Integrating Behavioral Health into Primary Care

A Technology Assessment

Draft Report

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About ICER

The Institute for Clinical and Economic Review (ICER) is an independent non-profit research organization that evaluates medical evidence and convenes public deliberative bodies to help stakeholders interpret and apply evidence to improve patient outcomes and control costs. ICER receives funding from government grants, non-profit foundations, health plans, provider groups, and health industry manufacturers. Through all its work, ICER seeks to help create a future in which collaborative efforts to move evidence into action provide the foundation for a more effective, efficient, and just health care system. More information about ICER is available at www.icer-review.org

About CTAF

The California Technology Assessment Forum (CTAF) – a core program of ICER – reviews evidence reports and provides a public venue in which the evidence on the effectiveness and value of health care services can be discussed with the input of all stakeholders. CTAF seeks to help patients, clinicians, insurers, and policymakers interpret and use evidence to improve the quality and value of health care. CTAF is supported by grants from the Blue Shield of California Foundation and the California HealthCare Foundation.

The CTAF Panel is an independent committee of medical evidence experts from across California, with a mix of practicing clinicians, methodologists, and leaders in patient engagement and advocacy, all of whom meet strict conflict of interest guidelines, who are convened to evaluate evidence and vote on the comparative clinical effectiveness and value of medical interventions. More information about CTAF is available at www.ctaf.org

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List of Abbreviations Used in this Report

AACP:	American Association of Community Psychiatrists
AAFP:	American Academy of Family Practice
ACA:	Affordable Care Act
ACO:	Accountable care organization
ACP:	American College of Physicians
ACT:	Advancing Care Together
ADP:	Department of Alcohol and Drug Programs
AHRQ:	Agency for Healthcare Research and Quality
AIMS:	Advancing Integrated Mental Health Solutions
ANP:	Advanced nurse practitioner
BHC:	Behavioral health consultant
BHI:	Behavioral health integration
BMI:	Body mass index
BSCA:	Blue Shield of California
CALM:	Coordinated Anxiety Learning and Management
CAP:	Child and adolescent psychiatrist
CBOC:	Community-based outpatient clinic
CBT:	Cognitive behavioral therapy
CHEC:	Consensus on Health Economic Criteria
CMS:	Centers for Medicare & Medicaid Services
CMMI:	Center for Medicare & Medicaid Innovation
COPD:	Chronic obstructive pulmonary disease
CPT:	Current Procedural Terminology
DHCS:	Department of Health Care Services
DMH:	Department of Mental Health
E&M:	Evaluation and Management
ED:	Emergency department
EHR:	Electronic health record
EPHC:	Enhanced Personal Health Care
FFS:	Fee-for-service
FQHC:	Federally qualified health center
FTE:	Full-time equivalent
HBAI:	Health and behavior assessment and intervention
HIPAA:	Health Insurance Portability and Accountability Act
HMO:	Health maintenance organization
HRSA	Health Resources and Services Administration
IBHP:	Integrated Behavioral Health Project
ICSI:	Institute for Clinical and Systems Improvement

IMBH:	Integrate Medical and Behavioral Health
IMPACT:	Improving Mood – Promoting Access to Collaborative Treatment
IT:	Information technology
LCSW:	Licensed clinical social worker
MBHO:	Managed behavioral health organization
MCP:	Managed care plan
MFT:	Marriage and family therapist
MHN:	Managed Health Network
MHP:	Mental health plan
MHSA:	Mental Health Services Act
NAPNAP:	National Association of Pediatric Nurse Practitioners
NCQA:	National Committee for Quality Assurance
NICE:	National Institute for Health and Care Excellence
NP:	Nurse practitioner
PA:	Physician assistant
PBM:	Pharmacy benefits manager
PCP:	Primary care physician
PCMH:	Patient-centered medical home
PIC:	Partners in Care
PMPM:	Per-member per-month
PNP:	Pediatric nurse practitioner
PROSPECT:	Prevention of Suicide in Primary Care Elderly: Collaborative Trial
PTSD:	Post-traumatic stress disorder
P4P:	Pay for performance
QALY:	Quality-adjusted life year
QI:	Quality improvement
QuEST:	Quality Enhancement by Strategic Teaming
RESPECT-D:	Reengineering Systems for the Primary Care Treatment of Depression
RCT:	Randomized controlled trial
RN:	Registered nurse
RR:	Rate ratio
SAMHSA:	Substance Abuse and Mental Health Services Administration
SBIRT:	Screening, brief intervention, and referral to treatment
SMD:	Standardized mean difference
SMI	Serious mental illness
TOP:	Telemedicine Outreach for PTSD
UHC:	United Healthcare
US:	United States
USPSTF:	United States Preventive Services Task Force
VA:	Department of Veterans Affairs

Executive Summary

Background

This assessment evaluates the evidence on the clinical effectiveness and value of the integration of behavioral health services into primary care settings and reviews barriers and potential policy options for the implementation of such integrated care in California.

Behavioral health integration (BHI) into primary care addresses both physical and behavioral health needs in primary care settings through systematic coordination and collaboration among health care providers. For this report, we considered behavioral health to include both mental illness and substance use disorders, and we limited our scope to conditions that are frequently diagnosed and managed in primary care settings. The report excludes efforts designed to incorporate primary care services into settings where patients are receiving specialized treatment of serious mental illness (SMI) and/or substance use disorders.

Despite a long history in the US of treating physical health conditions separately from behavioral health, the two are inextricably linked. Up to 70% of physician visits are for issues with a behavioral health component.[2] A similar proportion of adults with behavioral health conditions have one or more physical health issues.[3] Having a chronic condition is a risk factor for having a behavioral health condition and vice versa.[4] Depression and anxiety in particular are common in primary care settings but are often inadequately identified and treated, leading to a worsening of behavioral conditions and/or increased difficulty managing physical health conditions.

During the past two decades, many initiatives have sought to integrate behavioral health and primary care. The overall goals of BHI are those of the Triple Aim – better outcomes, better care experience, and reduced costs.[63] How these goals are achieved and the terms used to describe various aspects of integrated care vary extensively. Decision-makers across the health care spectrum recognize the need to better serve patients with behavioral health conditions, but questions remain regarding the latest evidence on the effectiveness and value of BHI, as well as how best to approach implementation and which aspects of integration are most important for patient success.

This assessment will support CTAF's deliberation and attempts to answer some of the key issues related to BHI confronting patients, provider organizations, payers, and other policymakers. The goals of this report are to: 1) evaluate the evidence on the comparative clinical effectiveness and value of efforts to integrate behavioral health into primary care, 2) identify the components potentially associated with successful integration, 3) assess the potential budget impact of integrating behavioral health into primary care, and 4) provide an overview of barriers to

integration and lessons learned from national and California-based experts to help identify potential innovations and solutions for BHI in the state.

Consistent with state-of-the-art national efforts to integrate care for both mental illness and substance use disorders, most of this report provides information about both but focuses the evidence review (Section 7) on the treatment of anxiety and depression in primary care, as they are the most common behavioral health disorders treated in primary care settings.[1]

Conceptual Framework

For this report, we adopted a framework published in 2013 by the Substance Abuse and Mental Health Services Administration and the Human Resources Services Administration (SAMHSA-HRSA) Center for Integrated Health Solutions that has six levels of collaboration/integration.[27] There are two levels in each of three categories (coordinated care, co-located care, and integrated care), as described below:

Coordinated care

1. Minimal collaboration: referral network to providers at another site
2. Basic collaboration: periodic communication about shared patients

Co-located care

3. Basic collaboration: primary care and behavioral health providers share facility but maintain separate cultures and develop separate treatment plans for patients
4. Close collaboration: providers share records and some systems integration

Integrated care

5. Close collaboration approaching an integrated practice: providers develop and implement collaborative treatment planning for shared patients but not for other patients
6. Full collaboration in a merged integrated practice for all patients: providers develop and implement collaborative treatment planning for all patients

In this framework, collaboration refers to how resources (i.e., health care professionals) are brought together, whereas integration describes how services are delivered and practices organized and managed. Put differently, collaborative care relates to how behavioral health works with primary care, and full integrated care is when behavioral health functions within and as part of primary care.[27] The higher numbers for integrated care reflect the belief that they represent a greater potential for positive impact on health outcomes and patient experience.

