Social Innovation Fund

RFI

TITLE: The John A. Hartford Foundation
SOLE INTERMEDIARY: The John A. Hartford Foundation (JAHF)

ISSUE-BASED SIF (HEALTHY FUTURES) to disseminate the IMPACT model of depression treatment through community health clinics as subgrantees to serve low-income, rural communities in Wyoming, Washington, Alaska, Montana, and Idaho (WWAMI)

KEY MEASURABLE OUTCOMES: 1) increased access to effective depression treatment for low-income patients in rural areas, 2) decreased depression and improved social and occupational functioning among these patients, 3) improved economic well-being of individuals and families served by subgrantees

TECHNICAL ASSISTANCE AND EVALUATION PARTNER: University of Washington AIMS Center

SOURCES OF SUBGRANTEE MATCH: Clinical revenues, philanthropic organizations, and/or public health funders

2012 PRIORITY: This project will improve the economic well-being of individuals and families served by subgrantees through 1) reduction of costs related to health care expenditures, 2) improvements in employment and related income, and 3) reduction in costs related to caregiving needs for patients with depression that are often borne by family members.

PROJECT OVERVIEW: Depression is one of the leading causes of disability worldwide, the number two cause of disability in the US (after heart disease) and is associated with poor health and economic outcomes, including higher healthcare costs, reduced productivity, and lower incomes. The WWAMI region is a philanthropically underserved rural area with little access to effective depression care. This project will support 5-8 nonprofit community primary care clinics in the WWAMI region over 3 years to implement evidence-based IMPACT depression care. In this program, primary care providers are supported by trained mental health specialists to care for the large number of patients they see with undiagnosed, untreated or ineffectively treated depression. Effective treatment using IMPACT improves depression symptoms, social and work-related functioning, and economic outcomes. Subgrantees will each identify and treat at least 600-1,000 adults over 3 years. We will conduct independent assessments of patients' depression, functional, and economic outcomes. The effects of improved treatment will benefit individual patients, their family and caregivers, the community-based health care providers developing new skills to more effectively serve a high-need population, and community organizations who will partner with participating primary care clinics to provide meaningful ways of engaging individuals in paid and nonpaid activities as they recover from depression. JAHF and UW will issue a joint solicitation for subgrantees that will be advertised to clinics in the WWAMI region. Subgrantees must be located in counties designated as medically underserved and/or health professional shortage areas, serve at least 1,500 unique patients each year, and have a patient population that is at least 50% uninsured or covered by Medicaid. Clinics must agree to participate in training, technical assistance, evaluation, financial reporting, and overall progress monitoring. Subgrantees will be selected based on criteria that include patient demographics, strength of plan for recruiting mental health providers, experience with other quality improvement initiatives, strength of plan for matching funds, and strength of plan for spread during program implementation and sustainability after grant funding ends. Subgrantees that successfully implement the program in Year 1 will be eligible to expand in Year 2 to additional patients and/or delivery sites.

TRACK RECORD: JAHF is an experienced grantmaker with over 80 years of philanthropic experience, including funding the original research trial that established the effectiveness IMPACT and the subsequent grant to disseminate the program to over 500 clinics. The AIMS Center Director was the lead researcher on the IMPACT research trial and has directed dissemination of the program for the past 8 years. In addition, he is an internationally recognized health services researcher who will lead evaluation of the proposed project.

ORGANIZATIONAL CAPACITY: JAHF has a staff of 16 professional and support personnel. It has assets of over $480 million and an annual grants budget between $18 million and $20 million.

a. GOALS AND OBJECTIVES

The proposed project is an ISSUE-BASED social innovation that is focused on HEALTHY FUTURES. Effective care for depression can dramatically improve health outcomes, reduce unnecessary health care expenditures, and improve the productivity and economic well-being of populations through improved workforce participation and related earnings. The proposed project will help community-based primary care clinics treating underserved populations with high rates of depression in the WWAMI region (Washington, Wyoming, Alaska, Montana, Idaho) implement effective, evidence-based depression care based on the highly successful IMPACT model, which is described in detail in the Theory of Change section in this application. JAHF supports the dissemination of IMPACT for adults of all ages with the understanding that this will reach older adults who might not otherwise have access to this improved care.

SOCIAL INNOVATION FUND STRUCTURE

WWAMI is a largely rural and underserved area that comprises 27% of the land mass of the United States but contains only 3.3% of the population. On average, 43% of WWAMI residents live in non-metropolitan areas (range is 70% in Wyoming to 12% in Washington). While the overall poverty rate for the WWAMI region was 12% in 2011 (range is 15% in Montana to 9% in Alaska), in each of these states the proportion of residents living in poverty is significantly higher in rural counties (range is 31% in Alaska and Montana to 19% in Wyoming). In the WWAMI region, Medicaid participation ranges from 13% of the state's population in Montana to 18% in Washington and the prevalence of uninsured residents is similar across all 5 WWAMI states at about 16% of the population [1]. In Washington, Idaho and Wyoming the largest ethnic minority group is Latinos who comprise about 10% of the population statewide. However, the proportion of Latinos is much higher in rural areas of these states. Latinos comprise as much as 17% of the population in rural Wyoming counties, 41% in Idaho and 59% in Washington. The largest ethnic minority group in Alaska is Native Alaskans who comprise 15% of the overall population but up to 95% of the population in rural counties. The largest ethnic minority group in Montana is Native Americans who comprise 6% of the overall state population but up to 65% of the population in rural counties. In all of these states the proportion of residents living in poverty, the proportion of older adults and the proportion of ethnic minorities is greatest in non-metropolitan areas [2].

Areas and populations are defined as MEDICALLY UNDERSERVED by the federal government's Health Resources and Services Administration (HRSA) based on the ratio of primary care physicians per 1,000 population, the infant mortality rate, the percent of the population with incomes below the poverty line, and the percent of the population age 65 and over. HRSA defines HEALTH PROFESSIONAL SHORTAGE AREAS as those with "shortages of primary medical care, dental or mental health providers and may be urban or rural areas, population groups, or medical or other public facilities." With only a few exceptions representing the largest metropolitan areas, the vast majority of the WWAMI region is identified by HRSA as medically underserved and/or a health professional shortage area [3].

Subgrantees will be rural community health clinics in the WWAMI region serving low-income, uninsured and Medicaid patients. They will be required to demonstrate that at least 50% of their patients are uninsured or receive Medicaid, a program that is only offered to individuals who are recognized by the government as low-income. Each subgrantee will spend the first 3 months of their award preparing to implement the Collaborative Care innovation. This includes hiring care managers and a psychiatric consultant, engaging in pre-implementation planning and technical assistance and participating in Collaborative Care training. Each subgrantee will launch the program with 2.0 FTE care manager time (supported by 0.2 FTE consulting psychiatrist) which can be distributed across more than 2 staff members and more than 2 clinical delivery sites to insure the flexibility necessary to make the program practical and sustainable in each location. Not all clinical locations, especially those serving remote areas, will have a large enough patient population to warrant a full-time care manager. We expect each subgrantee to have at least 50 patients enrolled in the program by the end of Year 1. During the first six months of Year 2, each subgrantee will continue the program with 2.0 FTE care managers. At the midpoint of Year 2, subgrantee organizations will have the opportunity to add up to 2.0 FTE additional care manager and 0.2 FTE additional consulting psychiatrist time (for a total of up to 4.0 FTE care manager and 0.4 FTE consulting psychiatrist effort). We expect subgrantees to treat 280-420 patients in Year 2, depending on care manager FTE, and 280 (2.0 FTE) to 600 (4.0 FTE) patients in Year 3. Each subgrantee is expected to treat at least 600-1,000 patients over the total duration of the program.

