially, the majority of patients came directly from the PCP to the CM via a "warm handoff", found to be far more successful than contacting patients by phone for screening. Over time, as popularity grew, entry into DIAMOND became independent of a specific PCP needing to authorize the referral, allowing any PCP to refer another provider's patients when cross-covering. In addition, patients would contact the clinic asking for the program after hearing about it from a family member or neighbor, and referrals became more common from psychiatric clinics, hospitals, and emergency departments. Those referrals from outside the primary care clinic required to be reviewed to make sure each patient indeed had a PCP, as this was an integral part of the model.

3. Adaptation of Collaborative Care Essential Elements

(a) Team-Driven Care

The team involved in this model included the patient, his/her PCP, a CM, and a consulting psychiatrist. Clinics were required to identify and block off time in the schedule of a care coordinator who was trained in the DIAMOND model by ICSI and charged with management of their whole population of depressed patients. The depression CM role was often a new one to primary care clinics at the time, and efforts were made to defend that role as unique to avoid a CM being pulled into multiple other tasks. The CM was most often a registered nurse (RN), but licensed practical nurses and social workers also were employed and could also be effective CMs. Behavioral activation and motivational interviewing were identified as important skills in this role, and a caseload of up to 100 patients per full-time CM was possible although it was common to see caseloads of 50-80 patients.

The DIAMOND program required psychiatrists to work in their capacity within the Collaborative Care Model – a role unfamiliar to many. Data on each patient, presented during the caseload review, was collected by the CM to enrich the process and increase the chances of the psychiatrist making meaningful recommendations without directly seeing patients. In addition, any patient not improving would be reviewed, and with the aid of the registry, the psychiatrist could focus on those patients most in need of attention versus just those who the CM remembered at the meeting. Availability outside this care review meeting was also important for an occasional call by the CM or by the PCP. The PCP wrote all prescriptions.

(b) Population-Focused Care

The program utilized a registry to manage the population of patients enrolled. Registry functionality was employed to attend to an entire list of patients in weekly systematic case

reviews where a psychiatrist could sort all the data on patients by severity of symptoms or length of stay and thus make sure patients with the most needs were not forgotten and patients not improving were not approached repeatedly in the same way. It also included the ability to generate reports on the population of affected patients to review with various audiences – for example, reviewing with a PCP of his/her patients, or generating reports on patients' progress for the director of a clinic or for those responsible for a group of clinics.

The Institute for Clinical Systems Improvement offered any participating group access to a registry specifically tailored for DIAMOND that was housed at the University of Washington. Some clinics used that registry, while others were given specifications based on that registry to develop their own registry. Included in those specifications was a list of consistent measures that needed to be sent to ICSI on a regular basis for quality comparisons. The registry offered a place to enter clinical data if it was not already a part of the EMR. In addition, CMs could track which patients needed a follow-up call, where to reach a patient on a given day, and how many times they might have reached out to a given patient and left a message. Finally, the registry offered real time access to administrative data to compare how CMs were doing at several clinics and to track useful data such as admission by PCP or by response rates by clinic.

Institute for Clinical Systems Improvement designers felt that relapse prevention was critical to the success of DIAMOND. A number of important activities related to relapse prevention were integrated into the DIAMOND model: meeting with a patient after he or she has gone into remission, reminding the patient that depression is a recurring illness, reviewing the earliest signs of an impending depressive episode, reviewing behavioral activation activities, providing education on the importance of adherence to medications, documenting which therapy approaches were most helpful for that individual, and creating an action plan for relapse. The expectation within DIAMOND was that patients would be enrolled until reaching remission (defined as two PHQ-9 results under 5 separated by at least 6 weeks). At that point, they were discharged. If the patient was not in remission by 12 months of participation, the expectation was that they would be discharged unless there was an obvious reason why more time in care management might be productive (e.g., a patient who just left an abusive partner towards the end of the year). The overall goal of the DIAMOND program was to get as many patients into remission as possible.

(c) Measurement-Guided Care

A screening and monitoring instrument allows case finding and treat-to-target planning and discussions to occur. Significant work was then required by each clinic to elaborate a method to distribute, collect, and record the PHQ-9 in a way that allowed for both patient care and outcome monitoring for the clinic. The PHQ-9 was chosen as the common tool, and the success of DIAMOND led to the larger adoption of this tool by Minnesota Community Measurement – a nonprofit organization charged with monitoring health outcomes for primary care across the state. Depression was the first mental health condition included in mandatory outcomes for primary care (and outpatient psychiatric specialty care) clinics for transparent comparison of outcomes on the Internet (http://www.mnhealthscores.org/).

In addition to the PHQ-9, each new patient entering DIAMOND was screened for anxiety (often using the GAD-7 [Spitzer et al. 2006]), alcohol misuse (often using the Alcohol Use Disorders Identification Test [Frank et al. 2008; Gual et al. 2002]), and for bipolar history (often using the Mood Disorders Questionnaire [Hirschfeld 2000]). While the PHQ-9 was required to do the model, the tools for these other comorbidities were offered as recommendations, allowing a clinic to pick a similar tool if preferred. Clinics could also add extra screening tools and questions for the CM to ask before each intake to enhance the psychiatrist's ability to make a meaningful initial suggestion to the PCP of a new patient.

(d) Evidence-Based Care

The model being implemented in DIAMOND was based on IMPACT and was chosen because of the amount of evidence in published literature supporting both efficacy and effectiveness. In addition, by having a psychiatrist review panels of patients and provide feedback on approaches to groups of PCPs, there was an opportunity to encourage the use of evidence-based approaches to depression. Each note to a PCP was a potential teaching opportunity. A guideline built for primary care from ICSI for depression was a reference source as it was adapted for this setting and updated each year. Care managers were each provided with access to this guideline and were encouraged to use it as a reference point in answering questions from patients or providers when appropriate.

4. Quality Improvement and Accountability

The implementation strategy for DIAMOND was that used in the Breakthrough series model of practice change (Institute for Healthcare Improvement, 2013). As described in the background above, practices were screened for readiness to implement this model. Those ready tended to have the capacity to implement both the PHQ-9 and use of a consulting psychiatrist, as well as the resources to hire a CM/care coordinator. They also needed buy-in from both those in the clinic and from leadership. Finally, they needed a champion at the intervention site and information technology support.

Practices selected for the study sent a team to be trained by ICSI. The team included the CM/coordinator, a primary care champion, a psychiatry consulting provider, and desk and nursing staff from the participating clinic. Information technology support also was encouraged to attend these meetings as needed. Plan-Do-Study-Act cycles were used to adapt aspects of the model to a given setting, and outcomes were tracked at each site and compared in a transparent way with all participating clinics, both within and outside a given medical group. A healthy competition ensued and was encouraged.

After introducing this model to many clinics, those trained in an earlier wave of training were recruited to teach their colleagues in a later wave. Nuances about how to implement aspects of the model often were uncovered through the use of those actually doing the work as trainers. The Institute for Clinical Systems Improvement provided feedback to all the clinics and

to leadership at all the sites on progress in recruitment, panel sizes, response rates, and remission rates.

5. Funding

The steering committee for DIAMOND included both providers of care and insurance representatives as members. It was clear from the start that both groups felt there was significant room to improve processes and outcomes in the state for adult patients with depression. Healthcare providers were willing to make significant changes but felt that they needed reassurance that this new model brought with it a new source of financing for non-direct care activities. Six large insurance groups within the state agreed to work with their organizations to create a new payment model to help sustain the changes.

In order to clarify a target amount for payment, ICSI was able to survey participating DIAMOND sites about the time involved in creating DIAMOND (e.g., committee meetings, the CM's schedule, time blocked in the psychiatrist's schedule) and time spent in caseload review and supervision. By pooling and de-identifying this data, a range of costs per month was available to participating medical groups in their negotiating with the insurance groups. The payers offered a monthly bundled reimbursement meant to cover both the work of the CM and the non-direct patient care activities of the consulting psychiatrist. Primary care providers involved in the care of these patients continued to bill as they had previously. Anti-trust laws prevented direct conversations about how much a given medical group was planning to bill, and this was left as a negotiation. All insurance groups involved agreed upon a single billing code initiated by ICSI-participating clinics representing a standard set of bundled services. Insurance groups agreed that 1 year was reasonable as a period of payment for an enrollee. After that, a practice needed to appeal to continue billing for DIAMOND services for a given patient.