The SAMHSA-HRSA framework emphasizes that co-location of primary care and behavioral providers does not necessarily guarantee greater collaboration or integration but that it can be

beneficial. The authors of this framework note that it is not reasonable for all health care settings to move toward increasing levels of integration, and that practical considerations should drive choice of level. Other researchers have also stated that no single approach to integration will work for all communities; rather, integration should be designed for a particular set of local or statewide circumstances.[2]

Existing Models for Integrated Care Delivery

Numerous approaches have been used to integrate behavioral health and primary care services in a range of settings, and several programs have emerged as models for implementing integrated services nationally. Common elements highlighted across models have been summarized extensively in the policy literature and include:

- Screening for depression, anxiety, and other behavioral disorders using validated screening tools
- Team-based care with non-physician staff to support primary care physicians (PCPs) and co-manage treatment
- Shared information systems that facilitate coordination and communication cross providers
- Standardized use of evidence-based guidelines
- Systematic review and measurement of patient outcomes using registries and patient tracking tools
- Engagement with broader community services
- Individualized, person-centered care that incorporates family members and caregivers into the treatment plan

Effectiveness of Programs that Integrate Behavioral Health into Primary Care

For our review of the evidence on effectiveness, we focused on studies of BHI in a primary care setting with the requirement that a majority of patients have a depression and/or anxiety diagnosis. The vast majority of available studies focused on *mental health* services provided to these patients – in other words, treatment for substance use disorders as well as interventions for smoking cessation and other at-risk behaviors were not a focus of these studies.

A number of systematic reviews have assessed the effectiveness of BHI in the primary care setting among patients with depression and/or anxiety disorders. Findings from these reviews indicate that integrating mental health into primary care improves mental health outcomes such as depression and anxiety, although the effects of integration are relatively modest. Key findings from the reviews and a summary of the evidence strength for each are shown below:

1. Levels of Integration

A systematic review found substantial evidence that integrated care improved mental health outcomes, but that there was no correlation between levels of integration and outcomes. Thus, our judgment is that there is insufficient evidence to assess whether higher levels or intensity of integration offer incremental benefit.

2. Depression

There are a large number of randomized trials of integrated care for depression, the vast majority of which demonstrated improvements in depression outcomes with integrated care compared with usual care. Using the ICER rating,[88] our judgment is that there is high certainty of a small net benefit for integrated care in improving symptoms of depression compared with usual care.

3. Anxiety

Only seven studies focused on anxiety, but they generally showed improvements in anxiety scores or remission. Overall, we judge there to be moderate certainty of a small net benefit for integrated care in improving symptoms of anxiety compared with usual care.

4. Chronic Medical Conditions

There have been a large number of studies of the impact of integration of mental health services into primary care on diabetes outcomes. Most of the studies for other medical conditions, such as cardiovascular disease, evaluated and managed patients in the hospital or specialty clinics rather than in primary care. Diabetes is very common in primary care, and many patients with diabetes also suffer from depression. In trials, patients receiving integrated care had significantly greater decreases in hemoglobin A1c levels, depression scores, and LDL-cholesterol than patients receiving usual care. We judge there to be low certainty of a small net benefit for integrated care in improving both diabetes control and depression compared with usual care in patients with both diagnoses.

5. Quality of life

Many of the randomized trials of depression reported measures of quality of life. Integrated care improved mental health quality of life more than usual care in the first 6 months, and those gains were preserved through 24 months. The trend still favored integrated care beyond 24 months, but it was no longer statistically significant. There were no early improvements in physical health quality of life, but the differences became significant between 13 and 24 months. We judge there to be high certainty of a small to moderate net benefit for integrated care in improving quality of life in the mental health domain compared with usual care. There is low certainty of a small net benefit for integrated care in improving quality of life in the physical health domain compared with usual care.

6. Patient satisfaction

Patients in randomized trials were significantly more satisfied with integrated care. The size of the benefit was modest but highly statistically significant. We judge there to be high certainty of a small to moderate net benefit for integrated care in improving patient satisfaction compared with usual care.

In sum, there is a very large body of literature on the integration of mental health into primary care. Studies of different models of integration across widely varying delivery systems demonstrate with great consistency that integrated care improves depression and anxiety outcomes, although the absolute benefits are only small to modest. Furthermore, integrated care improves patient quality of life and satisfaction with care. There is inadequate evidence to assess whether greater integration would lead to larger improvements in outcomes.

Components of BHI Associated with Treatment Success

Research on the impact of individual components of BHI on depression-related or other health outcomes is extremely limited. To complement previous research analyzing factors of collaborative care associated with improvement in depressive symptoms and use of anti-depression medication, we conducted an analysis of the factors of integrated care most frequently reported in studies with successful outcomes.

We identified 36 models of integrated care that reported statistically significant improvements in one or more primary outcomes of interest, such as sustained improvement in depression or anxiety symptoms, likelihood of receipt of antidepressant therapy, and medication adherence. The most common program component across successful models was inclusion of a standardized care coordination plan that involved regular interaction with both patient and physician (86%), followed by formal patient education at 69%. Both supervision of care coordinators and systematic screening in primary care were included in two-thirds of successful models, while inclusion of a standardized schedule of psychotherapy appeared in approximately half. The addition of new dedicated staff, presence of formalized stepped care plans, and use of shared medical records were the least common program components. Only two models included all eight components.

Comparative Value of BHI

ICER has adopted the following framework for assessing the comparative value of health care interventions, with value assessed according to two distinct constructs:

- *Care Value:*
    1. Comparative clinical effectiveness of each intervention vs. alternatives (considering both clinical benefits and harm)

2. Any additional "non-clinical" benefits (e.g., reduced caregiver burden)
3. Contextual considerations (no other acceptable treatment, vulnerable populations)
4. Cost-effectiveness (incremental cost to achieve important patient outcomes vs. alternatives)

- *Health System Value:*
    1. Care value of the intervention of interest (as above) AND
    2. Potential effects of short-term budgetary impact from the intervention on other patients in the health care system

Our economic analysis had three components:

1. To assess comparative care value, we conducted a detailed analysis of the available literature on the economic impact of BHI in primary care for the treatment of depression and/or anxiety with a focus on the differential impact of BHI in certain subgroups of patients, key drivers of economic impact, and any trends in comparative value over time.
2. We also describe publicly-available resources for planning and implementing BHI as well as estimating start-up, implementation, and incremental "steady state" costs associated with BHI.
3. We estimated the per-member, per-month (PMPM) budgetary impact of implementing BHI in an individual accountable care organization (ACO) based on assumed levels of implementation costs and ongoing "steady-state" costs over one year.

Our consideration of care value is based on a relatively robust evidence base for both clinical effectiveness and cost-effectiveness of BHI interventions for depression and anxiety in primary care. Available studies have been relatively consistent in showing incremental clinical benefit over usual care, at least in terms of mental health outcomes. In addition, while not explicitly measured in these studies, there does not appear to be any potential harm to the patient from integration efforts. Finally, while the quality of available economic evaluations could be greatly improved, findings from multiple evaluations across a variety of integration models and populations suggest that BHI falls within generally-acceptable thresholds for cost-effectiveness ($15,000 - $80,000 per quality-adjusted life year gained vs. usual care).