The University of Washington (UW) is the only medical school serving the WWAMI area and has a 40 year history of supporting quality improvement and healthcare workforce development programs in this vast region of the United States. The AIMS Center (Advancing Integrated Mental Health Solutions), as part of the Department of Psychiatry & Behavioral Sciences, has outreach experience in the WWAMI region and access to University expertise as needed.

This SIF will produce these key measurable outcomes: 1) increased access to evidence-based depression treatment for economically disadvantaged patients in rural areas, 2) decreased depression and improved social and occupational functioning among these patients, 3) improved economic well-being of individuals and families served by subgrantees.

THEORY OF CHANGE

Mental health problems, such as depression, are among the most common and disabling health conditions worldwide. They often co-occur with chronic medical diseases and can substantially worsen associated health outcomes [4]. Rates of depression have been estimated to be 20% in Medicaid populations [5]. The World Health Organization ranks Major Depression fourth among the leading causes of disease burden worldwide and second in the United States. When depression is not effectively treated, it can impair self-care and participation in needed medical care, increase mortality, substantially increase overall health care costs, and decrease work productivity and economic well being.

Primary care practices are the “de facto” location of care for most adults in the US with common mental disorders such depression [6, 7]. Most patients prefer an integrated approach in which primary care and mental health providers work together to address medical and mental health needs in the primary care setting. Older adults, in particular, prefer treatment of mental disorders in primary care and when they are referred to mental health specialists no more than half follow through with such a referral [8]. Primary care providers, particularly those practicing in rural or otherwise underserved areas, report serious limitations in the support available from mental health specialists [9].

Although effective pharmacological and non-pharmacological treatments exist for mental disorders such as depression, only around 40% of Americans with such problems receive treatment, and only around one-third of those (about one in seven of all those with depression) receive treatment that could be characterized as minimally adequate based on existing practice guidelines [10, 11]. Although almost 30 million Americans receive prescriptions for antidepressants each year, many of these patients do not receive an adequate trial of treatment. These problems occur because, in the typical primary care setting, the onus of responsibility for alerting the PCP that a treatment is not working lies with the patient. Patients who are depressed are often unable to advocate for themselves in this way because the symptoms of depression interfere with their ability to do so. PCPs often do not have the resources and the support to actively follow-up on patients for whom they have started treatment and miss important opportunities to adjust medications or other treatments if patients don’t improve as expected. As a result, as few as 20% of patients started on antidepressant medications in usual primary care show substantial clinical improvement [12, 13]. Similarly, patients referred to psychotherapy often receive inadequate trials of such treatments and/or ineffective forms of psychotherapy so that treatment response for this type of treatment is also as low as 20% in usual specialty mental health care [14].

Efforts to improve the treatment of common mental disorders in primary care initially focused on screening, education of primary care providers, development of treatment guidelines, and referral to mental health specialty care. These approaches, alone and in combination, have not been found to improve patient outcomes [15]. Another approach to improve care for patients with mental health problems is to co-locate mental health specialists within primary care clinics. Having a mental health professional available to see patients in primary care can improve access to mental health services, but co-location has not been found to improve patient outcomes at a population level [16].

Over the past 15 years, more than 60 randomized controlled research trials have established a robust evidence base for an approach called “Collaborative Care” [17]. In such programs, treatment is provided by a primary care-based team, including: 1) the primary care provider (PCP), 2) a care manager (typically a nurse, clinical social worker, counselor or psychologist) who supports treatment initiated by the PCP, provides evidence-based, brief, structured psychotherapy and referrals to community-based organizations that may help provide meaningful paid and unpaid activities for adults recovering from depression, and 3) a psychiatric consultant, who advises the primary care team regarding patients who are not improving.

Care managers work closely with PCPs who retain primary responsibility for patients' treatment. Collaborative Care programs have successfully used personnel with various types of professional backgrounds as care managers, including licensed clinical social workers, licensed counselors (i.e., master's level therapists), nurses, and medical assistants under the supervision of a nurse. Care manager responsibilities include: 1) screening for depression, 2) patient engagement and education, 3) pro-active follow-up focusing on treatment adherence, treatment effectiveness, and treatment side effects, 4) brief, structured counseling using established evidence-based techniques such as Motivational Interviewing, Behavioral Activation, and Problem-Solving Treatment in Primary Care, 5) regular (usually weekly) review of all patients who are not improving as expected with a psychiatric consultant, 6) facilitation of communication between the PCP and the psychiatric consultant, 7) facilitation of referrals to and coordination with community-based agencies, outside mental health or medical specialty care, substance abuse services, and social services.

Psychiatric consultants provide treatment recommendations to the primary care team, focusing on development of treatment plans for new patients and changes to treatment plans for patients who are not improving after 10-12 weeks with the current treatment. These consultations typically occur once per week over the telephone and are facilitated by an online patient registry that allows the care manager and consulting psychiatrist to review treatment outcomes for all patients being treated by that care manager in real time. Telephonic consultation has been used successfully in most Collaborative Care programs to date, including programs in "frontier" areas (e.g. along the Rio Grande river in Texas) where there are no psychiatrists for hundreds of miles. The Collaborative Care model is especially well suited to rural areas because it allows these areas to have access to the expertise of a psychiatric specialist who can help direct care, even if no such specialists are available locally.

Typical treatment duration is six months, with some patients needing as little as 3 months and some needing more than 12 months, depending on how many changes in treatment are needed to achieve sufficient improvement. A typical full-time care manager carries an active caseload of 50-100 patients. Over the course of a year a full-time (1.0 FTE) care manager working in a community health clinic will treat about 150 patients. One of the key components that sets Collaborative Care apart from usual depression care is that patients are not allowed to languish indefinitely on a treatment that is ineffective or only partially effective. Treatments are actively changed every 10-12 weeks if the patient's symptoms are not at least 50% reduced since the start of care.

Collaborative Care programs follow the principles of effective care as outlined by Wagner and colleagues, in their widely accepted Chronic Care Model, including measurement-based care [18] and stepped care [19]. MEASUREMENT-BASED CARE: Every time a patient visits a primary care clinic someone takes their blood pressure. Increasingly, primary care and mental health providers are using this same principle to track outcomes of treatments for depression and other common mental health conditions. Once a patient has been identified as having depression and has started treatment for that condition, it's very important to re-measure the symptoms at each contact so that the treating provider has specific information about whether or not symptoms are improving and which symptoms are or are not improving. STEPPED CARE: Adjusting the treatment plan based on whether or not symptoms are improving is one of the most important components of effective Collaborative Care programs. This approach is called "stepped care" because the treating clinicians intensify the treatment step by step until patients reach a clinically significant improvement in their symptoms. Frequent measurement of symptoms is critically important in making decisions about when and how to adjust treatment. Initial adjustments can be made by the primary care treatment team, with input from the psychiatric consultant. Patients who continue not to respond to treatment, or have an acute crisis, can be referred to mental health specialty care. Such systematic treatment to target can overcome the clinical inertia that is often responsible for ineffective treatment of depression in primary care [20].