6. Lessons Learned

(a) Care coordination for depression can be successfully implemented in a wide variety of settings for improving depression outcomes; cost reduction may or may not follow.

The DIAMOND sites consistently outperformed other primary care sites on 6- and 12-month response and remission rates as measured by the PHQ-9 and reported on Minnesota Healthscores during the implementation process. Pre-post comparisons done at given sites (Williams et al. 2011) also showed significant improvement in clinical outcomes. Neither of these comparisons was as rigorous as one would find in a randomized trial however, and during implementation it was clear that there was wide variability in outcomes by site, even within a medical group. It was also common to see a given clinic reach a certain level of outcome and remain there.

Finally, DIAMOND was not designed to reduce utilization in emergency departments and hospitals. Improving depression, it was argued, should naturally lead to reduced utilization of acute services, and most certainly it did in some patients; however, limited data exists from

DIAMOND about cost reductions. Cost reduction (i.e., changes in utilization) in few patients is difficult to generalize when some depressed patients are not using many services at all. In addition, those patients using the emergency department or hospital may need a different type of intervention involving social services or home visits if that is the primary outcome needed to support continuation of care coordination.

(b) Implementation science approaches are critical to successfully starting, improving upon, and sustaining care coordination models.

Care coordination models are disruptive in that they require changes in all aspects of a primary care clinic—the checking in and rooming of patients, management of phone calls and triage, changes in nursing roles, building the way in which a specialist (psychiatrist) integrates into the primary care workflow, and evolving the approach by the PCP to patients with depression. Simply providing such a model to a clinic without helping that clinic through the changes is like providing a chronic smoker with a pamphlet on the dangers of smoking and expecting that to be enough. Successful implementation has been studied, and organizations making such changes can benefit from attention to implementation science (Whitebird et al. 2014).

The implementation teams had data comparing outcomes between sites within and outside of their own medical groups. This comparison data was very helpful in creating some healthy competition to recruit more patients and to be better at capturing follow-up data. However, reasons for variation remained elusive. Practice sites had varying success at making collection and submission of their outcome data a priority within their institution to allow for analysis of site differences, and once a program was implemented and early results were in, it was easy to focus on the next site for implementation. In starting an implementation of Collaborative Care, the team should expect and plan for variation in outcomes. In a large health care system, a central team that is able to do small tests of changes that could impact outcomes at a few sites may help all the teams in knowing where to focus their efforts.

(c) Aligning incentives: pay attention to start-up costs and payer mix.

The bundled payment offered to clinics implementing DIAMOND was very helpful in both getting medical groups to participate (psychiatric time was covered as was the cost of the care coordinators salary) and in sustaining the model once it started. In addition, having a financial part of the model led to more structure in the length of treatment and definitions around discharge, as these were tied to payment. There was significant cost to each organization to start-up DIAMOND (i.e., the cost of hiring a care coordinator, creating an electronic registry, including the PHQ-9 in the workflow, and meetings with involved clinics to explore and plan). The organizational cost of implementing a change was never covered by the new reimbursement for DIAMOND. This cost is not a minor issue in a time when primary care practices were struggling to break even financially. In addition, the variety of sources of payment for services delivered to patients coming into primary care made it less likely that clinics could continue a model reimbursing for only a part of their eligible population. The

bundled payment system worked fairly well in clinics where the majority of patients were covered by one or a few plans, but in DIAMOND clinics with a large percentage of government payers, the program had trouble being sustained.

(d) Care managers need support and ongoing training.

A clear preference for RNs in the role of CM was present from the start. However, sites using individuals from other backgrounds such as licensed practical nurses and social workers had comparable outcomes. Sites using non-nurse CMs were able to save on costs but had to find ways to back up these CMs with nursing support. It was widely noted by those involved in the project that the personal qualities and the institutional support of the CM may have made more of a difference in outcomes than professional degrees. Sites with dedicated CMs did better than sites in which a CM was asked to take on several roles. Training of CMs is important, but it is also clear that the role involves ongoing skill development in motivational interviewing. Weekly visits with psychiatrists have educational value as well.

(e) Psychiatrists need to learn new skills to do this model effectively.

Psychiatrists were not all comfortable with this new role; structured training and peer support/mentoring were helpful. Psychiatrists need to be comfortable trusting their colleagues in primary care. Fears about lawsuits were addressed, and this model was compared to any curbside support given in electronic consults where the primary responsibility remained with the PCP. Primary care practices often had trouble finding psychiatric support, especially in rural areas, and access to psychiatric services was noted to be an overall stressor for primary care. A general rule-of-thumb suggestion born of experience with the model over time was to contract with a psychiatrist for 2 hours per week per full-time CM for caseload supervision. When a primary care site had two CMs, this was more efficient for the psychiatrist who might then be able to block off a half-day and reduce travel time. Psychiatrists with some responsibility for the overall outcomes and processes in the primary care clinics where they were consulting tended to enjoy the role and contributed more to improved outcomes than when simply contracting for the time.

C. Re-Engineering Systems of Primary Care Treatment of PTSD and Depression in the Military (RESPECT-MIL)

1. Background and History

The RESPECT-Mil program (Re-Engineering Systems of Primary Care Treatment of PTSD and Depression in the Military) is an Army-wide, Collaborative Care initiative aimed at improving the primary care system's capacity to identify and effectively treat service members with depression and posttraumatic stress disorder (PTSD) within the military health system (MHS) (Wong et al. 2015). The MHS, with an annual budget over $55 billion, is responsible for the provision of health care to roughly 10 million beneficiaries who receive care in over 300 military treatment facilities worldwide, making it among the largest and most diverse health systems in existence (CBO: Congressional Budget Office 2014).

The initiation of RESPECT-Mil in January 2007 was in response to a clearly demonstrated MHS need: during many years of armed conflict in Iraq and Afghanistan deploying some 2.6 million men and women in uniform, data emerged regarding high rates of PTSD, depression, and other mental health conditions as well as low rates of specialty mental health service use among those affected (Hoge et al. 2004; Tanielian et al. 2008). Indeed, of the nearly 20% of service members returning from deployment with PTSD or depression, fewer than one-fourth received mental health care from a specialist, in part due to stigma and the potential for occupational repercussions when these problems come to light (Hoge et al. 2004; Tanielian and Jaycox 2008).

Collaborative Care is an evidence-based approach to these challenges. The RESPECT-Mil program adapted a Collaborative Care Model previously tested for depression by adding PTSD (Dietrich et al. 2004; Oxman et al. 2002). With the assistance of an original team of MacArthur Foundation funded investigators, a 2005-2006 demonstration project with feasibility assessment was completed at a busy primary care clinic serving the medical needs of the 82nd Airborne Division. The study found high PCP satisfaction with and acceptance of the RESPECT-Mil approach, and two-thirds to three-fourths of service members reported clinically significant improvements in their psychiatric status (C. C. Engel et al. 2008). The success of this demonstration led to large-scale implementation at the direction of the US Army Surgeon General (Surgeon General 2013).

The RESPECT-Mil program has served as the precursor to the currently existing Collaborative Care Patient-Centered Medical Home (PCMH) model now implemented for all beneficiaries across Army, Navy, and Air Force primary care clinics. Before transitioning to the second-generation MHS PCMH approach, RESPECT-Mil was implemented for over 3.5 million visits in 94 primary care clinics located at 39 installations and eight time zones worldwide. In addition, RESPECT-Mil led to the first large multisite randomized controlled trial of a health care delivery intervention in the MHS, the STEPS-UP Trial (STepped Enhancement of PTSD Services Using Primary Care), a trial evaluating Collaborative Care implementation approaches for PTSD

and depression (C. C. Engel et al. 2014; C. Engel et al. 2015). This trial is nearing completion at this time.