Assessment of health system value is much more complex, however, as the investment in BHI and the potential for return on investment varies greatly depending on the realities faced in any individual setting. Economic studies have shown with consistency that BHI increases organizational costs, at least in the short term. Our own budgetary impact analysis suggests that first-year expenses for a 200,000 member ACO are sizeable, even in a relatively low-risk population. The incremental PMPM expense of BHI ($2.84) generated in this analysis represents a 9% increase over a cited primary care benchmark PMPM of $26.[160]

Evidence on longer-term cost savings is more limited, focused on specific subpopulations (e.g., patients co-diagnosed with diabetes) in many instances, and subject to methodological concerns in others (e.g., incomplete accounting of start-up or practice-wide costs, tracking of health care costs at periods distal to end of intervention). In addition, while there are not currently consistent data with which to estimate potential cost offsets from BHI, fairly conservative estimates of reductions in health care costs could offset these initial investments considerably.

Barriers and Solutions

Despite the desire of many to integrate behavioral health into primary care, significant barriers have been articulated by researchers and practitioners across the country and within California.[5,164-166] National and state-specific barriers to BHI can be grouped into the following categories – reimbursement and payment, culture and historical influences, technology/information sharing, provider training and capacity, and service capacity and delivery (see table ES1 below).

Table ES1. Major Barriers to BHI

Category	Specific Issues
Reimbursement and payment	• Payment that has historically rewarded volume through fee-for-service payments rather than outcomes through capitated payments and shared risk/shared savings models • Limitations on billing
Culture and historical influences	• Separate silos for behavioral health and physical health – both in terms of service delivery and financing • Different cultural norms around training, licensing, and certification for primary care, mental health, and substance use • Ongoing stigma related to mental health and substance use conditions
Technology/ information sharing	• Challenges related to limited data sharing via electronic health records (EHRs), which are preferred but are not as widely used by behavioral health providers as by physical health providers • Confidentiality laws that are more restrictive for behavioral health (particularly for substance use) than for physical health • Fragmented communication among providers of primary care, mental health, and substance use services • Actual and perceived confidentiality requirements/restrictions
Provider training and capacity	• Limited training of primary care physicians in behavioral health conditions and of behavioral health providers in physical health conditions • Shortage of certain types of personnel including psychiatrists and providers; substantial variation in provider supply across the state • Scope of practice concerns • Shortage of psychiatrists overall and shortage of other behavioral health providers who are bilingual and can provide culturally competent care to the state's diverse residents; geographic disparities in provider supply

Category	Specific Issues
Service capacity and delivery	• Limited community resources to which patients with behavioral health conditions can be referred – primary care physicians can be reluctant to screen for conditions when no or few referral resources are available • Service capacity gaps, especially for substance use and psychiatry • Confusing care pathways and transitions, especially for those enrolled in Medi-Cal who move between the categories of mild-to-moderate and SMI and for people with criminal justice system involvement

A great deal of work is underway in California to integrate behavioral health into primary care at the state and county levels, as well as by some providers in both the public and private sectors. A variety of pilot projects and proposals are being generated and discussed across the state to address and overcome some of the thornier barriers to integration.

Much of the leadership around BHI in California is occurring at the state and county levels. At the state level, the Department of Health Care Services (DHCS), which administers the Medi-Cal program, has a variety of initiatives underway to encourage integration, and the funding provided by Proposition 63 has also encouraged the transformation of mental health services in California. At a recent summit, DHCS convened stakeholders to identify practical solutions that would advance California's behavioral health system along a continuum toward a fully integrated, high-performing health system.[167] Potential solutions include information shared through electronic health records (EHRs), advanced care coordination, evidence-based clinical practices, and effective communication among providers. As of January 2014, Medi-Cal managed care plans (MCPs) receive capitation payments that include responsibility for providing services to enrollees with mild to moderate functional impairment due to a mental health condition. Several proposals have been submitted to DHCS to further align incentives for integrated care through shared savings and/or shared risk arrangements.

Other potential improvements to facilitate BHI in California were identified through key informant interviews and meeting summaries/other reports related to California's integrated care efforts.[167,168] These include new reimbursement and payment strategies that provide incentives to encourage integration; improved screening, referral, and treatment processes; ensuring services are available for patients who have complex behavioral and physical health conditions; and improving consumer choice of services and providers.

At the public CTAF meeting on April 2, 2015, these barriers and potential solutions will be discussed at length with the CTAF Panel and a Policy Roundtable composed of subject matter experts. The final version of the report that will be developed following the CTAF meeting will include a more extensive set of policy perspectives and recommendations.

Introduction

This assessment for the California Technology Assessment Forum (CTAF) evaluates the evidence on the clinical effectiveness and value of the integration of behavioral health services into primary care settings and reviews barriers and potential policy options for the implementation of such integrated care in California.

Scope of Review

Behavioral health integration (BHI) into primary care addresses both physical and behavioral health needs in primary care settings through systematic coordination and collaboration among health care providers. For this report, we considered behavioral health to include both mental illness and substance use disorders, and we limited our scope to conditions that are frequently diagnosed and managed in primary care settings.

Consistent with state-of-the-art national efforts to integrate care for both mental illness and substance use disorders, most of this report provides information about both but focuses the evidence review (Section 7) on the treatment of anxiety and depression in primary care, as they are the most common behavioral health disorders treated in primary care settings.[1] Studies that include patients with serious mental illness (SMI) or substance use disorders are included as long as >50% of the population studied was diagnosed with depression and/or anxiety; otherwise they are excluded. This is designed to focus the assessment on studies that involve management and triage of patients presenting in the primary care setting and to exclude studies focusing on the delivery of primary care services in settings where patients are receiving specialized treatment for SMI and/or substance use disorders.

Context

Despite a long history in the US of treating physical health conditions separately from behavioral health conditions, the two are inextricably linked. Up to 70% of physician visits are for issues with a behavioral health component.[2] A similar proportion of adults with behavioral health conditions have one or more physical health issues.[3] Having a chronic condition is a risk factor for having a behavioral health condition and vice versa.[4] Depression and anxiety in particular are common in primary care settings but are often inadequately identified and treated, leading to a worsening of behavioral health conditions and/or increased difficulty managing physical health conditions.

The economic impact of behavioral health conditions is also significant. Care for patients with comorbid behavioral health conditions can cost 2-3 times more than care for patients without these comorbidities,[5] and these individuals can have substantially shorter life expectancies than the

average person.[3] Additional national health care expenditures related to behavioral health comorbidities were estimated to be $293 billion in 2012, with approximately 217 million days of work lost annually at a cost of $17 billion/year.[5] Behavioral health spending is concentrated among public insurers. Medicaid beneficiaries are twice as likely to have mental illness, and Medicaid finances more than 25 percent of behavioral health spending in the US.[6,7]

During the past two decades, many initiatives have sought to integrate behavioral health and primary care. Decision-makers across the health care spectrum recognize the need to better serve patients with behavioral health conditions, but questions remain regarding the latest evidence on the effectiveness and value of BHI as well as how best to approach implementation and which aspects of integration are most important for patient success. This report focuses on the integration of behavioral health into primary care. Such integration is designed to improve screening and/or treatment in primary care settings through systematic coordination and collaboration among health care providers to address both physical health and behavioral health needs. Simply stated, it involves whole-person care and "reconnecting the head to the body."