Trials of Collaborative Care have been conducted in diverse health care settings, including network and staff-model systems, and private and public providers; with different financing mechanisms, including fee-for-service and capitation; different practice sizes; and different patient populations, including both insured and uninsured/safety-net populations. Several studies have demonstrated that Collaborative Care programs are highly effective in safety net patients and patients from ethnic minority groups [21-26] and can, in fact, reduce health disparities observed in such underserved populations.

The largest trial of Collaborative Care to date, the IMPACT study (http://impact-uw.org) was funded by the John A. Hartford Foundation and the California Health Care Foundation from 1999 – 2003. The study enrolled 1,801 older adults

(age 60+) with depression from 18 primary care clinics in five US states. In addition to having depression, IMPACT (Improving Mood: Providing Access to Collaborative Treatment) patients also averaged 4 chronic medical disorders. IMPACT participants were randomly assigned to a Collaborative Care program or to usual care.

Patients receiving IMPACT Collaborative Care were MORE THAN TWICE AS LIKELY as those in usual care to experience a substantial improvement in their depression over 12 months [27]. They also had less physical pain, better social and physical functioning, and better overall quality of life than patients in care as usual. IMPACT was strongly endorsed by patients and primary care providers [28]. The IMPACT program was significantly more effective than usual care for all patients, including ethnic minorities [21] and low income patients [29]. More recent studies have demonstrated the effectiveness of the IMPACT program for adults of all ages [30], depressed cancer patients [31] and depressed diabetics [32], including low-income, monolingual Spanish-speaking diabetics [33].

The Collaborative Care approach tested in IMPACT and similar studies has been recognized as an evidence-based practice by the federal government's Substance Abuse and Mental Health Services Administration (SAMHSA) and recommended as a "best practice" by the Surgeon General's Report on Mental Health, the President's New Freedom Commission on Mental Health, and a number of national organizations including the National Business Group on Health. In a recent evidence-based practice report by AHRQ reviewing existing literature on approaches to Integration of Mental Health/Substance Abuse and Primary Care, the IMPACT program was profiled as "the study with the strongest results" [34].

Several large health care organizations have undertaken implementations of evidence-based Collaborative Care programs such as IMPACT. These include national and regional health plans, including Kaiser Permanente [30] and Intermountain Health. With training and technical assistance from the AIMS Center, the DIAMOND program has implemented Collaborative Care in partnership with 8 commercial health plans, 25 medical groups, and over 80 primary care clinics across the state of Minnesota [35]. However, evidence-based programs such as IMPACT are NOT YET AVAILABLE to the vast majority of primary care patients treated in rural, underserved communities that predominate in the WWAMI region. The one notable exception to this is in the State of Washington, which has the Mental Health Integration Program (MHIP; http://integratedcare-nw.org), sponsored by the Community Health Plan of Washington and Seattle-King County Public Health. This program has implemented Collaborative Care across more than 100 Community Health Centers for safety net patients with mental health needs. Yet even this model program leaves many rural, low-income patients without access to Collaborative Care. In King County, WA (metropolitan Seattle) the program serves uninsured and otherwise underserved clients of all ages but in rural areas of Washington, access to the program is limited to patients receiving one specific type of welfare benefit for adults with short term disability related to medical or mental health problems. Other safety net populations, including the uninsured and Medicaid recipients, do not have access to these Collaborative Care services.

While large health care organizations such as Kaiser Permanente, the VA (Veteran's Administration), and the DOD (Department of Defense) have been able to implement evidence-based Collaborative Care programs, access to such services in rural areas is still extremely limited. Barriers to widespread implementation of these programs include the lack of a workforce trained in evidence-based Collaborative Care programs, the stigma associated with depression and mental health treatment that is still commonly found, especially in rural areas, and financing barriers under current fee-for-service payment mechanisms in which providers are compensated for quantity of care provided rather than quality of care achieved.

The proposed project will address all of these barriers and will help community health centers caring for underserved populations in the WWAMI region implement effective depression care programs based on the evidence-based and highly successful IMPACT model.

IDENTIFICATION OF PRIORITY ISSUES

Economic benefits from improving care for depression fall into three categories: 1) reduction of costs related to unnecessary health care expenditures, 2) improvements in employment and related income, and 3) reduction in indirect

costs related to caregiving needs for patients with depression that are often borne by family members and others. Depression has been shown to increase overall health care costs by 50-100% [36-38]. Several studies have demonstrated that Collaborative Care for depression is more cost-effective than usual care and a recent review concluded that Collaborative Care programs generate net social benefits at conventional valuations of quality-adjusted life years [39, 40].

Several economic evaluations have demonstrated that Collaborative Care is associated with long-term cost savings. Cost analyses from the IMPACT study found that patients in the intervention arm had substantially lower overall health care costs than those in usual care [41]. An initial investment in Collaborative Care that cost $522 during Year 1 resulted in net cost savings per participant of $3,363 over Years 1-4. This corresponds to a return on investment (ROI) of $6.50 per dollar spent, with average annual savings of $841 per participant. The IMPACT Collaborative Care intervention yielded net savings in every category of health care costs examined, including pharmacy, inpatient and outpatient medical, and mental health specialty care [41]. Similar cost savings have been identified in Collaborative Care studies that included patients with depression and diabetes [32] and patients with severe anxiety [42].

Depression substantially reduces employment, lowers the chance that individuals who are unemployed will reenter the workforce, and is responsible for substantial reductions in productivity (both in terms of absenteeism and presenteeism) among those who are in the workforce [43, 44]. Adults with depression have substantially lower personal income than those without depression [45]. Individuals who retire early due to depression face long-term financial disadvantages compared to people who are treated and able to remain employed [46]. This dramatic effect of depression from a human capital perspective creates a powerful case for improving depression care [43]. Fortunately, research has shown that the systematic implementation of Collaborative Care programs for depression in primary care can reduce many of these negative economic effects of depression. A large study of Collaborative Care for depression reported improved employment rates and personal income in patients who received Collaborative Care compared to those in a usual care control group [47, 48]. A similar study showed that systematic improvement of depression treatment improved both clinical and workplace outcomes. The authors concluded that many employers would experience a positive return on investment from implementing such programs [49].

We predict that in communities effectively implementing the IMPACT program, individuals will realize economic benefits through reduced health care costs, reduced costs related to caretaking for a depressed individual, and improved work related productivity and income. We will conduct independent assessments of participants to substantiate these effects.