2. Program Description

All service member visits to participating primary care clinics are routinely screened for PTSD using the four-item Primary Care PTSD screen (Prins et al. 2004) and for depression using a yes/no two-item PHQ-2 (Kurt Kroenke, Spitzer, and Williams 2003). Patients screening positive (PC-PTSD ≥2 or PHQ-2 ≥ 1) are given the PTSD Checklist (PCL(Blanchard et al. 1996), PHQ-9, and single item PHQ question assessing symptom-related functional status difficulties (K Kroenke, Spitzer, and Williams 2001). Primary care clinicians were trained in these measures, given guidance on how to use them, and afforded ultimate discretion as to what constitutes a positive diagnosis. All usual patient referral options were available (e.g., watchful waiting, routine primary care treatment and follow-up, emergency department referral, specialty care referrals, inpatient hospitalization). Clinicians had the additional option of enlisting the help of a RESPECT-Mil "care facilitator", an RN who kept patients fully engaged in care, tracked treatment adherence, assessed symptom status at a minimum of every 2 weeks and every 4 weeks thereafter, and entered relevant data into a decision support system for tracking of symptom improvement.

3. Essential Elements of Collaborative Care

(a) Team-Driven Care

The MHS used an approach to team care that involves primary care clinic office support staff, primary care nurses, the primary care clinician, a nurse trained in care management of depression and PTSD, and a consulting psychiatrist. Clinic support staff was trained to initiate a waiting room screen for depression and PTSD. Clinic nurses reviewed the initial screening with the patient at the time of assessing vital signs (actual clinic flow was adapted with different clinics in consultation with a health system implementation team). If the initial screen was positive, patients were asked to complete a validated hard copy "diagnostic aid," and the clinician reviewed the result briefly with the patient. The clinician asked any necessary follow-up questions. Based on patient responses, referral to specialty care or to the clinic-based collaborative CM was made. If the referral was to the CM, he or she followed up with the patient, usually by phone but sometimes in person, at regular intervals to assess patient symptom severity using the same measures used at the index primary care visit. In addition, assessments of treatment side effects and adherence were assessed and captured in a health information technology platform that created registries. The consulting psychiatrist met with nurse CMs weekly to review patients' status, discuss treatment plans, and recommend any treatment plan changes to the primary care clinician as appropriate using the electronic health record.

(b) Population-Focused Care

A web-based PTSD and depression decision support tool was used to generate real-time symptom registries at the care facilitator level for measurement-based treatment planning. Care facilitators assessed patient symptoms at regular intervals (within 2 weeks after the index visit and at least every 4 weeks thereafter). Registries were used to identify patients whose symptoms were not improving so that their treatment plan could be intensified or otherwise modified. The registry also identified patients by level of treatment engagement; efforts were made to ensure that patients at risk of falling out of treatment or who had already fallen out of treatment were identified and efforts were made to better engage or reengage them. Efforts to adjust treatment plans and improve engagement were reviewed by the psychiatrist with the care facilitators using the real-time electronic registry.

(c) Measurement-Guided Care

The RN care facilitators tracked symptoms in the patients they were monitoring, assessing them using validated symptom and functional status assessment tools and entering results into the online decision support tool. Resulting registries were generated and used to inform weekly reviews of care facilitator caseloads by the installation's RESPECT-Mil psychiatrist.

Improvement of 5 points on either the PCL or PHQ-9 was considered minimally significant clinical improvement. Less than a 5-point improvement more than 8 weeks after the most recent treatment change prompted an automated flag and triggered reassessment of that patient's treatment regimen. Changes in regimen included the addition of a new medication or discontinuation of existing therapies, changes in medication dosing, addition of psychotherapy or changes in psychotherapy frequency, modality, or provider.

(d) Evidence-based Care

All RESPECT-Mil program practices were codified in manuals (http://www.pdhealth.mil/respect-mil.asp). Screens and ongoing patient status indicators were published standardized measures (e.g., PHQ-2/9, PC-PTSD, PCL). Manuals for PCPs, behavioral health specialists, and care facilitators provided guidance with regard to stepped psychopharmacologic treatment. In the second generation RESPECT-Mil approach, assessed in the STEPS-UP Trial, stepped psychosocial interventions were added. These included care facilitator engagement strategies, nurse-assisted online Cognitive Behavioral Therapy (CBT) self-management, telephone CBT with a clinical psychologist, primary care clinic-based therapy with a social worker or psychologist, and specialty clinic-based psychotherapy services (see Engel et al. 2014 for more detailed summary of the evidence-base for these modalities).

4. Quality Improvement

The RESPECT-Mil program quality improvement efforts were driven and sustained based on a carefully crafted worldwide structure and accountability (Belsher et al. 2014). Each implementing installation (i.e., a single Army Post, on average covering about three primary care clinics each, up to 7-8 clinics) assigned both a primary care and behavioral health

champion. The latter was a psychiatrist that provided weekly caseload supervision for all care facilitators. The former was a PCP responsible for monitoring and overseeing that installation's RESPECT-Mil quality metrics.

Overall RESPECT-Mil quality improvement assessment, reporting, and metrics were driven by the "R-MIT" (RESPECT-Mil Implementation Team). The R-MIT was a multidisciplinary group (psychiatrist, psychologist, social worker, nurse, statistician, database manager/programmer, health informatics specialist, administrative support, and expert part-time consultants) located in Silver Spring, MD. All R-MIT staff (a) completed 2-day trainings for new champions; (b) performed at least monthly 30-minute telephone consultations with each RESPECT-Mil installation team (champions, care facilitators, and administrative assistants) to strategize around implementation challenges; (c) executed one site visit per year for each implementing installation with in- and out-briefs for facility commanders and delivery of a written installation visit report; and (d) distributed RESPECT-Mil semi-annual installation report cards summarizing key clinical metrics and comparing them to grand mean program performance and providing site performance rankings. Data for these reports were gleaned from installation data reports, aggregate electronic health record reports, and outcomes data from the online clinical decision support tool used by care facilitators and their psychiatrist supervisors.

5. Funding

Program personnel (one General Schedule (GS)-10 equivalent RN care facilitator and one GS-5 administrative assistant equivalent per 10,000 military personnel in participating clinic catchment area; 5,000 minimum for funding of one of each) were funded through Army Medical Command Behavioral Health funding under Medical Command Operations Order. With the transition to the PCMH, program resourcing was driven in part by a Department of Defense instruction and budgeting guidance and each military service's derivative policies.

6. Lessons Learned

The lessons learned implementing RESPECT-Mil have been broad and myriad. Only a few are summarized briefly here.

(a) Collaborative Care is feasible to successfully implement and maintain quality control of in a worldwide context.

The RESPECT-Mil program was a major operation by any standard.

(b) Central assistance aids high fidelity implementation.

There were many examples in which installations, clinics, and individual care facilitators identified, corrected, and conquered complex local challenges with the assistance of the R-MIT. By training, talking with, visiting, and inspecting data from implementing installations, the R-MIT became the historical repository for lessons addressing specific challenges that arose again

and again. Central assistance is also important for supplementing the scarce mental health resources in many rural settings through the use of web-based self-management, phone-based CBT, and remote care facilitation services.

(c) The use of an electronic decision support system facilitated timely changes in the treatment plans of patients for whom treatment is likely to have otherwise remained unchanged and ineffective.

The process and outcomes data from this system, populated with data collected by care facilitators during phone follow-up contacts, also was readily used in aggregate to monitor installation, clinic, and care facilitator performance.

(d) Routine actionable performance reports with high installation/organizational visibility resulted in observable responses, particularly from under-performing installation programs.

In most cases, installation efforts to avoid poor performance (more than efforts to be viewed as a high performing installation) drove program performance in the direction of greater overall fidelity with time. This fostered and sustained a culture of performance improvement.

(e) Installation site visits were essential for ensuring that high-level policies achieved intended objectives and for identifying unintended effects early and correcting them.

They also ensured that RESPECT-Mil implementers considered the first hand views of the entire health care team (e.g., unit clerks, medics, nurses, administrators, records personnel, primary care physicians and mid-level providers, mental health specialists from all disciplines). These views were always informative.