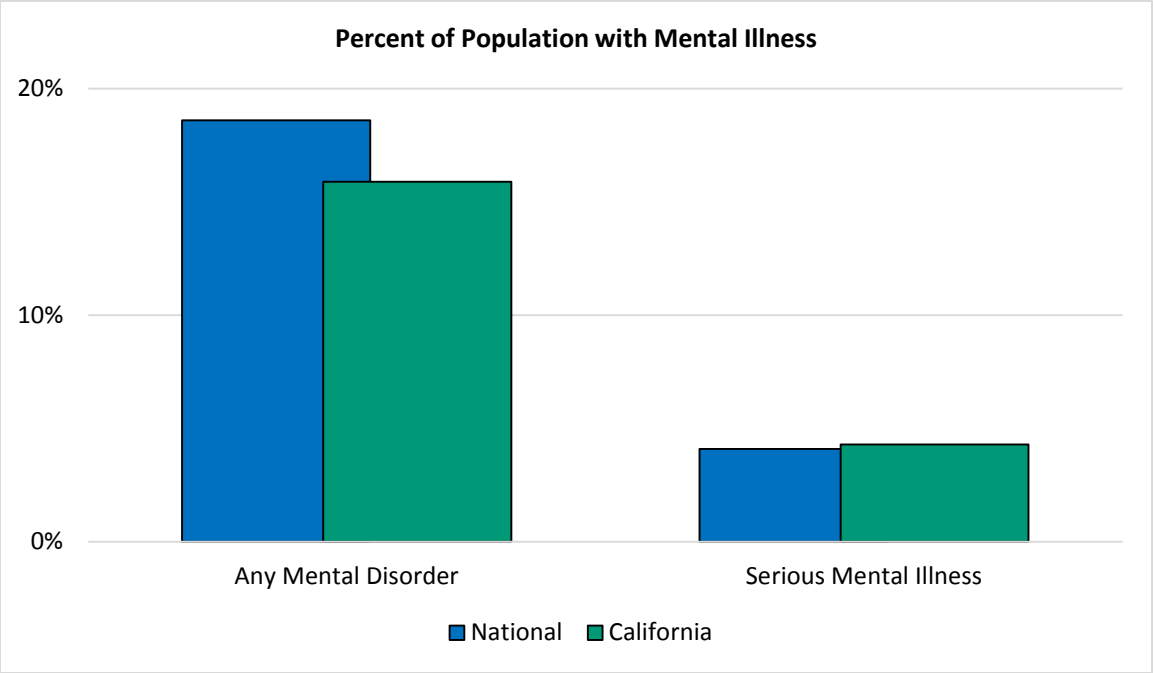
This assessment will support CTAF's deliberation and attempts to answer some of the key issues confronting patients, provider organizations, payers, and other policymakers. The goals of this report are to: 1) evaluate the evidence on the comparative clinical effectiveness and value of efforts to integrate behavioral health into primary care, 2) identify the components potentially associated with successful integration, 3) assess the potential budget impact of integrating behavioral health into primary care, and 4) provide an overview of barriers to integration and lessons learned from national and California-based experts to help identify potential innovations and solutions for BHI in the state.

1. Background

1.1 Behavioral Health Conditions

Behavioral health conditions are common; more than one quarter of the US population is reported to have a mental health and/or substance use disorder in any given year.[8] In the US, about 44 million adults have a mental disorder,[9] and about 10 million of those have a SMI that substantially interferes with or limits major life activities (see Figure 1 below).[10] In California, rates of mental illness are similar – one in six adults has a mental health need, and about one in 20 has a SMI.[11]

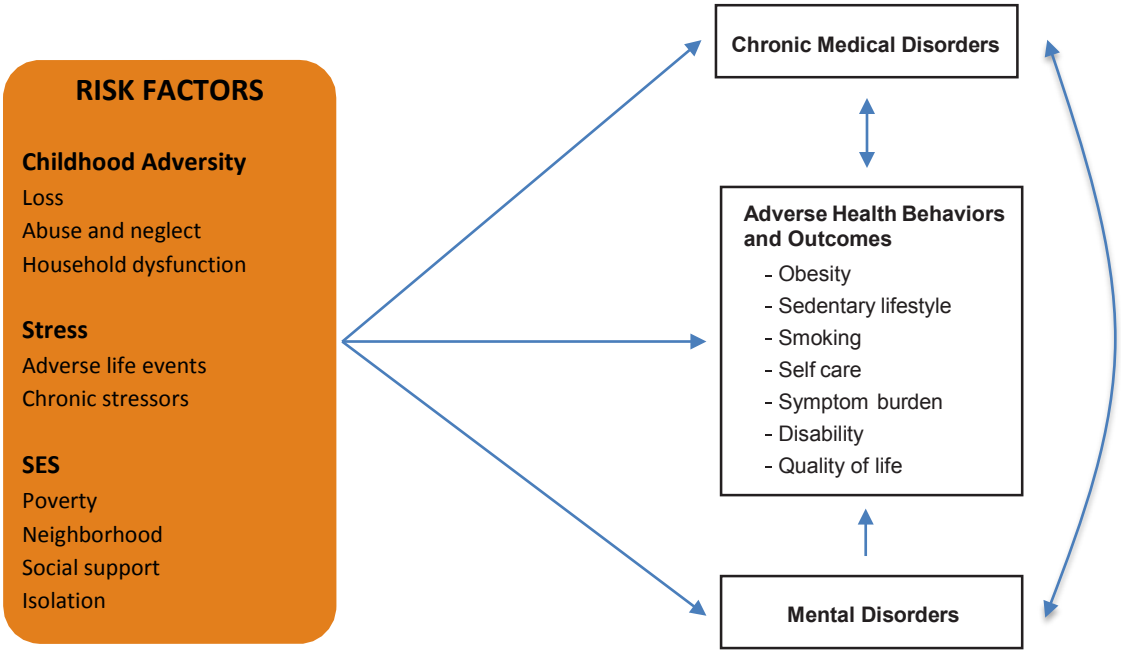
Figure 1: Prevalence of Any Mental Disorder and SMI, National and California



Source: California HealthCare Foundation. Mental health care in California: Painting a picture. California Health Care Almanac, July 2013.[11]

While lifetime occurrence is higher, about 8.2% of adults reported having a major depressive episode (lasting at least two weeks) in the past 12 months,[11] and more than 18% had an anxiety disorder.[12,13] Many patients have both mental health conditions and medical conditions: 29% of the adult population with medical conditions also have mental disorders, and 68% of the adult population with mental disorders also have medical conditions.[14] As shown in Figure 2 on the next page, a variety of risk factors affect both medical and mental disorders, and there are inter-relationships between chronic medical disorders, adverse health behaviors and outcomes, and mental disorders.

Figure 2. Model of Interaction between Mental and Medical Disorders



Source: Druss BG, Walker ER. Mental disorders and medical comorbidity, RWJF Research Synthesis Report 21, Feb. 2011.[14]

There are higher rates of SMI among several racial and ethnic groups, including Native Americans, African Americans, and those who are multiracial, as well as among people with lower income levels. California had similar patterns to the US overall for illicit drug dependence and abuse (2.9% of the population) as well as alcohol dependence and abuse (7.3% of the population) in 2012-2013.[15]

At some point in their life, about 32% of adolescents aged 13 to 18 will have an anxiety disorder, 14% will have a mood disorder, and 22% will have severe impairment of daily activities and/or severe distress as a result of anxiety, mood, or behavioral disorder.[16] Over a given 12-month period, about 4% of children ages eight to 15 will have a mood disorder, 0.7% will have an anxiety disorder, and about 11% overall will be severely impaired from an anxiety, mood, or behavioral disorder.[17]

In sum, the population to be served by integrated care is complex, with many having co-occurring mental health and substance use disorders along with chronic physical health conditions, being homeless or in transitional housing, and experiencing other socioeconomic determinants of poor health (e.g., limited job opportunities and transportation, poverty, exposure to crime/violence).