In addition to generating these economic benefits, the initiative is designed to increase the weight of public and private resources mobilized to serve individuals in significantly philanthropically underserved communities, as defined by the Corporation, in the WWAMI states. The initiative also offers the added opportunity to improve the geographic diversification of the SIF portfolio by serving people in four states which have yet to announce subgrantees, according to the Corporation: namely, Alaska, Idaho, Montana, and Wyoming.

b. DESCRIPTION OF ACTIVITIES

The University of Washington (UW) is a premier research and educational institution, with the only medical school serving the vast WWAMI region. Its core values - integrity, diversity, excellence, collaboration, innovation, and respect - are evident in every aspect of this partnership. The UW School of Medicine’s Department of Psychiatry & Behavioral Sciences supports the training of health professionals throughout the five state WWAMI region. A primary area of interest for the Department is the development and evaluation of programs in which mental health professionals collaborate effectively with primary care and other health care providers to care for children, adults, and older adults with common mental disorders. One of the primary reasons for this is that the vast majority of the WWAMI region has significant shortages of mental health providers, especially psychiatrists. Collaborative Care programs are especially effective at

leveraging this limited resource in an efficient and effective way to affect quality of care for the largest possible number of patients.

The AIMS Center is an integral part of the Department of Psychiatry & Behavioral Sciences and is a leading center of research, training, and implementation support for integrated Collaborative Care programs such as IMPACT. Dr. Jürgen Unützer directs the AIMS Center. From 1998 to 2003, he led the coordinating center for the IMPACT Study [13] and oversaw publication of the resulting research evidence which now amounts to more than 50 peer-reviewed publications. The AIMS Center has since participated in a number of other studies that have extended the evidence-base for the IMPACT model, including studies in urban and rural settings and in patients with depression and arthritis [50], cancer [31, 51], and heart disease [52].

Since 2003, the AIMS Center has trained over 5,000 people and assisted over 600 clinics in several countries with implementing IMPACT-like Collaborative Care programs, including highly effective programs in Texas, Minnesota, New York, California, Oregon, and Washington. The AIMS Academy, which is the training arm of the AIMS Center, supports a variety of programs tailored to each member of the Collaborative Care team, including primary care providers, care managers, psychiatric consultants and organizational leadership (e.g. clinic manager, medical director). This proposal provides a tremendous opportunity for workforce development programs in areas designated as health professional shortage areas (most of the WWAMI region).

SUBGRANTEE SELECTION

Faculty and staff from the AIMS Center will assist JAHF in development and implementation of a transparent, competitive subgrantee selection process. The AIMS Center has 8 years experience assisting over 600 clinics with implementation of evidence-based Collaborative Care programs. That experience has resulted in a thorough understanding of factors that facilitate and hinder effective implementation. Using that experience as a guide, UW will assist JAHF with 1) advertising the SIF opportunity to potentially eligible nonprofit primary care organizations throughout the WWAMI region, 2) reviewing subgrantee applications, and 3) selecting subgrantees for participation in the program.

The SIF opportunity will be a joint JAHF and AIMS Center solicitation that will be widely advertised to all of the community primary care clinics in the WWAMI region. This will be accomplished by distributing information about the program through a variety of channels, including the AIMS Center contact list (nearly 5,000 contacts), Northwest Regional Primary Care Association, the dozens of WWAMI Medical Education sites operated through the UW School of Medicine, and local/regional networks of community health clinics, like the Community Health Network of Washington. The solicitation for subgrantee applications will include: 1) eligibility requirements, 2) desired characteristics, 3) how to obtain and submit an application, 4) details about the application and selection process, 5) selection criteria that will be considered in reviewing applications, 4) requirements regarding participation in training, technical assistance, financial reporting, progress monitoring and evaluation activities.

A wide variety of organizations will be encouraged to apply to ensure a portfolio of high quality subgrantees. We expect a strong group of applicants based on the level of demand that the AIMS Center currently receives for training and technical assistance from similar clinical organizations. The primary barrier for most of these organizations, especially those serving low-income uninsured and Medicaid patients, is a lack of funds to support the start-up costs necessary to implement this kind of practice change. Nearly all of the successful implementations of Collaborative Care to date have been supported by start-up funds that allowed the clinics to prepare for and launch the Collaborative Care innovation before being required to fund the program independently. It is precisely these kinds of start-up costs, which are nearly impossible to squeeze out of the budget of a non-profit health clinic serving the under- and uninsured that prevent most of these clinics from being able to implement Collaborative Care.

ELIGIBILITY REQUIREMENTS: Subgrantees will be REQUIRED to be nonprofit community primary care organizations in rural counties designated as either medically underserved or health professional shortage areas serving at least 1,500 unique patients per year across all delivery sites. In the WWAMI region there are 83 federally qualified health centers (FQHC) with 514 delivery sites [53]. Subgrantees will not be required to be an FQHC but this information about FQHCs, a common type of primary care clinic serving low-income and uninsured patients, demonstrates that most community health clinics in the WWAMI region have multiple delivery sites. Subgrantees will be required to demonstrate

that at least 50% of their patient population is low-income uninsured or covered by Medicaid. Across the WWAMI region, 69% of FQHC patients meet this criterion [53].

REQUIREMENTS FOR PARTICIPATION IN PROGRAM ACTIVITIES: Clinics will be required to agree to participate in activities necessary for successful implementation and monitoring of the program. These include training, technical assistance regarding Collaborative Care, evaluation, financial reporting and overall progress monitoring. The requirements associated with each of these activities will be clearly stated in the solicitation for applications and successful applicants will be required to demonstrate the commitment of organizational leadership and the organizational capacity to participate in these activities. Training and technical assistance activities will include: 1) participation in pre-launch team building and implementation planning activities, 2) sending 5 staff (including the care manager, clinic manager, medical director, primary care provider and consulting psychiatrist) to a two-day training meeting in Seattle, WA, 3) using the online care management registry to track all patients enrolled in the program, and 4) participation in post-launch technical assistance with the AIMS Center. Clinics will be required to agree to participate in evaluation activities, including: 1) recruitment and consent of patients for data collection activities, 2) provision of data regarding match sources, and 3) provision of data regarding billing / reimbursement for Collaborative Care services. Oversight requirements from JAHF will include standardized quarterly financial reporting, quarterly progress reports, participation in JAHF/SIF communications efforts, and participation in annual site visits. Continued receipt of grant funds will be contingent upon adequate participation with all these requirements and this will be made clear to applicant organizations at every stage of the selection process.