(f) The use of the macro-level central assistance program organizational model not only facilitated program implementation and quality improvement efforts; it led to the recent successful completion of a large multisite randomized effectiveness trial of a second-generation Collaborative Care method (C. Engel et al. 2015).

D. Veterans Health Administration

1. Background and History

As the American health care system moves toward integrated and Collaborative Care, PCMH, outcome-based models of healthcare funding, and accountable care organizations, the experience of the nation's most extensive Collaborative Care implementation, the Veterans Health Administration's (VHA) Patient Aligned Care Team (PACT) model is relevant and important. The VHA is in the process of implementing Primary Care-Mental Health Integration (PC-MHI) in over 7,000 primary care clinics (Reid and Wagner 2014).

The VHA cares for over 5.3 million primary care patients; more than half of that care is provided in Community-Based Outpatient Clinics (CBOCs) (Schectman and Stark 2014). There is a single patient electronic record system used organization-wide. Twenty percent of VHA patients receive mental health services (Post and Van Stone 2008). In 2010, the VHA began to augment primary care teams to ensure at least four full-time health care professionals per panel of primary care patients, including mental health professionals, nutritionists, and clinical pharmacy specialists. Organization-wide metrics provide accountability and visibility for opportunities to standardize and improve access and care.

Primary care-mental health integration in the VHA blends two models of integrated care: 1) the Collaborative Care Model (referred to as care management) and 2) the Behavioral Health Consultant Model (referred to as co-located care) (Dundon and Dollar 2011). All VA Medical Centers and CBOCs with more than 5,000 patients are required to implement both models. The requirement for a blended model is based on the evidence base of the Collaborative Care, and the need for co-located mental health specialists to provide immediate access for patients. Collaborative Care is designed to support PCPs prescribing of psychotropic medications and includes proactive longitudinal follow-up and brief behavioral health interventions. Collaborative Care services are usually provided over the telephone, often by staff who are not independently licensed but who are supervised by a psychiatrist or psychiatric advanced practice nurse. Co-located behavioral health consultants conduct curbside consultations with PCPs and participate in interdisciplinary team huddles.

2. Program Description

Most patients in the VHA with depression are treated in primary care; therefore, collaboration between primary care and mental health care providers is essential for optimizing treatment (VHA: Veterans Health Administration 2008). Most patients are introduced to the behavioral health consultant via a "warm handoff" from the PCP to the PC-MHI provider operating an open access clinic (i.e., no appointment necessary). In some programs, referrals are made using the VHA's computerized patient record system (CPRS) electronic consultation function (VHA: Veterans Health Administration 2008). The decision to make an electronic referral or warm handoff is based on the clinical experience and level of concern of the referring PCP. No specific referral criteria have been operationalized. Licensed independent

mental health providers conduct focused assessments and deliver brief interventions, usually face-to-face in the primary care clinic. Some PC-MHI encounters are scheduled solely for the purpose of delivering mental health treatment while others are conducted as part of the primary care encounter.

3. Adaptation of Collaborative Care Essential Elements

(a) Team-Driven Care

The Department of Veterans Affairs has a detailed staffing formula that prescribes full time equivalent assignments of behavioral health providers (BHPs) to primary care clinics, based on enrollment population. Case identification, triage, evaluation/consultation, follow-up, case management, psycho-education, medication management, and coordination of patients needing longer-term or more intensive mental health specialty services are targeted to all primary care panels across the national VHA health system.

Veterans Health Administration PC-MHI program staffing varies among facilities, and facilities vary in size, but a 2010 PC-MHI evaluation survey (Wray et al. 2012) and a VHA operations manual (Dundon and Dollar 2011) reported the following system-wide average full-time equivalent employees by provider type per facility, revealing of relative provider mix for a clinic accommodating approximately 3,000 to 4,000 veterans:

Table 3: Characteristics of Full-Time Equivalent (FTE) Staff per Clinic in VHA Integrated Care Implementations

Staff Title	FTE
Psychiatrists	0.54
PhD level psychologists	1.11
Mental health nurses	0.69
Masters of social work	0.62
Prescribing mid-level providers	0.40
Mental health administrative support	0.31
Mental health technicians	0.23
Doctoral level pharmacists	0.11
Masters level counselors/therapists	0.04
Primary care physician	3.00

(b) Population-Focused Care

Implementation of the PACT model is monitored through standard metrics that are shared nationwide. Data can be viewed for the entire health system, for regions, for facilities, for panels, and for individual providers. Standard metrics are related to panel management, patient engagement, patient satisfaction, access, continuity, staff satisfaction, care coordination, and clinical improvement (Schectman and Stark 2014). Clinics vary in their commitment to dedicated time for teams to participate in team population health activities

through registry review and team discussion. Partial determinants of degree of implementation of the PACT/Collaborative Care Model in the VHA include physical presence of mental health professionals in the primary care clinic, availability of space in the primary care clinic, and availability of financial resources (Chang et al. 2013).

The information technology support needs for the optimal practice of population health are substantial (VHA: Veterans Health Administration 2008). The information technology system should ideally facilitate the ability to track a panel of patients, identify next steps in clinical care, provide decision support at point-of-care for medication dosing and other clinical treatment decisions, enable patients to enter patient-reported symptoms, provide secure messaging for team members, and provide outcome feedback to care providers and teams.

The VA utilizes a current software platform to accomplish many of these needs. The Behavioral Health Lab (BHL) software package is an informatics tool to facilitate the delivery of measurement-based behavioral health care. The software provides a mechanism for collecting patient reported outcome data, tracking patients over time, monitoring patients' symptoms, and generating patient and program level outcome data. The program level data include predefined reports, but data is also easily exportable for use locally. The software program has the capacity to provide decision support for initial or baseline interviews. The software creates patient focused reports for any visit that tracks treatment progress and progress notes for clinical records. The BHL interfaces with the VHA's electronic health record and could be used with other health systems. The interface capacity enhances the user experience by populating BHL with patient demographic information and pushing patient reports from BHL into the existing VHA EMR system. Additionally, BHL-structured assessment data are pushed to the Mental Health Assistant software which populates the data in the National Data Warehouse.

(c) Measurement-Guided Care

Because the VHA is a large system of care, the preponderance of research has focused on implementation success of PC-MHI and access-relevant metrics such as wait-time for behavioral health services (Hankin et al. 1999). There is a relative paucity of data at this time related to outcomes attributable to measurement-based treatment to target and clinical outcomes.

The most robust outcome data to date within VHA come from a depression treatment initiative, Translating Initiatives for Depression into Effective Solutions (TIDES) Project (VHA: Veterans Health Administration 2008). The TIDES project has been implemented in several VHA regions and aims to improve care for depressed veterans by implementing depression Collaborative Care Models through evidence-based care guidelines. Support for treating to 50% response and full remission was provided in implementation expectations for the sites participating in the model. Initial data from the TIDES program from 1,000 patients enrolled in the program revealed that the model resulted in very high levels of medication adherence (85%) and follow-up visits (95%). Remission rates at 6 months were 62% among primary care

patients and 40% among the more severely ill veterans referred to mental health specialty treatment (Rubenstein et al. 2010).

(d) Evidence-Based Care

The VHA maintains an extensive set of evidence-based practice guidelines, regularly updated by expert panels, in collaboration with the Department of Defense. Adherence to practice guidelines is part of VHA providers' quality and performance improvement program, both as individuals and as groups. In many facilities performance pay (bonuses) are partly determined by review of adherence to aspects of evidence-based practice guidelines. The guidelines are readily available in the CPRS system. Critical reminders from evidence-based guidelines are incorporated into "push" clinical reminders upon opening of patient records. For example, if metabolic monitoring for antipsychotic medication is due, a "reminder due" message is evident on the front page of the EMR.

Psychotherapists in the VHA PC-MHI program receive training in brief evidence-based psychotherapies, including Problem Solving Therapy, and adaptations of CBT-based therapies. Designated evidence-based therapy coordinators ensure fidelity to the manualized conduct of psychotherapy via periodic review of case records.