Consistent with national trends over the past 20 years, mental health spending for inpatient and residential care in California has been declining, while spending on prescription drugs has been increasing. Government agencies purchase nearly 60% of mental health services in the US, with

Medicaid representing 28% of total expenditures, other state and local government 18%, Medicare 8%, and other federal sources 5%.[18] Approximately 90% of Medicaid spending is for physical health and 10% for behavioral health; by contrast, the percentages for private insurers are 97% and 3%, respectively.

Most diagnoses of behavioral health conditions, especially depression and anxiety, are made in the primary care setting. Despite the high prevalence, more than half of those who have a behavioral health condition are not treated for it.[19,20] Multiple factors contribute to this, including most primary care providers not having extensive training in behavioral health, relatively short appointment times to address a patient's multiple needs, limited behavioral health referral resources, and restrictions on billing for services. Nonetheless, large numbers of patients are taking medications to treat anxiety and depression. In 2010, more than 20% of adults in the US were taking antidepressants, antipsychotics, attention deficit hyperactivity disorder drugs, or anti-anxiety drugs.[21]

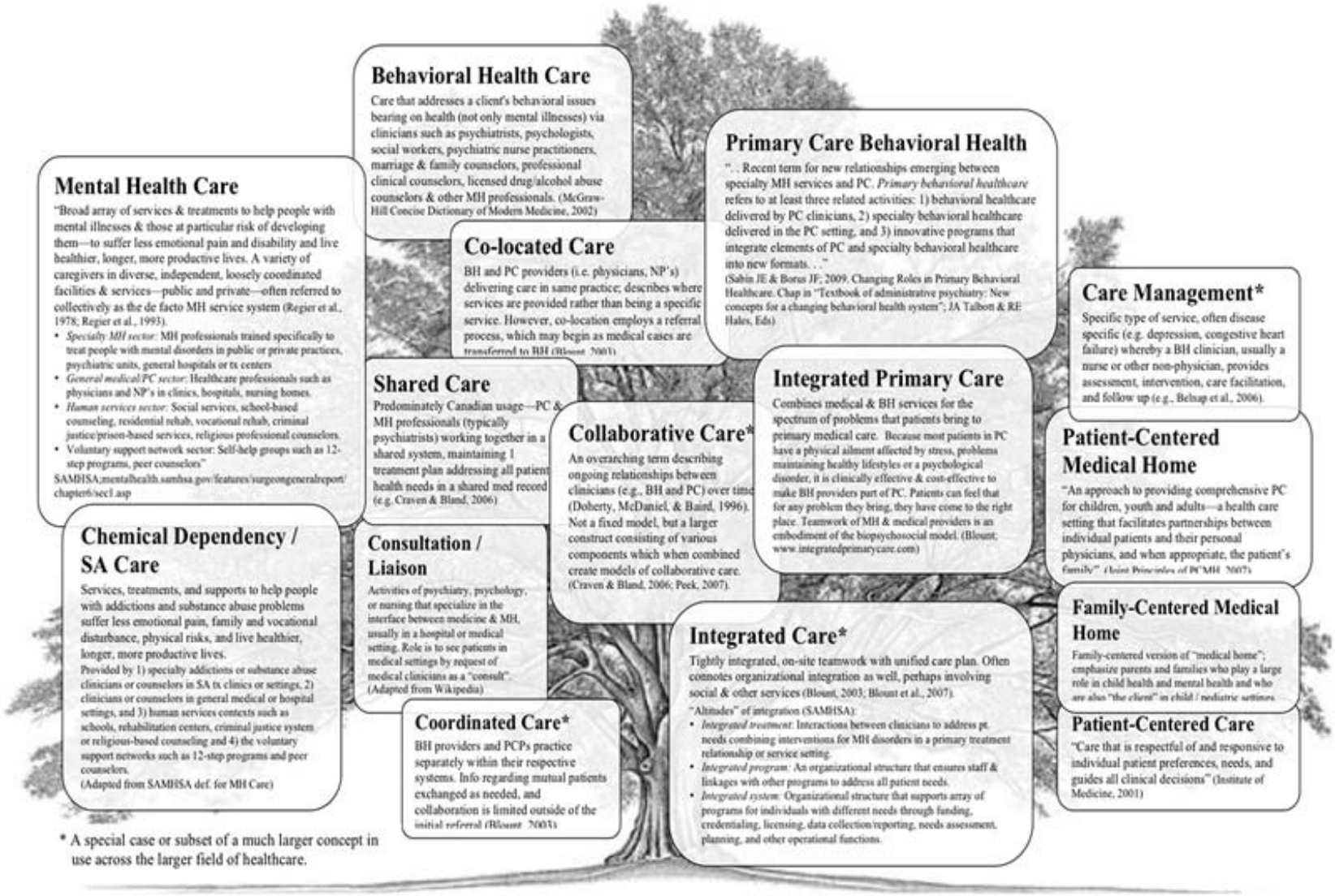
1.2 Conceptual Framework

The overall goals of BHI are those of the Triple Aim – better outcomes, better care experience, and reduced costs.[63] How these goals are achieved, and the terms used to describe various aspects of integrated care, vary extensively and include "co-located care," "collaborative care," "integrated primary care," "care management," and "patient-centered care," among others (see Figure 3 on the next page).[22] Both the Agency for Healthcare Research and Quality (AHRQ) and the Substance Abuse and Mental Health Services Administration (SAMHSA) have provided thought leadership on the topic of integrating behavioral health into primary care. Contributions from both federal agencies are described below.

AHRQ Lexicon and Integration Framework

AHRQ created an *Academy for Integrating Behavioral Health and Primary Care* that is designed to be both a "coordinating center and a national resource for people committed to delivering comprehensive, integrated health care."[23] Recognizing the need for a standardized vocabulary in this emerging field, the Academy supported development of a consensus *Lexicon*, which is a set of concepts and definitions designed to enable effective communication among various stakeholders discussing and implementing integration.[24] The Lexicon is intended to be a functional definition and describe actual practice; this is in contrast to previous definitions in the field that "emphasized values, principles, and goals."[24]

Figure 3. Family Tree of Terms in Use in the Field of Collaborative Care



Source: Miller BF et al. A National Agenda for Research in Collaborative Care, AHRQ Publication No. 11-0067, July 2011.[22]

Building on the Lexicon, while noting the need for a more specific set of observable and measurable functions within integrated care, the Academy also developed an *Integration Framework* that specifies functional domains and/or actions and measurement constructs for integrated behavioral health care.[25] Functional domains refer to high-level functions or actions such as care team expertise, clinical workflow, and data collection and use. Measurement constructs describe specific characteristics (i.e., structures), actions (i.e., processes), and outcomes for each of the functional domains. The framework appears to be useful for organizations interested in the elements of each function that are important for design, implementation, and measurement of success within a given organization, but are less well-suited to a critical assessment of the level of integration across organizations. In the following section, we describe another integration framework that is more easily applied to the programs described in the accumulated body of evidence for this topic.

SAMHSA-HRSA Levels of Collaboration/Integration

Building on the five-level collaboration continuum initially specified by Doherty (1995)[26] and other subsequent work, the SAMHSA-HRSA Center for Integrated Health Solutions published a framework in 2013 that has six levels of collaboration/integration.[27] Because it is the current framework produced and disseminated by the federal agency focused on substance abuse and mental health services, is commonly used by practitioners, and is more suitable to the summary of evidence we provide in this report, we adopted this framework (described briefly below) as an organizing tool in the evidence review (section 7).