DESIRED CHARACTERISTICS / SELECTION CRITERIA: Applicant organizations will also be required to describe the following characteristics in their application for funding. These characteristics are based on AIMS Center experience assisting a wide range of primary care organizations implementing Collaborative Care programs. The weight that will be given to each characteristic as part of the applicant review process is provided in parenthesis at the end of each description:

1) PATIENT DEMOGRAPHICS: clinics serving the neediest (e.g. lowest income, ethnic minority, non-English-speaking) patients will receive the highest scores in this category (10%);

2) PREVALENCE OF DEPRESSION: clinics that can demonstrate from medical record or screening data that they can identify substantial numbers of patients who have a need for depression care (e.g., at least 10 % of their patients have documented positive screens for depression or visit / claims diagnoses for depression) will receive higher scores in this category (10%);

3) CURRENT MENTAL HEALTH SERVICES: clinics without existing mental health services will be given higher scores in this category (5%);

4) RECRUITING MENTAL HEALTH PROVIDERS: clinics that can provide a convincing description of their experience and plan for recruiting care managers and a consulting psychiatrist, including strategies for overcoming workforce shortages, will receive higher scores in this category (15%);

5) OTHER QUALITY IMPROVEMENT INITIATIVES: clinics that can describe successful implementation and improved health outcomes related to other quality improvement initiatives for chronic illnesses, such as diabetes of heart disease, will receive higher scores in this category (15%);

6) IDENTIFICATION OF COMMUNITY RESOURCES AND PARTNERS: organizations that can describe existing or proposed collaboration with community resources and partners to identify patients who may need depression care and/or support patients in recovery from depression will receive higher scores in this category (5%);

7) ORGANIZATIONAL READINESS: clinics that can demonstrate the support and readiness of clinical and organizational leadership for practice change to improve depression care will receive higher scores in this category (10%);

8) ORGANIZATIONAL CHALLENGES AND STRENGTHS: clinics that are able to well articulate both their challenges and strengths as an organization related to implementing practice change and a well-constructed plan for addressing those challenges will receive higher scores in this category (10%);

9) PROPOSED MATCH SOURCES: clinics that are able to describe specific, realistic plans for matching funds, including demonstrated commitments from other eligible funders and/or billing data to support their plan for generating matching revenue will receive higher scores in this category (10%);

10) PLAN FOR SUSTAINABILITY AND SPREAD: clinics that are able to describe their plan for sustaining the program after the end of funding and, if applicable, spreading it to other clinical delivery locations within their organization will receive higher scores in this category (10%).

APPLICATION AND SELECTION PROCESS: Interested organizations will be required to submit a Letter of Intent that documents that they meet the minimum eligibility requirements for subgrantees. Eligible organizations will be invited to submit a full proposal. These proposals will be reviewed by a committee comprised of representatives from JAHF and the AIMS Center as well as three independent expert reviewers. The top applications will be selected for a telephone interview with the review committee. A final group of the most competitive applicants will be selected for in-person site visits. Potential subgrantees will be encouraged to invite stakeholders, including organizations offering matching funds and/or community organizations they plan to partner with regarding patient engagement and activation. Site visits will be conducted by a representative from JAHF and the AIMS Center before a final determination is made regarding selection of subgrantees.

JAHF and the AIMS Center will assist potential subgrantees with identifying match sources and developing match plans that are specific, detailed and realistic. JAHF will use their existing relationships with other philanthropic organizations that may be interested in supporting this work (e.g. the Rasmuson Foundation in Alaska) and their contacts through organizations like Grantmakers in Health to identify other potential sources of match funds in the WWAMI region and serve as a broker between these potential match sources and potential subgrantees. Similarly, the AIMS Center will use their existing relationships in the WWAMI region (e.g. state Medicaid directors, the Empire Foundation, the Alaska Mental Health Trust Authority, the WWAMI medical education network) to identify potential match sources for subgrantees. The AIMS Center will also provide technical assistance to potential subgrantees regarding strategies for optimizing billing and reimbursement strategies as a source for some or all of their match (depending on the clinic's payer mix and reimbursement rates).

The application and selection timeline is as follows: Advertisement of the SIF opportunity will be distributed by the end of Month 1. Potentially interested organizations will be required to submit the Letter of Intent by the end of Month 2. Applications will be due six weeks later, in the middle of Month 4. The initial review of applications will take place by the end of Month 4. Phone interviews and site visits will occur during Months 5 and 6 with final selection of grantees to occur by the end of Month 6. This is an aggressive but feasible timeline based on the organizational capacity and experience of both JAHF and the AIMS Center.

Using the selection criteria outlined above, we expect to select 5-8 subgrantee organizations to participate in the proposed project. We will attempt to select at least one organization from each of the 5 WWAMI states; however, the quality of the applicant organization and their readiness to participate in the proposal will be the primary selection criteria and it is possible that not all WWAMI states will have a subgrantee selected for participation.

TRAINING AND TECHNICAL ASSISTANCE: Using a Learning Collaborative approach based on the Institute for Healthcare Improvement (IHI) model, the AIMS Center will work with the subgrantees both individually and collectively. Dr. Unützer and other AIMS Center staff have extensive experience with such learning collaboratives and have participated as lead faculty in similar efforts supported by HRSA [54], the National Council of Community Behavioral Healthcare [55], and, most recently, the California Institute for Mental Health (CiMH). The AIMS Center will provide subgrantees with individual pre- and post-launch technical assistance tailored to identify their specific strengths and challenges regarding implementation of Collaborative Care. The AIMS Center will also convene the subgrantees several times over the course of the year, both by telephone and webinar, to provide opportunities for them to learn as a group from each other's experiences. The schedule of technical assistance activities will be as follows:

YEAR 1, MONTH 6 - Kick-off Webinar: All subgrantees will convene via webinar for a 3 hour kick-off meeting. The purpose of this meeting will be to: 1) outline the process of the learning collaborative, 2) provide an overview of

evidence-based Collaborative Care, and 3) teach participants how to use established Team Building Worksheets to develop a concrete, specific implementation plan tailored to fit their clinical setting.

YEAR 1, MONTH 7 – Individual Technical Assistance: UW will follow-up individually with each subgrantee by telephone to review their Team Building worksheets and help them make a specific, concrete and realistic Implementation Plan prior to the in-person training meeting.

YEAR 1, MONTH 8 – Learning Session #1: Subgrantees will convene in person for a 2.5 day training meeting led by the AIMS Center in Seattle, Washington to learn and practice the key components of the IMPACT Collaborative Care program. Each subgrantee will bring a team to this training meeting that includes at a minimum: 1 designated program coordinator (typically the clinic manager), 1 medical director or other senior leader, 2 primary care providers, 1 psychiatric consultant, 2 care managers. The training meeting will include group sessions plus break-out sessions on specific topics tailored to the different roles (e.g. care managers and primary care providers) and will use a combination of didactic, role play and skills training. This format was highly successful in training staff at each of the 18 sites participating in the original IMPACT trial [13] and has also been successfully employed in more recent large scale implementations of the IMPACT program.

YEAR 1, MONTHS 9 through 12 – Group and Individual Technical Assistance: The AIMS Center will host two group technical assistance calls each month, one focused on clinical implementation issues and one focused on operational implementation issues. The care managers and consulting psychiatrists will participate in the clinical implementation call, which will focus on how to apply the Collaborative Care principles in specific situations they encounter in clinical practice. The program coordinator/clinic manager and medical director will participate in the operational call, which will focus on organizational challenges including long-term sustainability. During the course of these calls it may become apparent that one or more subgrantees needs additional, tailored technical assistance to overcome implementation hurdles. The AIMS Center is experienced in recognizing when an organization needs additional technical assistance in order to insure implementation success and will provide this when needed.

YEAR 2, MONTHS 1 through 6 – Group and Individual Technical Assistance will continue as described above.