4. Accountability and Quality Improvement

National VHA evaluation and local program data have demonstrated that PC-MHI has increased the likelihood of receiving care defined by evidence-based practice guidelines, and enhanced treatment engagement for patients referred on to VHA specialty mental health services (Pomerantz et al. 2014). The increase in access to care resulting from the widespread implementation of PC-MHI has led to significant and substantial increases in the rates of detection, diagnosis, and treatment of depression, anxiety, PTSD, and substance use disorders (VHA: Veterans Health Administration 2008; Zivin et al. 2010). The VHA has nationally standardized staff training and patient educational materials, created centrally using evidence-based methods and materials curated by content experts. With almost 5 million PC-MHI encounters to date, VHA's experience is that Collaborative Care can be successfully implemented at scale.

The VHA Primary Care Research in Substance Abuse and Mental Health for Elderly (PRISM-E) randomized controlled trial demonstrated that VHA patients were significantly more likely to engage in mental health services that were integrated with primary care than to follow through on traditional referrals to specialty services. For example, depressed patients in integrated care had 2.86 higher odds of having at least one contact with a mental health specialist than those in referral care (Bartels et al. 2004).

5. Funding

Veterans Health Administration funding mechanisms facilitated relatively easy realignment of resources and population-wide implementation of PC-MHI. Workload tracking is

based largely on patient resource utilization and BHP workload documentation. Behavioral health provider workload is captured using Current Procedural Terminology codes for PC-MHI-relevant encounter types (Dundon and Dollar 2011):

a) Initial consult visit
b) Follow-up visit
c) Treatment adherence enhancement visit
d) Relapse prevention visit
e) Behavioral medicine visit
f) Psycho-educational group visit
g) Conjoint (BHP and PCP joint visit) consultation
h) Telephone consultation
i) Unscheduled staff- or patient-initiated contact for immediate problem-focused intervention

Several clinical services are not provided or staffed for in PC-MHI, including:

a) Outpatient psychotherapy requiring more than six visits
b) Intensive outpatient services
c) Psychological or neuropsychological testing
d) Patients already in treatment with a specialty mental health provider, service, or program

6. Lessons Learned

(a) Depression is not the only condition.

Nationally, the most frequent PC-MHI diagnoses are, in order of frequency, major depressive disorder, other depression, PTSD, anxiety disorder, alcohol use disorder, substance use disorder, bipolar disorder, schizophrenia, and personality disorders (Wray et al. 2012). While over 95% of PC-MHI programs addressed depression and anxiety disorders in 2012, 83% addressed PTSD, 55% alcohol dependence, 53% bipolar disorder, and 46% schizophrenia (Wray et al. 2012).

(b) Transformation to population health is evolutionary.

Clinical care teams can preserve clinician-patient relationships and therapeutic alliances when they are high-functioning teams emphasizing good communication and shared decision-making (Reid and Wagner 2014). In the evolution of PC-MHI toward true team care and population management, a challenging stage is when there is co-location but not totally integrative team care. Veterans Health Administration PACTs are in various stages of transformation; effective leadership and organizational commitment are necessary for evolution to true integrated team care and population health. The degree of evolution toward a pure Collaborative Care or population health model also has been shown to be dependent on the presence of psychiatrists or psychologists in the primary care clinic, greater financial

sufficiency, and greater space availability (Chang et al. 2013). To date, there is insufficient data to conclude whether or not VHA efforts to promote self-management, robust care coordination, and healthy behavior change have resulted in population health improvements (Reid and Wagner 2014).

(c) System engagement is related to ease and degree of Collaborative Care implementation.

Reid and Wagner (Reid and Wagner 2014) identified eight large-scale changes that must be implemented and sustained to achieve PC-MHI in a population health program like the VHA:

1. Engaging leadership in meaningful change
2. Deploying evidence-based quality improvement and change strategies
3. Empaneling patients to establish care accountabilities
4. Shifting to team-based rather than clinician-directed care
5. Promoting patient-centered care interactions
6. Deploying strategies to enhance chronic, preventive, and acute care
7. Ensuring access of patients to their care teams
8. Establishing effective care coordination strategies

(d) Leadership provides a critical fuel for Collaborative Care implementation.

The differences between PC-MHI programs and traditional mental health in the VHA are dramatic and require a culture shift for all stakeholders, from PCPs to BHPs, and leadership at all levels. Research from the VHA has shown that if leaders do not allocate resources, support providers, identify clinical change champions, or define job duties, implementation of Collaborative Care, or even co-located care, is likely to be hindered (Guerrero et al. 2015; Chang et al. 2013). National VHA leadership has implemented organization-wide training and emphasis on new skills that must be learned to effectively implement PC-MHI, including cultural competency, motivational interviewing, communication skills such as active listening, and use of telehealth and home-based telehealth technology.

E. University of California Davis Health System

1. Background and History

The University of California-Davis Health System (UCDHS)'s Depression Care Management pilot projects (2011 and 2012), through a pay-for-performance initiative, led to the development of the Care Coordination Program (CCP) in 2013 that utilizes the Collaborative Care Model for behavioral health and disease management. The goal of the CCP is to improve interdisciplinary collaboration within the UC Davis Primary Care Network (PCN), as many patients have limited access to in-person psychiatry consultations when PCPs request specialty mental health care. Primary care providers now refer patients to the CCP to target mental health outcomes through care management, PCP education initiatives, and electronic consultations with psychiatrists. The education initiatives within the CCP have contributed to the program's popularity and buy-in from PCPs and health system administration.

2. Program Description

The UCDHS CCP targets mental health outcomes within each PCN through care management, PCP education initiatives, and electronic consultation using referrals to CMs (licensed clinical social workers [LCSWs] and nurses). The most common referrals are for depression, diabetes, obesity and smoking cessation. There are an increasing number of referrals for patients with behavioral health resources to support patients with comorbid psychiatric and medical disorders. The PCP places these referrals through an order-set within the EMR, briefly detailing the consultation question(s), with the only exclusion criteria at this moment being child and adolescent patients. The CMs receive the referrals and then work closely with the patients, PCPs, and psychiatrists to improve medical and psychiatric outcomes.

3. Adaptation of Collaborative Care Essential Elements

(a) Team-Driven Care

The care coordination team consists of a psychiatrist, CMs (LCSW and nurse) and a clinical pharmacist. Upon receiving a referral, the CM contacts the patient by telephone to assess for specific needs. The assessments include inquiry into medication adherence, clinical outcomes data (e.g. PHQ-9 or GAD-7), side effects, risk assessment, and resources available. The Care Coordination team meets weekly to "round" on active patients. Each member of the team fully engaged to influence and guides the treatment approach. The psychiatrist leads the team in data review, diagnostic clarification, and opportunities to improve outcomes through treatment adjustment or resource referrals.

The assessments and recommendations from the team meetings are recorded into the EMR and, to ensure continuity of care between the Care Coordination team and the PCP, the psychiatrists often follow-up with a communication through the EMR to the PCP, particularly if there are recommendations for medication adjustment. These communications allow an

opportunity for teaching, which may include the rationale for a particular diagnosis and explanation of the treatment recommendations. In addition to weekly care coordination team meetings, PCPs frequently contact the psychiatrists for brief communications and "curbside" consultations. Case managers have access to psychiatrists' pagers and mobile numbers to ensure real-time assistance with urgent questions. These personal communications add to PCP satisfaction, making it easier to garner PCP and administrative support for the Collaborative Care Model. Psychiatry involvement within the CCP has been rated very highly by both PCPs and CMs.

(b) Population-Focused Care

Each CM has a caseload of approximately 100 patients, while weekly team meetings normally cover 10-14 patients over a 2-hour session. Case managers guide the weekly team meetings through presentation of patients in whom the CM identifies a question regarding mental health. Practically, this means new referrals from PCPs or follow-ups from discussions during a previous team meeting. As such, there is no registry component consistently utilized to guide care.

(c) Measurement-Guided Care

Both PHQ-9 and GAD-7 assessments are easily accessible within the EMR as a drop-down menu, and PCPs are strongly encouraged to assess for depression and anxiety using these brief assessment tools for each patient they refer for mental health care. The CM incorporates the PHQ-9 and GAD-7 into the patient presentation during the CCP meetings. Measurement-based care, including a "treat-to-target" philosophy, is frequently used in CCP team meetings.