There are two levels in each of three categories (coordinated care, co-located care, and integrated care), as described below:

Coordinated care

1. Minimal collaboration: referral network to providers at another site
2. Basic collaboration: periodic communication about shared patients

Co-located care

3. Basic collaboration: primary care and behavioral health providers share facility but maintain separate cultures and develop separate treatment plans for patients
4. Close collaboration: providers share records and some systems integration

Integrated care

5. Close collaboration approaching an integrated practice: providers develop and implement collaborative treatment planning for shared patients but not for other patients
6. Full collaboration in a merged integrated practice for all patients: providers develop and implement collaborative treatment planning for all patients

In this framework, collaboration refers to how resources (i.e., health care professionals) are brought together, whereas integration describes how services are delivered and practices organized and managed. Put differently, collaborative care relates to how behavioral health works with primary care, and full integrated care is when behavioral health functions within and as part of primary care.[27] The higher numbers for integrated care reflect the belief that they represent a greater potential for positive impact on health outcomes and patient experience.

Integration Considerations

The SAMHSA-HRSA framework emphasizes that co-location of primary care and behavioral providers does not necessarily guarantee greater collaboration or integration but that it can be beneficial (e.g., may reduce travel time for patients, may increase likelihood that patient makes and keeps an appointment with a behavioral health provider, may increase communication between physical and behavioral health providers). The authors of this framework note that it is not reasonable for all health care settings to move toward increasing levels of integration and that practical considerations should drive choice of level.

In a review of integrated care models, Collins et al (2010) suggest that integration should be designed for a particular set of local or statewide circumstances, taking into account such factors as the population being targeted, provider availability/training, service capacity in the community, consumer preferences, funding/reimbursement, and regulatory restrictions.[2] They note that there is no single approach that will work for all communities, and that differences in needs, resources, and practice patterns will influence which model is the best fit for a specific community. The practice model adopted may range from loose collaboration across separate providers where case managers are used to coordinate services with complex needs to a fully collaborative system of care where behavioral health and primary care services are woven seamlessly together.

1.3 Workforce Considerations

Intrinsic to BHI is team-based care and collaboration across different types of providers. Depending on the practice setting and unique population needs, AHRQ identified the following categories of potential members of integrated care teams: [28]

- Primary care providers, including physicians, physician assistants (PAs), nurse practitioners (NPs)
- Behavioral health providers, such as social workers, psychiatrists, psychologists, counselors, marriage and family therapists
- Allied health professionals, such as health educators, community health workers, pharmacists, care coordinators, peer specialists, patient navigators

The practice change required to integrate behavioral and physical health services typically involves scope-of-practice changes and retraining of staff to meet program objectives. Academic training rarely includes formal education on effective collaboration and how to work with other members of a care team.[29] For example, psychologists are rarely oriented to the unique culture and needs of primary care as part of standard training,[30] and primary care physicians often lack exposure to management of behavioral health conditions in their training programs. Moreover, most integration strategies involve the addition of a care manager role, or someone whose job it is to coordinate services and support for the patient and among providers. Care managers can come from a range of disciplines, including nursing, social work, or psychology, and typically require training explicit to the role.

Two federally sponsored initiatives support training efforts and the development of a standard set of core competencies needed for integrated care settings. AHRQ is conducting an observational study of successfully integrated primary care sites to develop a set of workforce competencies to help guide training for behavioral health and primary care providers. In 2014, SAMHSA also developed a set of core competencies to help inform workforce training and orientation, recruitment, and performance assessment.[31] Split across 10 major domains, SAMHSA's competencies apply to both physical and behavioral health practitioners and prioritize effective communication and teamwork, knowledge of evidence-based behavioral health interventions and screening strategies, and cultural competence. The full set of competencies are summarized in Table 1 below.

Table 1. Summary of SAMHSA Core Competencies

Category	Competencies
Interpersonal Communication	The ability to establish rapport quickly and to communicate effectively with consumers of health care, their family members, and other providers. Examples include: active listening; conveying information in a jargon-free, non-judgmental manner; using terminology common to the setting in which care is delivered; and adapting to the preferred mode of communication of the consumers and families served.
Collaboration and Teamwork	The ability to function effectively as a member of an interprofessional team that includes behavioral health and primary care providers, consumers, and family members. Examples include: understanding and valuing the roles and responsibilities of other team members, expressing professional opinions and resolving differences of opinion quickly, providing and seeking consultation, and fostering shared decision-making.

Category	Competencies
Screening and Assessment	The ability to conduct brief, evidence-based, and developmentally appropriate screening and to conduct or arrange for more detailed assessments when indicated. Examples include screening and assessment for: risky, harmful or dependent use of substances; cognitive impairment; mental health problems; behaviors that compromise health; harm to self or others; and abuse, neglect, and domestic violence.
Care Planning and Coordination	The ability to create and implement integrated care plans, ensuring access to an array of linked services, and the exchange of information among consumers, family members, and providers. Examples include: assisting in the development of care plans, whole health, and wellness recovery plans; matching the type and intensity of services to consumers' needs; providing patient navigation services; and implementing disease management programs.
Intervention	The ability to provide a range of brief, focused prevention, treatment, and recovery services, as well as longer-term treatment and support for consumers with persistent illnesses. Examples include: motivational interventions, health promotion and wellness services, health education, crisis intervention, brief treatments for mental health and substance use problems, and medication assisted treatments.
Cultural Competence and Adaptation	The ability to provide services that are relevant to the culture of the consumer and their family. Examples include: identifying and addressing disparities in health care access and quality, adapting services to language preferences and cultural norms, and promoting diversity among the providers working in interprofessional teams.
Systems Oriented Practice	The ability to function effectively within the organizational and financial structures of the local system of health care. Examples include: understanding and educating consumers about health care benefits, navigating utilization management processes, and adjusting the delivery of care to emerging health care reforms.
Practice-Based Learning and Quality Improvement	The ability to assess and continually improve the services delivered as an individual provider and as an interprofessional team. Examples include: identifying and implementing evidence-based practices, assessing treatment fidelity, measuring consumer satisfaction and health care outcomes, recognizing and rapidly addressing errors in care, and collaborating with other team members on service improvement.

Category	Competencies
Informatics	The ability to use information technology to support and improve integrated health care. Examples include: using EHRs efficiently and effectively; employing computer and web-based screening, assessment, and intervention tools; utilizing telehealth applications; and safeguarding privacy and confidentiality.

Reproduced from SAMHSA-HRSA Center for Integrated Solutions, 2014[31]

Training programs to develop a workforce for integrated care have proliferated in recent years, with nearly 100 integrated care training programs now available across the US.[32] Efforts to develop the workforce for integrated care are especially salient given the projected shortage of primary care physicians (PCPs) and behavioral health professionals.[33,34] A more comprehensive discussion of the workforce issues related to BHI is in Section 9.

2. Contextual Issues: Regulations and Policies Affecting BHI

Integration of behavioral health care requires substantial effort given the long history of separate financing, different types of service providers with different expectations about treatment, and real or perceived barriers to sharing data across providers. This section provides an overview of the regulatory, financial, and administrative context affecting how behavioral health and primary care services are integrated. A detailed discussion of practice and delivery system innovations, barriers, and opportunities for BHI in California is in Section 9. It is important to recognize that the landscape for BHI is constantly evolving and that this section should therefore be considered a "snapshot" of the status at the time of the report's publication.