YEAR 2, MONTH 6 – Learning Session #2: The AIMS Center will host a 3 day meeting in Seattle that will be attended by the subgrantees. The first day will focus on progress to date, lessons learned to date from implementation and plans for expansion and sustainability at the end of grant funding. The second two days of the Learning Session will reprise the training session from the first year for the benefit of the new care managers hired by those subgrantees who are expanding the program in the second year. Each subgrantee will bring a team to this training meeting that includes at a minimum: 1 designated program coordinator (typically the clinic manager), 2 primary care providers who did not attend the first training, and 2 new care managers.

YEAR 2, MONTHS 7 through 12 – Group and Individual Technical Assistance will continue as described above, with special emphasis on issues related to expansion of the program from 2.0 FTE care manager time up to 4.0 FTE care manager time for those subgrantees expanding the program.

YEAR 3, MONTHS 1 through 12 – Group and Individual Technical Assistance will continue as described above, with an emphasis on expansion and sustainability of the program after grant funds end.

The AIMS Center will provide subgrantees with a variety of tools and materials to assist them with planning and implementing integrated mental health in their primary care clinic. These will include tools to assist with planning implementation (e.g. Team Building Worksheets) and tools to facilitate clinical care (e.g. clinical screening and treatment outcome measures, treatment manuals, patient education materials, clinical worksheets, etc.).

The AIMS Center will also provide an online disease management registry that includes a care plan used by all treating providers as well as symptom measures and clinical reminders designed to facilitate delivery of evidence-based care for a range of mental health conditions treated in community primary care clinics. The registry is also used for program monitoring and to facilitate the delivery of technical assistance. It tracks the total number of patients being treated, important processes of care (e.g. number of contacts, whether contact is in-person or by telephone, length of time in

treatment, identification of patients not improving who have not had a psychiatric consultation) and treatment outcomes (e.g. comparison of symptom severity at baseline and most recent contact, percentage of patients in treatment for at least 10 weeks who are at least 50% improved since baseline). It provides this data at the individual patient level, clinician level, clinical site level, organization level and initiative-wide.

PROPOSAL FOR EVALUATION

We will conduct a thorough evaluation of the implementation, including clinical and economic effectiveness of the program, in partnership with the University of Washington AIMS Center. Our partnership with the AIMS Center provides us with considerable experience in the quantitative and qualitative evaluation of such large scale program implementations to evaluate both the implementation and the effect of the program on achieving its goals.

Our proposed analyses will examine the implementation across participating sites using an observational design that compares the numbers of clients enrolled, health care costs, and improvement in clients' depression and other health outcomes as well as changes in clients' occupational functioning (productivity) and incomes across participating study sites and compares findings from this evaluation with established benchmarks from depression care programs implemented in similar populations and practice settings [12, 27, 56]. UW's Dr. Ya-Fen Chan will serve as the project statistician / analyst and conduct the proposed analyses under the guidance of Dr. Unützer who has led several large scale studies of Collaborative Care programs in diverse practice settings and published on the effectiveness and cost-effectiveness of these programs [27, 41, 57].

A key component of the program involves real time tracking of key process and outcome variables through the web-based care management registry as a routine part of care. This information will be supplemented with patient and provider surveys and clinical billing data. We will use care management registry data augmented by data from independent assessments of program participants to compare program costs, health care outcomes, health care costs, and work-related productivity and incomes for individuals participating in the program. This approach has been previously used by our team in the evaluation of the IMPACT program [41, 58].

Frequency distribution of key process and quality indicators will be calculated and reported on a monthly basis at organizational, clinic, and patient levels. For implementation evaluation purposes, we will examine the performance of these indicators each month and evaluate trends within participating organizations and clinics over time. We will also examine differences in these key process measures across clinics and investigate factors that are associated with such variation. Patient satisfaction data will be analyzed using a general linear mixed model regression (GLMM) approach which allows us to examine trends, organizational and care manager contributions to the variation in patient satisfaction. Analyses of patient outcome data such as PHQ-9 depression scores, social and work functioning (using the Sheehan scale of Health Related Functional Impairment also used in the original IMPACT trial)[59] will also use GLMM to take into account the clustering of patients within clinics. Additionally, we will use survival analysis to evaluate the time from treatment entry to patient outcome improvement (e.g., the time in weeks until patient's achieve remission from depression as measured by a PHQ-9 score <5). This approach [60] was successfully used in a recent analysis of the MHIP Collaborative Care program [57].

In evaluating program effects on health care costs, we will compare mean health care costs before and after program implementation. We will examine costs aggregated in major categories such as inpatient care, outpatient care, pharmacy, and other categories and also compare total health care costs. For each participant, we will use previously validated survey methodology to determine cost during a 6 month period before and for as many as 24 months after enrolling in the program. We will use Generalized estimating equations (GEE) method to identify variation in cost savings across patient populations (e.g. gender, age, insurance status (e.g., specific type of Medicaid product), chronic health conditions) and participating clinics. Drs. Unützer and Chan will be assisted in these economic evaluations by Drs. Michael Schoenbaum and Yuhua Bao, two expert health economists who have collaborated with the AIMS Center on several prior large-scale evaluations of the cost-effectiveness of the IMPACT program [61] and alternative payment methods for IMPACT care [62].

PROPOSAL FOR GROWING SUBGRANTEE IMPACT

The AIMS Center has extensive experience assisting clinical organizations implementing Collaborative Care with growing the program in a sustainable manner. Their implementation experience has taught them that it is important to start the program at a manageable size and grow it only after that initial program is running smoothly for at least 6 months. This is why subgrantees will start with 2.0 FTE care manager time for the first 12 months of implementation. Only after they have shown that their program is well established and is achieving the expected clinical outcomes will they be considered a candidate for expansion up to 4.0 FTE care manager time. This approach to program expansion is compatible with the "trialability" factor of Everett Rogers' Diffusion of Innovations theory [63]. This factor recognizes that it is important for the adopter of any innovation to have an opportunity to experiment with that innovation as it is being implemented so that it can be adapted to fit with existing structures in a way that will be practical and sustainable.

This model of dissemination has been used successfully by previous implementations supported by the AIMS Center. A good example of this is an organization in New York that was initially funded by the Samuels Foundation (based on their connection to JAHF) and was one of the first organizations to adopt the IMPACT program following completion of the research trial. The Institute for Family Health received two years of funding to support implementation of IMPACT in 2 clinics serving older adults in New York City. This allowed them to establish the program on a small scale and work out the clinical work flows and other organizational challenges inherent with the adoption of any innovation. At the end of their grant funding they were sold on the benefits of the program for their patients and providers and went on to expand the program to adults of all ages in most of their 26 clinical locations throughout New York City and the Hudson River Valley. The start-up money that they received allowed them to try the program before making a full commitment to it. This ability to try a program before making a large-scale commitment is a critical component in enticing organizations to adopt an innovation, even it if has been irrefutably proven to produce better health outcomes.

The factors we will use to determine whether a subgrantee is ready for program expansion in Year 2 include: 1) number of patients served since implementation, 2) average number of patients receiving follow-up, 3) average number of patient contacts each month, 3) percentage of patients being discussed with psychiatrist, 4) percentage of patients experiencing at least a 5 point drop in their PHQ-9 depression score, 5) percentage of patients in treatment at least 10 weeks experiencing a 50% reduction in their PHQ-9 depression score, 6) engagement of clinic in technical assistance activities, 7) engagement of clinic in program monitoring activities, 8) strength of subgrantee plan for expansion. All of this information is available in the online care management registry. Only subgrantees who have demonstrated the ability to implement the program successfully will be considered candidates for program expansion.