(d) Evidence-Based Care

Initial telephone encounters from CMs include motivational interviewing, Brief Supportive Therapy, and elements of CBT, including behavioral activation. Manuals for care management to standardize some evidence-based practices are currently under development, and monthly in-services delivered by the psychiatric consultants with care management staff are provided on behavioral health topics such as depression and anxiety disorders in the medically ill, personality disorders, eating disorders, and others.

4. Accountability and Quality Improvement

Initial quality improvement analyses have demonstrated reductions in healthcare utilization for patients enrolled in CCP along with cost reductions as well (unpublished work, UCDHS Care Coordination Value Analysis, November 2014). As the CCP evolves and is refined, ongoing quality improvement will be crucial in determining the optimal patient population to target (choosing the "right" type of patients), metrics for evaluating treatment teams, and outcomes of physician education.

5. Funding

The University of California-Davis Health System has significantly invested in the Collaborative Care Model. Beginning in 2010, the successful UCDHS Depression Care Management project through two consecutive pay-for-performance pilot grants brought a psychiatrist into a select number of UC Davis PCN clinics for Lunch & Learn sessions. In 2013, the continuing positive feedback motivated the UCDHS to fund the CCP within all 17 of the PCNs. The services of this program were funded through the Department of Health Management and Education who support the salaries of the CM (initially four LCSWs and five nurses) in addition to 0.1 FTE of two psychiatrists supported by the UCD Department of Psychiatry and Behavioral Sciences. Additionally, a Psychosomatic Medicine Fellow maintained their own treatment team for the 2014-2015 academic year in periodic meetings with protected time.

Because of the acceptance and success of the CCP, UCDHS has recently been awarded separate grants to be conducted within the CCP framework. One award is to evaluate asynchronous and synchronous telepsychiatry (an Agency for Healthcare Research &Quality-funded RO1 study) consultations at two PCNs, and the other is to evaluate asynchronous telepsychiatry (internal Practice Management Board Innovations Grant) consultations for Medicare patients within two PCNs.

6. Lessons Learned

(a) Importance of care managers

The importance of CMs cannot be overstated, as they engage in a continuous process of refining their skills of bridging information between the PCP, patient, and psychiatrist. A good fit for the CM role is one who possesses skills in rapid diagnostic assessment, efficient presentations, excellent communication skills (particularly when shifting between patients, PCPs, psychiatrists, and team meetings), and the ability to deliver evidence-based brief interventions. They also have extensive knowledge of local resources, particularly important because of the high percentage of referred patients covered through Medicare and Medicaid programs, which offer limited options for access to mental health services.

(b) Local champions and attention to stakeholders

Primary care and other local champions for integrated care exhibit a sincerely held belief in integration and have an ability to tactfully engage and navigate the varying partners important to integration success, including human resources staff, physicians, nursing leadership, mental health leadership, social work leadership, and system administrators and information technology experts. These champions explore innovative ways for systems improvement such as creative funding sources for innovations including telepsychiatry for under-served areas. Because of strong across-the-board buy in, the CCP teams were able to offset the large behavioral health needs encountered by PCP turnover, at times, through shared coordination and communication, improved access to consultations and support, and expert

evaluation and triage services that would have otherwise been lacking. As a result of obtaining crucial administrative support and meeting the stakeholders' needs first, the CCP program has achieved greater success.

VIII. TABLE 4. IN-VIVO COLLABORATIVE CARE MODEL IMPLEMENTATION CHARACTERISTICS

	Population	Eligibility	Referral Mechanism	Funding	
				Initial	Sustained
MHIP	Initial: Uninsured in 2 WA state counties; Current: Contracted Behavioral Health Benefit of a non-profit Medicaid Vendor	Adults with behavioral health needs receiving benefits from designated Medicaid vendor	Uniform screening in Primary Care; Primary Care referral for Behavioral Health; Warm Handoffs	State Legislative Action; Levy Funds; Defined proportion of CM revenue tied to performance	Non-profit Medicaid Vendor Benefit
DIAMOND	Adults with eligible private health insurance plans	Adults with PHQ-9 score ≥ 10; Negative Bipolar Screen; Benefits through 1 of 6 private insurers	Primary Care Screening for Those eligible; Warm Handoffs; Specialty Referrals Required Assignment of PCP	Multi-payer (N=6), private; Pooled-data allowed for range of PMPM available to clinical systems on an individually negotiated rate; individuals are eligible for 12 mos. of PMPM	Not applicable
RESPECT-Mil	Active-duty military	Adults with Positive Screen on either 4-Item PTSD Screener in Primary care (Prins 2003; PC-PTSD ≥2) or PHQ-2 (≥1); followed by Positive PCL and PHQ-9	PCP option for referral to CM with RESPECT-Mil or traditional care mechanisms	Salaried; 1 equivalent RN care facilitator and 1 administrative assistant equivalent per 10,000 military personnel in participating clinic catchment area; 5,000	Transitioned to PCMH funding at discretion of DoD, folded into PCMH payment methodologies

				minimum for funding of one of each	
Veterans Health Administration PACT	Adult Veterans	Behavioral health disorder; at discretion of primary care physician (their comfort level, access)	Warm-handoff to CM in primary care setting primarily, EMR order referral secondarily	Salaried; CPT codes generated for BH services to track process outcomes and volume of services provided	Not applicable
UC Davis Coordinated Care Teams	Adult persons with Primary Care within UC Davis Primary Care Network (PCN)	Behavioral health disorder; at discretion of primary care physician (their comfort level, access)	Electronic order entry in EMR	Grant-supported "pay for performance" pilot Lunch and Learns with psychiatrists in primary care	California Department of Health Education and Management (salaried CMs), UCDHS Department of Psychiatry FTE Psychiatric Faculty, Psychosomatic Medicine Fellow; Two new grants, an R01 and internal funding for ongoing telepsychiatry efforts

IX. TABLE 5. IN-VIVO COLLABORATIVE CARE MODEL ADAPTATION OF ESSENTIAL ELEMENTS

	Team	Population Health			Measurement Based Care Outcomes	Evidence Based Care	
		Caseload	Registry	Caseload, Supervision		Training	Algorithms
MHIP	PCP, CM/ Behavioral Health Specialist, Psychiatrist Consultant	40-100 per CM	Real-time MHITS, Web-Based Registry, separate from EMR; tracks clinical outcomes and lapses in care	Protected time, typically weekly, for Consulting Psychiatrist and CM	PHQ-9, GAD-7, AUDIT, MDQ, DAST[1]	Systematic and ongoing training support for CMs and Psychiatric Consultants	System-wide, published algorithms; common medications used and educational materials for PCPs
DIAMOND	PCP, CM/ Behavioral Health Specialist, Psychiatrist Consultant	100 per CM, 50-80 common	Real-time Web-Based Registry, Managed by 3rd Party Implementation Support	Weekly as allowed with CM, Psychiatrist	PHQ-9, GAD-7, AUDIT, MDQ	Ongoing modeling, backup of non-nursing trained CMs by nurses was helpful	None
RESPECT-Mil	PCP, PCP clinic nurses, PCP office staff, PCP Depression and PTSD Nurse, Consulting Psychiatrist	50-80 per CM	Real-time web-based PTSD and Depression registry; Capacity to target persons lapsing in care; triage worsening clinical outcomes	Protected with PTSD/Depression NCM and consulting psychiatrist weekly	PHQ-9, PCL	RESPECT-Mil Implementation Team; On-boarding orientations, monthly support calls and once-yearly on-site visitations with report cards	Standardized algorithms were in place for PTSD/Depression and distributed to all team-based participants

	Team	Population Health			Measurement Based Care Outcomes	Evidence Based Care	
		Caseload	Registry	Caseload, Supervision		Training	Algorithms
Veterans Health Administration PACT	At least one co-located Behavioral Health Clinician with each Primary Care clinic; PACT staffing averages 0.5 FTE Psychiatrist per primary care clinic, 1.11 FTE psychologist, and 0.69 mental health nursing equivalent (Care Management)	Not defined.	Behavioral Health Lab (BHL) Software System allows for patient-level behavioral health tracking and monitoring, clinical decision support and program-level performance monitoring.	Variable across clinic implementation site; dependent upon physical co-location, space and funding availability	No consistent program-wide clinical outcomes; Depression outcomes measured for TIDES program	Nationally curated trainings and patient-education materials for various behavioral health conditions	Centrally supported algorithms available through on-line resources for review
UC Davis Coordinated Care Teams	Psychiatrist, CM (LCSW and a Nurse), Pharmacist	100 per CM	None consistently utilized	Weekly; physically-present team-members discuss 12-14 patients selected for review by CM	PHQ-9, GAD-7 embedded within EMR system for easy review during caseload supervision	Nurses and LCSW trained on EB Psychosocial Interventions	Psychiatrists "curbside" with PCPs regarding stepwise approach to management of common disorders

[1]PHQ-9: Patient Health Questionnaire 9-Item (K Kroenke, Spitzer, and Williams 2001), GAD-7: Generalized Anxiety Disorder 7-Item (Spitzer et al. 2006), AUDIT: Alcohol Use Disorders Identification Test (Frank et al. 2008), MDQ: Mood Disorders Questionnaire (Hirschfeld 2000), DAST: Drug Abuse Screening Test (Skinner 1982).