2.1 Administrative Oversight, Billing, and Information Sharing

Regulatory Oversight and Financing

Physical and behavioral health services have historically been regulated and financed through multiple tiers of government and separate agencies, leading to the fragmented delivery of care. It is not uncommon for decisions affecting the provision and financing of physical health, mental health, and substance use services to be split across multiple entities, complicating the ease with which care can be integrated at the practice level. For instance, in many states, all practices must seek licensing and credentialing through multiple governmental departments, such as Medicaid, mental health, and alcohol/drug agencies, in order to co-locate and be reimbursed for services; this is complicated by each entity often having different budgets, processes, and regulations.[35] Moreover, the separate entities charged with regulating health services may have unique responsibilities that can be at odds with one another, making it difficult in some states to form a cohesive strategy for BHI. The division of responsibilities for physical and behavioral health may also exacerbate the cultural divide between services at the practice level by creating distinct sources of support and guidance that fail to bridge the two areas of care.[35]

Individuals without private insurance who have disabling mental health conditions in California rely on publicly-funded mental health services, which are typically provided through county systems.[18] Although state government has some oversight responsibility, two separate "realignment" efforts in 1991 and 2011 shifted responsibility for mental health away from the state to the counties.[18] Oversight also occurs at the county level by boards of supervisors and local mental health advisory boards.[18] Some counties provide mental health services directly through staff employed at county-

owned and -operated facilities, while others contract with entities including federally qualified health centers (FQHCs) for these services.[18]

Public funding for mental health services in California comes from multiple sources including Medi-Cal, the criminal justice system, and realignment funds (sales tax and vehicle license fees). A major funding stream unique to California comes from Proposition 63, known as the Mental Health Services Act (MHSA). Passed in 2004, it provides funding for mental health services, including prevention, early intervention, and education. It imposes a 1% tax on personal income above $1 million to provide dedicated funding for expansion of mental health programs. MHSA now raises more than $1 billion annually and represents about 25% of California's overall public mental health spending.[36] With a portion of MHSA revenues devoted to novel and creative mental health approaches and practices, this funding stream has supported the transformation of public mental health services in about 15 counties.[37]

As with funding streams, state government agencies focused on physical health, mental health, and substance use were historically separate until 2012-2013. In 2012, most of the functions of the Department of Mental Health (DMH) were transferred to the Department of Health Care Services (DHCS). In 2013, the former Department of Alcohol and Drug Programs (ADP) was eliminated and its functions absorbed into DHCS. The consolidation of DMH and ADP into DHCS, along with the passage and implementation of the Affordable Care Act (ACA), presented DHCS with an opportunity to advance BHI in California, as is described in detail in Section 9.

Medicaid Billing

Complex billing rules also pose a significant challenge to BHI. Even though a standard set of Current Procedural Terminology (CPT) and diagnostic codes are maintained nationally, each state Medicaid program has unique billing rules that affect how behavioral health services are reimbursed. Many Medicaid programs place restrictions on same-day services, meaning that providers within the same organization are unable to bill for behavioral and physical health visits on the same day, and/or a single practitioner cannot receive reimbursement for providing both types of service on the same day unless specifically licensed to do so.[38] This is the case in California, where Medi-Cal prevents FQHCs from same-day billing for both physical and behavioral health services.

Medicaid additionally limits the specific procedures and diagnoses for which primary care providers can receive reimbursement, and in-person consultation is also a common requirement for billing, even though coordination that is core to integrated care is often performed outside of the patient visit.[38] Existing codes may not comprehensively address the full scope of integrated care, meaning that some activities central to integration, like communication and consultation across providers, are not reimbursable. To address some of these concerns, the Centers for Medicare & Medicaid Services (CMS) added six Health and Behavior Assessment and Intervention (HBAI) codes in 2010 to

better support integrated services and allow for the billing for services related to behavioral, social, psychological and cognitive issues that impact the management of physical health problems.

Medicaid programs may also place limitations on the type of practitioner that can bill and receive payments for behavioral health services, often excluding "nontraditional" health care professionals such as peer support specialists and community health workers that are increasingly relied on in integrated settings.[35] In California, Medi-Cal only allows licensed physicians, PAs, NPs, clinical psychologists, and licensed clinical social workers (LCSWs) to bill and be reimbursed for HBAI codes. A more detailed explanation of Medi-Cal and other health insurer reimbursement for integrated services is available in Section 5.

Medicaid programs, as well as commercial health plans, are pursuing alternative payment methodologies that allow for greater flexibility in how behavioral health services are reimbursed in primary care settings, but fee-for-service (FFS) payments, which do not provide incentives for integrated care, remain pervasive. Further discussion of potential options and solutions to reimbursement is in Section 9.

Information Sharing: Confidentiality and Electronic Health Records (EHRs)

Federal and state privacy laws intended to protect patient confidentiality have important implications for the integration of care. The Health Insurance Portability and Accountability Act (HIPAA) regulates the disclosure and use of patient health information. It contains broad exceptions that allow for data disclosure without prior consent from the patient when related to treatment, payment, and operational activities.[1,39] More stringent criteria exist for facilities providing treatment for substance use disorders, which affects the ability of practitioners in these centers to share data with primary care practices. States may also employ stricter requirements in addition to HIPAA that can further limit practitioners from sharing information and facilitating coordinated services. In California, privacy and confidentiality laws require clinicians, health plans, and contractors to first obtain written authorization from a patient before psychotherapy notes and drug and alcohol treatment records can be shared, except in very limited circumstances.[40]

The enactment of HIPAA and other patient protection laws has corresponded with the spread of EHRs in the US.[41] EHR adoption has become a national policy priority to better facilitate coordination across providers and allow individual practitioners to access patient health information expediently to inform treatment decisions.[42] However, in part due to more stringent privacy laws affecting the care of patients with substance use and mental illness disorders,

[1] Psychotherapy notes have special rules under HIPAA legislation. Patients must provide written prior authorization consent for their disclosure or use by a practitioner, but this only applies when the notes are separate from the patient's individual medical record.

behavioral health organizations have adopted EHR systems at a much slower pace than have other health care settings.[42] Moreover, recent incentive programs that reward practices with higher payments from Medicare and Medicaid for adopting EHR systems exclude many behavioral health providers, including psychologists and social workers.[43] Federal efforts have been made to support infrastructure that allows for the exchange of health information between physical health and behavioral health providers, but these initiatives are primarily in the form of individual pilot projects, and the lack of widespread use of EHRs among behavioral health professionals and practices remains an issue.[44]

2.2 Purchasing Arrangements for Behavioral Health Services

Behavioral Health Carve-Outs

Public and private health plans often "carve out" some or all behavioral health services from their benefit package to be managed by a separate organization. Delegating the financial and administrative responsibility for behavioral health to organizations with specific expertise in this area was historically intended to ensure appropriate use of behavioral health services but can also hinder the integration of care. In a carve-out model, the provision and financing of a patient's physical and behavioral health care are coordinated across multiple organizations, each with potentially distinct provider networks, budgets, and policies. For clinicians, carve-outs may mean that physical and behavioral health services are reimbursed through different payment models, thereby misaligning incentives. In some cases, carve-out networks are limited to mental health specialists, meaning that primary care provider groups are unable to directly participate on carve-out panels.[38] Carve-outs can also make it difficult to access comprehensive patient information across entities, additionally hindering integration at the provider level. For these reasons, as the importance of integrating behavioral and physical care has become more recognized, state Medicaid programs as well as commercial payers are increasingly pursuing strategies that align financial accountability and coordination across organizations, or are shifting towards integrated arrangements that manage the administration and purchasing of both behavioral and physical health services.