If subgrantees are ready for expansion, they will be allowed to propose a plan for expansion that best fits their organization. This may include expansion of the program to new sites or expansion of the program at an existing site that has the patient population to support expansion. The subgrantee expansion plan will be reviewed by JAHF and the AIMS Center and may be modified based on their input. The AIMS Center will offer a second in-person training in Year 2 for clinics that are expanding the program so that they can train new staff.

From the start of the program subgrantees will be required to participate in technical assistance activities designed to help them plan for the end of grant funds so that they can sustain and expand the program after grant funding expires. This will create a cohort of self-sustaining organizations that will have the ability to expand to other clinical sites within their own organization and serve as a model for other clinics in the WWAMI region considering implementation of Collaborative Care.

STRATEGY FOR SUSTAINABILITY

We will pursue a number of specific strategies to help improve the long-term sustainability of the IMPACT Collaborative Care program among subgrantees: 1) Technical assistance provided by the AIMS Center will not only focus on initial staff training and program implementation, but will continue throughout the entire period that clinics receive SIF funding to ensure that the program is mature by the time SIF funding ends. In addition, the AIMS Center has experience recognizing implementing organizations that need additional implementation assistance and will provide individual,

tailored technical assistance to subgrantees, as needed, to ensure program success. 2) In Years 2 and 3, the AIMS Center will support participating organizations who have succeeded with initial implementation of the program (at a level of 2.0 FTE care manager time) to expand implementation of the program up to 4.0 FTE care manager time. We will pay close attention to factors that solidify the program by incorporating its key staff and protocols into the routine staffing and clinical workflows in the participating clinics. 3) The AIMS Center will work closely with each participating organization to maximize clinical billing for IMPACT Collaborative Care services and to create a plan that will allow the program to be self-sustaining at the end of SIF funding. This will vary across participating sites based on the nature of their clinics and their local payer mix. For Federally Qualified Health Centers (FQHCs), we may work with them to make sure that their scope includes IMPACT depression care services and that they hire and train licensed staff, such as LICSWs, consulting psychiatrists or psychiatric nurse practitioners who can bill for such services under existing fee-for-service billing arrangements with the federal government. For other community health centers serving Medicaid populations, we will work with the subgrantees and their respective state Medicaid agencies to identify the best ways (either fee-for-service or capitated) in which they can be reimbursed by Medicaid for providing IMPACT services. 4) The AIMS Center has extensive experience working with health care policy makers at the local, state, and federal levels to examine how evidence-based programs such as IMPACT can be reimbursed under diverse health policy and payment settings. We feel that the IMPACT model is extremely well positioned for more widespread implementation under several health care reform developments such as Patient-centered Medical Homes (PCMH) and Accountable Care Organizations (ACOs). Although IMPACT was developed and tested before the current development of PCMHs, a recent analysis sponsored by the Agency for Health Care Quality and Research (AHRQ) cites the IMPACT model as a PCMH ”forerunner” with the most compelling evidence for improvements in health outcomes [66]. The population-based focus and long-term cost savings observed in the original IMPACT trial [41] make it attractive to organizations trying to implement ACOs with the goal of improving health outcomes for populations while containing overall health care costs.

In addition to technical assistance from AIMS to sustain the IMPACT model through earned revenue, JAHF will use its relationships with funders, stakeholders, and affinity groups to broker opportunities for subgrantees to obtain broader support. We will coordinate and support presentations on SIF work before audiences like Grantmakers in Health, the Social Innovation Exchange, and other convenings. Such opportunities often result in new philanthropic support for continued program development and special allocations of support. In addition the opportunity for national exposure is a substantial benefit to the credibility and influence of project champions internal to subgrantee organizations.

REFERENCES

1. Kaiser Family Foundation. www.statehealthfacts.org
2. Albrecht DE. The changing west - a regional overview. Logan, Utah: Utah State University http://wrdc.usu.edu/files/publications/publication/pub__5817878.pdf
3. Rural Policy Institute. Alaska, idaho, montana, washington, wyoming. Columbia, MO: Rural Policy Institute http://www.rupri.org/dataresearchviewer.php?id=6
4. Moussavi S, et al. Depression, chronic diseases, and decrements in health: Results from the world health surveys. Lancet. 2007;370(9590):851-8.
5. Maine Health Information Center. Depression among new hampshire medicaid members: Office of Medicaid Business and Policy, NH Department of Health and Human Services http://www.dhhs.state.nh.us/ombp/documents/depression.pdf
6. Regier DA, Goldberg ID, Taube CA. The de facto US mental health services system: A public health perspective. Arch Gen Psychiatry. 1978;35(6):685-93.
7. Wang PS, et al. Changing profiles of service sectors used for mental health care in the United States. Am J Psychiatry. 2006;163(7):1187-98.
8. Callahan CM, et al. Improving treatment of late life depression in primary care: A randomized clinical trial. J Am Geriatr Soc. 1994;42(8):839-46.
9. Cunningham PJ. Beyond parity: Primary care physicians' perspectives on access to mental health care. Health Aff (Millwood). 2009;28(3):w490-501.
10. Wang PS, Demler O, Kessler RC. Adequacy of treatment for serious mental illness in the United States. Am J Public Health. 2002;92(1):92-8.
11. Wang PS, et al. Twelve-month use of mental health services in the united states: Results from the national comorbidity survey replication. Arch Gen Psychiatry. 2005;62(6):629-40.