X. FUTURE DIRECTIONS

Collaborative Care Models represent a compelling solution for multiple challenges faced by healthcare systems seeking to integrate behavioral health with primary care services. Robust implementations have consistently demonstrated the capacity to achieve the "Triple Aim" of systematic reform efforts (W. J. Katon and Unützer 2013)-- improving the experience of care, improving the health of populations, and reducing per capita costs of healthcare. While much has been achieved, further efforts are necessary to realize the promise of behavioral health integration. The following recommendations highlight areas in need of additional research and development. **Table 6** lists the summary recommendations as noted in **bold** in the text.

A. Use of consistent language and terminology when referring to integrated care implementations

At present, there is marked variability in regards to the terminology of "integrated care". Terms like "Collaborative Care", "coordinated care", and "co-located care" are often used interchangeably, leading to challenges in defining a common core standard of integrated care models and comparison of implementations. The skillsets and training backgrounds of personnel involved in "integrated care" also vary highly, yet many persons with widely varying backgrounds may be referred to as the "mental health specialist", "behavioral health practitioner" or "care manager" (CM) – in addition to a number of other terms.

To be sure, the Collaborative Care Model requires a multidisciplinary team for implementation and is adaptable in a variety of settings with different degrees of workforce resources. Utilizing more standardized terms can help systems to advance their "integrated care" programs toward more evidence-based approaches through clearer understanding of the meaning of "Collaborative Care".

Recommendations:

Develop a standardized glossary of evidence-based "integrated care" terminology in partnership with other essential allied organizations.

B. Ongoing emphasis on psychiatric physician workforce training and development

The American Psychiatric Association has enumerated several core competencies needed by psychiatrists who participate in integrated care models (Summers et al. 2014):

1. Familiarity with models of healthcare payment
2. Knowledge of EMRs and registries
3. Operational familiarity with quality and performance metrics
4. Ability to participate in team-based approaches to care under physician oversight

5. Skill in providing caseload supervision and decision support to CMs or ongoing evaluation and follow-up visits with a psychiatrist
6. Knowledge of principles of population management
7. Ability to communicate with professionals in a variety of medical, social services, and administrative disciplines

Integrated behavioral health is growing rapidly, and there are limited training resources on this topic. The University of Washington's AIMS Center (http://aims.uw.edu/resource-library/psychiatry-resident-training-collaborative-care, 2015a) has developed a clinical rotation curriculum for psychiatry residents that introduces a senior resident to the role of the psychiatric consultant in a Collaborative Care team. Fellowship opportunities and post-graduate training experiences are now also offered for psychiatrists interested in furthering their skillset in Collaborative Care at the AIMS Center as well. The Collaborative Care faculty psychiatrist provides weekly caseload supervision and individual case reviews of four to six patients weekly. Residents participate in interdisciplinary care team meetings. Content of the teaching includes introduction to the theory and practice of Collaborative Care teams, case finding, differential diagnosis, case formulation, treating to target, team building, workflows, and quality improvement. A recently released report from the APA Council on Medical Education and Lifelong Learning details training requirements and current experiences linked to Accreditation Council for Graduate Medical Education milestones competencies for Collaborative Care Models (Summers et al. 2014).

There are also effective modules for training psychiatrists transitioning into integrated behavioral care roles in the principles and practice of Collaborative Care. For example, the AIMS Center (UW AIMS Center 2015) and the Center for Integrated Health Solutions, supported by the Substance Abuse and Mental Health Services Administration (SAMHSA), have structured training programs psychiatrists can take advantage of to prepare for work in Collaborative Care. The AIMS Center/SAMHSA's program (Ratzliff et al. 2012) has modules that include building an integrated care team, principles of psychiatric consulting in primary care, behavioral interventions and referrals in primary care, medical patients with psychiatric illness, the evidence base for Collaborative Care, roles for a psychiatrist in team-based care, and making the case for integrated behavioral health in primary care. The APA offers courses in Collaborative Care at annual scientific meetings coupled with in-depth reading materials (Raney 2015b). In addition, the APA will soon have available online training modules available for Continuing Medical Education (CME) credit.

Recommendations

Further expand training opportunities within graduate medical education on evidence-based models of integrated care in collaboration with the American Board of Psychiatry and Neurology (ABPN).

Expand CME opportunities for physicians, especially online courses paired with CME credit.

Incentivize ongoing training and standardization through a professional certification program.

C. System-wide implementation support with focus on accountability, QI, and the use of information technology

Review of existing large-scale Collaborative Care demonstrations reveals several consistent types of resources necessary for quality implementations. These include the need for ongoing training of healthcare team members to provide evidence-based care (EBC); consistent use of disease registries to allow for population-focused team efforts, individual team-member accountability and patient-level follow-up; and standardized treatment manuals to facilitate stepped-care and EBC. Furthermore, whole-team accountability and QI can be operationalized on the frame of these core components, which guards against inevitable programmatic drift without a structured measurement system.

Measurement of individual patient health outcomes via a registry is an essential tool to achieve successful outcomes and is often one of the last components to be implemented within "integrated care" models, if it is included at all. Because healthcare information technology is still relatively nascent, current registries often exist in parallel to EMR systems, creating cumbersome duplicative workflows and reporting mechanisms for CMs, physicians, and other team members. Consequently, this is a rate-limiting step to full-scale evidence-based Collaborative Care implementation.

Once registry functionality is firmly embedded, Collaborative Care teams can more accurately measure their outcomes, clinical implementations can be seen in aggregate, and effective performance measures can be established which drive improvements in patient health and program efficiency.

Recommendations

Develop standard minimum functional criteria for disease registries and information technology in Collaborative Care.

Advocate for the inclusion of these minimal criteria in existing EMR platforms or at the level of health information exchanges.

Develop common team-based performance benchmarks for use in Collaborative Care implementation.

Design a "road-map" to Collaborative Care implementation to assist systems invested in evidence-based integrated care delivery.

D. Standardized and coordinated training for all healthcare personnel involved in Collaborative Care Model implementation, including primary care and care management associations

In-vivo implementations of Collaborative Care require steadfast attention to workforce training for all team-based personnel. Because there is considerable regional diversity in background and qualifications for Collaborative Care healthcare providers and CMs, a clear training curriculum that expands upon the roles of the primary care physician as well as the CM is necessary and should align with existing training programs available to integrated care psychiatrists.

Recommendations

Partner with allied behavioral health organizations (e.g., psychology, social work, advance practice nursing, professional counselors), care management, and primary care (e.g., American Academy of Family Physicians, American College of Physicians, American Academy of Pediatrics) to develop interdisciplinary training programs focusing on the respective roles within the Collaborative Care Model.

Partner with allied organizations responsible for the training of future behavioral health, care management, and primary care practitioners to develop opportunities to formally incorporate Collaborative Care earlier in the professional curriculum.

E. Development of standardized measures to assess process outcomes related to essential core elements of Collaborative Care

A core feature of accountability and QI is the capacity to measure processes of care. When clinical outcomes are sub-par, this allows for identification and correction of possible sources of under-implementation. Given the definable essential elements of Collaborative Care, process measures may be derived that approximate these elements and guide more robust implementation.

Recommendations

Support the development of process measures that align with the four essential elements of Collaborative Care.

Coordinate with national and regional entities, including payer and provider stakeholders, to disseminate a common set of process measures for Collaborative Care.

F. Support for testing and refining definitions and implementations of essential core elements through ongoing process improvement

The essential elements of Collaborative Care require ongoing testing, validation and refinement. Additionally, they should be associated with individual clinical outcomes and system-wide outcomes, costs of care, and satisfaction in care delivery. It may be arbitrary to segregate each of the elements, but attention to them as independent entities may lead to increased awareness and fidelity to research-level implementations and outcomes.

Recommendations

The APA and APM should work in a coordinated fashion to support ongoing scientific research into the effectiveness of each of the essential elements of Collaborative Care in aggregate and individually, exploring opportunities to add or subtract essential elements as necessary to streamline implementation, effectiveness, and efficiency of Collaborative Care Models.

The APA and APM should support further implementation research that runs in parallel to the effectiveness of the core elements.

G. Advocacy for payment mechanisms that align with the essential elements of effective integrated care and are tied to performance-based incentives

Payment reform has proven to be a significant barrier to wider implementation of Collaborative Care Models. Significant task-shifting and time commitments are required for team-members, all of which require practitioners to work outside of their typical reimbursable scope of duties. As such, healthcare providers are at risk for not engaging in Collaborative Care Models unless reimbursement strategies are in place. In-vivo demonstrations in this report illustrate the breadth of payer systems willing to invest in the Collaborative Care Model provided the implementation is true to the essential core elements of Collaborative Care.

Systems working within full-scale Collaborative Care offer a realistic option to operationalize clinical pay-for-performance incentives for healthcare providers that have been proven to improve efficiency in care. Consequently, Collaborative Care is an enticing platform of services delivery for "integrated care" models from the payer perspective, but the myriad of terms and non-evidence-based implementations serves to confuse payer stakeholders and threatens to halt momentum for integration of behavioral health and primary care.

Recommendations

The APA and APM should create opportunities to educate public and private payer stakeholders on the essential elements of Collaborative Care Models.

The APA and APM should develop resources for members to educate local and state payers of health services on essential elements of Collaborative Care Models.

The APA and APM should support efforts to continue to research the cost-savings and added value of Collaborative Care Model implementation in real-world settings.

H. Advocacy for state and federal-level policy favoring implementation of evidence-based integrated care

A significant portion of mental health services are provided through state-level Medicaid programs which have yet to consistently recognize or implement through payment mechanisms the substantial evidence-base for Collaborative Care programs. State innovation is often driven by federal incentive programs that offset the financial risk for program start-up, workforce training and investment in overhead such as information technology supports. Public and private payer entities rarely are recognized or rewarded for their contributions to innovation in payment.

Recommendations

Develop advocacy platforms directed at state and federal agencies that foster the incorporation of Collaborative Care Models into the existing menu of reimbursable services.

Partner with allied medical and non-medical stakeholders in advocacy measures calling on funders to recognize, through adoption of alternative payment mechanisms, the potential value of Collaborative Care Models in healthcare reform efforts.

Develop recognition programs for stakeholders investing in Collaborative Care Models to foster competition and positively reward innovation.

I. Partnering with medical groups and organizations to increase healthcare providers' awareness of Collaborative Care.

Medical groups representing primary and specialty care are logical partners in educating healthcare providers about the evidence base that supports the advantages of Collaborative Care. Penetration and acceptance of Collaborative Care can be facilitated by awareness of the Triple Aim benefits of Collaborative Care and advantages for improving access and outcomes among medical-surgical populations that can benefit from the model. Residency training programs across a spectrum of physician and other provider specialties could benefit from exposure to Collaborative Care Models during required psychiatry or mental health rotations or content.

Recommendations

Partner with allied medical stakeholders in increasing healthcare provider awareness of Collaborative Care Models and the evidence that supports their outcomes.

Consult with medical and other healthcare professional organizations regarding inclusion of Collaborative Care training during required psychiatry or other mental health rotations or content.

J. Leveraging of technology to improve Collaborative Care outcomes.

One of the challenges of dissemination of Collaborative Care is that many geographic areas and many smaller primary care clinics do not have or do not have access to local mental health providers who can be on-site, even part time. Telemedicine-based Collaborative Care virtually co-locates and integrates mental health providers into primary care settings. Virtual care offers the possibility of relieving mismatches in mental health care needs and available resources. There have been few comparisons of outcomes of patients assigned to practice-based and telemedicine-based Collaborative Care, but early evidence is that outcomes are as good or better (J. C. Fortney et al. 2013; Hilty et al. 2015). A significant barrier remains securing a payment model in the fee-for-service environment that facilitates the non-patient contact elements of Collaborative Care, such as registry management and case supervision.

Recommendations

Advocate for outcomes research related to elements predictive of optimal implementation of telemedicine-based Collaborative Care.

Include virtual clinical models when advocating for payment models that align with the core elements of Collaborative Care.

Table 6: List of Workgroup Recommendations, Future Directions

Education and Training
Develop a standardized glossary of evidence-based "integrated care" terminology in partnership with other essential allied organizations.
Further expand training opportunities within graduate medical education on evidence-based models of integrated care in collaboration with the ABPN.
Expand CME opportunities for physicians, especially online courses paired with CME credit.
Partner with allied behavioral health organizations (e.g., psychology, social work, advance practice nursing, professional counselors), care management, and primary care (e.g., American Academy of Family Physicians, American College of Physicians, American Academy of Pediatrics) to develop within-field continuing education training programs focusing on the respective roles within the Collaborative Care Model.
Partner with allied organizations responsible for the training of future behavioral health, care management, and primary care practitioners to develop opportunities to formally incorporate Collaborative Care earlier in the professional curriculum.

Partner with allied medical stakeholders in increasing healthcare provider awareness of Collaborative Care models and the evidence that supports their outcomes.

Incentivize ongoing training and standardization through a professional certification program.

Implementation Support

Develop standard minimum functional criteria for disease registries and information technology in Collaborative Care.

Advocate for the inclusion of these minimal criteria in existing EMR platforms or at the level of health information exchanges.

Develop common team-based performance benchmarks for use in Collaborative Care implementation.

Design a "road-map" to Collaborative Care implementation to assist systems invested in evidence-based integrated care delivery.

Support the development of process measures that align with the four essential elements of Collaborative Care.

Coordinate with national and regional entities, including payer and provider stakeholders, to disseminate a common set of process measures for Collaborative Care.

Advocate for outcomes research related to elements predictive of optimal implementation of telemedicine-based Collaborative Care.

The APA and APM should support for further implementation research that runs in parallel to the effectiveness of the core elements.

The APA and APM should work in a coordinated fashion to support ongoing scientific research into the effectiveness of each of the essential elements of Collaborative Care in aggregate and individually, exploring opportunities to add, subtract, or redefine the essential elements as necessary to streamline implementation, effectiveness, and efficiency of Collaborative Care Models.

Payment Reform

The APA and APM should create opportunities to educate public and private payer stakeholders on the essential elements of Collaborative Care Models.

The APA and APM should develop resources for members to educate local and state payers of health services on essential elements of Collaborative Care Models.

The APA and APM should support efforts to continue to research the cost-savings and added value of Collaborative Care Model implementation in real-world settings.

Develop advocacy platforms directed at state and federal agencies that foster the incorporation of Collaborative Care Models into the existing menu of reimbursable services.

Partner with allied medical and non-medical stakeholders in advocacy measures calling on funders to recognize, through adoption of alternative payment mechanisms, the potential value of Collaborative Care Models in healthcare reform efforts.

Develop recognition programs for payers investing in Collaborative Care Models to foster competition and positively reward innovation.

Include virtual clinical models when advocating for payment models that align with the core elements of Collaborative Care.

*The above recommendations are divided into three categories: **education and training**, **implementation support**, and **payment reform**.

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