12. Rush AJ, et al. One-year clinical outcomes of depressed public sector outpatients: A benchmark for subsequent studies. Biol Psychiatry. 2004;56(1):46-53.
13. Unutzer J, et al. Improving primary care for depression in late life: The design of a multicenter randomized trial. Med Care. 2001;39(8):785-99.
14. Hansen N. The psychotherapy dose-response effect and its implications for treatment delivery services. Clin Psychol-Sci Pr. 2002;9(3):329-43.
15. Unützer J, et al. Transforming mental health care at the interface with general medicine: Report for the President's Commission. Psychiatr Serv. 2006;57(1):37-47.
16. Uebelacker LA, et a. Treatment of depression in a low-income primary care setting with colocated mental health care. Fam Syst Health. 2009;27(2):161-71.
17. Gilbody S, et al. Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. Arch Intern Med. 2006;166(21):2314 - 21.
18. Trivedi MH. Treating depression to full remission. J Clin Psychiatry. 2009;70(1):e01.
19. Von Korff M, Tiemens B. Individualized stepped care of chronic illness. Western J Med. 2000;172(2):133-7.
20. Henke RM, et al. Clinical inertia in depression treatment. Med Care. 2009;47(9):959-67.
21. Arean PA, et al. Improving depression care for older, minority patients in primary care. Med Care. 2005;43(4):381-90.
22. Ell K, et al. Collaborative depression treatment in older and younger adults with physical illness: Pooled comparative analysis of three randomized clinical trials. The Am J Geriatr Psychiatry. 2010;18(6):520-30.
23. Ell K, et al. Depression and diabetes among low-income hispanics: Design elements of a socioculturally adapted collaborative care model randomized controlled trial. Int J Psychiatry Med. 2009;39(2):113-32.
24. Ell K, et al. Collaborative care management of major depression among low-income, predominantly Hispanic subjects with diabetes: A randomized controlled trial. Diabetes Care. 2010;33(4):706-13.
25. Miranda J, et al. Improving care for minorities: Can quality improvement interventions improve care and outcomes for depressed minorities? Results of a randomized, controlled trial. Health Serv Res. 2003;38(2):613-30.
26. Miranda J, et al. Effects of primary care depression treatment on minority patients' clinical status and employment. Arch Gen Psychiatry. 2004;61(8):827-34.
27. Unutzer J, et al. Collaborative care management of late-life depression in the primary care setting: A randomized controlled trial. JAMA. 2002;288(22):2836-45.
28. Levine S, et al. Physicians' satisfaction with a collaborative disease management program for late-life depression in primary care. Gen Hosp Psychiatry. 2005;27(6):383-91.
29. Arean PA, et al. Service use and outcomes among elderly persons with low incomes being treated for depression. Psychiatr Serv. 2007;58(8):1057-64.
30. Grypma L, et al J. Taking an evidence-based model of depression care from research to practice: Making lemonade out of depression. Gen Hosp Psychiatry. 2006;28(2):101-7.
31. Ell K, et al. Randomized controlled trial of collaborative care management of depression among low-income patients with cancer. J Clin Oncol. 2008;26(27):4488-96.
32. Katon WJ, et al. Long-term effects on medical costs of improving depression outcomes in patients with depression and diabetes. Diabetes Care. 2008;31(6):1155-9.
33. Gilmer TP, et al. Improving treatment of depression among latinos with diabetes using Project Dulce and IMPACT. Diabetes Care. 2008;31(7):1324-6.
34. Butler M, et al. Integration of mental health/substance abuse and primary care. Evid Rep Technol Assess (Full Rep). 2008(173):1-362.
35. Korsen N, Pietruszewski P. Translating evidence to practice: Two stories from the field. J Clin Psychol Med Settings. 2009;16(1):47-57.
36. Katon WJ, Lin E, Russo J, Unutzer J. Increased medical costs of a population-based sample of depressed elderly patients. Arch Gen Psychiatry. 2003;60(9):897-903.
37. Simon GE, VonKorff M, Barlow W. Health care costs of primary care patients with recognized depression. Arch Gen Psychiatry. 1995;52(10):850-6.
38. Unützer J, Patrick DL, et al. Depressive symptoms and the cost of health services in HMO patients aged 65 years and older. A 4-year prospective study. JAMA. 1997;277(20):1618-23.
39. Gilbody S, Bower P, Whitty P. Costs and consequences of enhanced primary care for depression: Systematic review of randomised economic evaluations. Br J Psychiatry. 2006;189:297-308.

40. Glied S, Herzog K, Frank R. Review: The net benefits of depression management in primary care. Med Care Res Rev. 2010;67(3):251-74.
41. Unützer J, et al. Long-term cost effects of collaborative care for late-life depression. Am J Manag Care. 2008;14(2):95-100.
42. Katon WJ, et al. Cost-effectiveness and cost offset of a collaborative care intervention for primary care patients with panic disorder. Arch Gen Psychiatry. 2002;59(12):1098-104.
43. Wang PS, Simon GE, Kessler RC. Making the business case for enhanced depression care: The National Institute of Mental Health-Harvard work outcomes research and cost-effectiveness study. J Occup Environ Med. 2008;50(4):468-75.
44. Katon W. The impact of depression on workplace functioning and disability costs. Am J Manag Care. 2009;15(11 Suppl):S322-7.
45. Dismuke CE, Egede LE. Association between major depression, depressive symptoms and personal income in us adults with diabetes. Gen Hosp Psychiatry. 2010;32(5):484-91.
46. Schofield DJ, et al. How depression and other mental health problems can affect future living standards of those out of the labour force. Aging Ment Health. 2011;15(5):654-62.
47. Wells K, et al. Ethnic disparities in unmet need for alcoholism, drug abuse, and mental health care. Am J Psychiatry. 2001;158(12):2027-32.
48. Schoenbaum M, et al. The effects of primary care depression treatment on patients' clinical status and employment. Health Serv Res. 2002;37(5):1145-58.
49. Wang PS, et al. Telephone screening, outreach, and care management for depressed workers and impact on clinical and work productivity outcomes: A randomized controlled trial. JAMA. 2007;298(12):1401-11.
50. Lin EH, et al. Effect of improving depression care on pain and functional outcomes among older adults with arthritis: A randomized controlled trial. JAMA. 2003;290(18):2428-9.
51. Ell K, et al. One-year follow-up of collaborative depression care for low-income, predominantly Hispanic patients with cancer. Psychiatr Serv. 2011;62(2):162-70.
52. Katon WJ, et al. Collaborative care for patients with depression and chronic illnesses. N Engl J Med. 2010;363(27):2611-20.
53. National Association of Community Health Centers, Inc. http://www.nachc.com/
54. Meredith LS, et al. Implementation and maintenance of quality improvement for treating depression in primary care. Psychiatr Serv. 2006;57(1):48-55.
55. Vannoy SD, et al. A learning collaborative of CMHCs and CHSs to support integration of behavioral health and general medical care. Psychiatr Serv. 2011;62(7):753-8.
56. Bauer AM, et al. Implementation of collaborative depression management at community-based primary care clinics: An evaluation. Psychiatr Serv. 2011;62(9):1047-53.
57. Unützer J, et al. Quality improvement with pay-for-performance incentives in integrated behavioral health care. Am J Public Health. In press.
58. Katon W, et al. Cost-effectiveness and net benefit of enhanced treatment of depression for older adults with diabetes and depression. Diabetes Care. 2006;29(2):265-70.
59. Sheehan DV, Harnett-Sheehan K, Raj BA. The measurement of disability. Int Clin Psychopharmacol. 1996;11 Suppl 3:89-95.
60. Marubini E, Valsecchi M. Analyzing survival data from clinical trials and observational studies. England: John Wiley & Sons; 1995.
61. Katon WJ, et al. Cost-effectiveness of improving primary care treatment of late-life depression. Arch Gen Psychiatry. 2005;62(12):1313-20.
62. Bao Y, et al. Designing payment for collaborative care for depression in primary care. Health Serv Res. 2011;46(5):1436-51.
63. Rogers E, M. Diffusion of innovations University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship; 1983.
64. Meredith S, et al. Improving medication use in newly admitted home healthcare patients: A randomized controlled trial. J Am Geriatr Soc. 2002;50(9):1484-91.
65. Boult C, et al. The effect of guided care teams on the use of health services: Results from a cluster-randomized controlled trial. Arch Intern Med. 2011;171(5):460-6.
66. Peikes D, et al. Early evaluations of the medical home: Building on a promising start. Am J Manag Care. 2012;18(2):105-16.