Public Sector

Prior to 2014, Medi-Cal enrollees had very limited access to mental health services unless they required specialty mental health services (i.e., had a SMI based on diagnosis and functionality). In 2014, Medi-Cal expanded coverage to those mental health services included in the state's essential health benefits package.[45] As part of the capitated payment Medi-Cal managed care plans (MCPs) receive, they are now responsible for providing services to enrollees with mild to moderate functional impairment due to a mental health condition. While coverage for these additional

services reflects DHCS' goal for a fully integrated care delivery system, the care for enrollees seeking care for mental health conditions may still be fragmented. In all but two California counties, enrollees can be treated for these conditions in primary care or referred for therapy/additional services to a managed behavioral health organization (MBHO). In the other two counties, integrated care is provided by the county (e.g., in San Mateo county, mental health clinicians are outstationed to five primary care clinics to perform brief therapy and triage). As was the case prior to 2014, for Medi-Cal enrollees with SMI, specialty mental health services (e.g., inpatient, outpatient mental health, crisis intervention, case management) are still carved-out and provided by county mental health plans (MHPs).[46] Enrollees who move between the two classifications (mild to moderate, serious) based on their functionality may further experience fragmented care when they move between the two systems responsible for their care (MCPs for mild to moderate, MHPs for SMI).

Private Sector

While some private health plans have behavioral health units as part of their organization, others have contractual relationships with MBHOs to provide behavioral health services on a carve-out basis to enrollees. Many large self-insured employers have administrative services only agreements with health plans and carve out behavioral health coverage to a MBHO. Over the past several years, several health plans have engaged in pilot projects to integrate care, and many more are planned.

2.3. Payment and Care Delivery Initiatives

Accountable Care Organizations (ACOs)

National health reform through the ACA has created opportunities for clinical integration by supporting the development of alternative payment models that provide incentives for clinicians to coordinate services and provide quality care more efficiently. Accountable Care Organizations (ACOs), or networks of health care providers that share clinical and financial responsibility for a defined patient population,[47] may be particularly well-suited to integrate behavioral and physical health services due to unique incentives that emphasize primary care and foster greater coordination across providers. Unlike with traditional FFS payment structures, ACOs receive bonus payments (e.g., shared savings) for controlling costs and meeting certain quality benchmarks and have more flexibility to provide services such as care management that are not typically reimbursed.[48] However, a recent survey of ACOs from across the country revealed that BHI is still limited in these settings, in part because of contract arrangements that continue to carve out behavioral health services and costs from the rest of primary care.[49]

California has 67 ACOs, more than any other state, with over 1.3 million Californians projected to receive their care from an ACO by February 2016.[50] ACOs are still emerging within the health care

safety net and Medi-Cal, which has the flexibility to test various care delivery models designed to improve quality and control costs as part of a Medicaid waiver.[50]

Medical Homes and Health Homes

The patient-centered medical home (PCMH) is another model that has evolved to improve the quality and efficiency of primary care delivery. Also referred to as a primary care medical home, many of the core principles of PCMHs overlap with the goals of integration, including physician-led team-based care, coordinated services across disciplines, and person-centered services that comprehensively address the physical, psychosocial, and behavioral aspects of treatment. PCMHs differ in how they are reimbursed, but many have adopted a payment structure that combines FFS with supplemental per-member per-month (PMPM) payments to cover the cost of coordinated care, as well as opportunities for bonuses based on performance in key outcomes.[51]

The National Committee for Quality Assurance (NCQA) launched its PCMH Recognition program in 2008 to develop standards and guidelines for practices working to transform how primary care is organized. The most recent set of standards issued in 2014 placed an expanded focus on BHI, including new requirements for team-based care, depression screening, and care management for patients with behavioral disorders. Standards with aspects specific to BHI are provided in Table 2 on the next page.

The ACA recently expanded on the medical home model to explicitly address the coordination of physical and behavioral health services. Health Homes, established in section 2703 of the ACA, are designated practice organizations (typically safety net providers) that use health care teams to provide comprehensive case management, coordination, individual and family support, community referrals, and transitional care services to populations with multiple chronic conditions, including behavioral health disorders.[52] Whereas PCMHs have involved multiple payer participation, Health Homes are currently exclusive to Medicaid. Health Homes are also reimbursed using alternative payment methodologies, typically PMPM capitated rates. Only a small number of states have established Health Homes so far, with more currently receiving planning grants to implement the model.

California received a planning grant from CMS to develop a state plan amendment for a Section 2703 waiver, and staff work related to the waiver is currently underway.

Table 2. Summary of 2014 NCQA PCMH Standards Specific to BHI

Standard	Description
Team-Based Care	• Practices document and communicate to patients how behavioral health needs will be addressed • Members of the care team are trained and assigned to support patients/families/caregivers in self-management, self-efficacy, and behavior change
Population Health Management	• Tobacco use status is captured in an electronic record of all patients aged 13 and older • Clinicians perform comprehensive health assessments that include 1) attention to an individual's health behaviors, 2) history and family history of behavioral health conditions, and 3) an understanding of social and cultural factors that affect health • Clinicians screen for depression using a standardized tool in practices with access to relevant services when results are positive • Clinical decision support is implemented using evidence-based guidelines for behavioral health disorders and conditions related to unhealthy behaviors
Care Management Support	• Clinicians use a systematic process to identify patients for clinical care management using criteria that prioritizes populations with a high prevalence of behavioral health disorders
Care Coordination and Transitions	• Practices maintain agreements with behavioral health providers to enhance access, communication, and coordination • Leadership describes the integration approach to behavioral health providers within the practice site

Source: SAMHSA-HRSA Center for Integrated Solutions, 2014. [53]

Medicaid and Health Center Expansion

The expansion of Medicaid programs authorized by the ACA may bring greater significance to integration efforts, as individuals gaining coverage through Medicaid are disproportionately affected by behavioral disorders. The ACA also established new requirements that health insurance sold through Health Insurance Exchanges or provided by Medicaid to newly eligible adults must cover mental health and substance use services to the same extent as all other covered medical benefits.[54] The ACA expands on existing legislation through the Mental Health Parity and Addiction Act of 2008 that requires group health plans and insurers with existing coverage for behavioral health conditions to provide coverage that is comparable to that of medical and surgical care.[55] California is among the states that adopted Medicaid expansion, adding over 3 million additional enrollees to the program since 2013.[56]

The ACA also established an $11 billion trust fund to finance the expansion of FQHCs to address the behavioral and primary care needs of the patients they serve. FQHCs have a long history of providing comprehensive health care to underserved populations, and in many states have been at

the center of innovative efforts to integrate behavioral health services. A 2010 national survey of FQHCs indicated that 65 percent provided some level of integrated services.[57] Federal investment in FQHCs is intended to increase the capacity for community health centers to provide comprehensive, integrated primary health care services, particularly in environments with expanded access to health care coverage.[58]

In 2013, there were 129 FQHCs in California with over 1,200 care sites, serving about 3.4 million patients.[59] Of these, 89% provided mental health and/or substance use services. Much of the funding for California's FQHCs comes from Medi-Cal patients, who make up about 46% of all patients and for whom services are reimbursed on a FFS basis.

Telemedicine

Telemedicine, or the use of electronic information and telecommunication technology to provide health at a distance, has emerged in recent years as a tool to support integrated care. In areas where populations are dispersed and/or there are insufficient human and capital resources to provide behavioral health services in primary care settings, practices have turned to telemedicine to link patients with physical and behavioral health providers under one system of care. Telemedicine has been used to provide general health assessment, psychotherapy, medication management, and psychiatric diagnostic assessment, though the type of services reimbursed using telemedicine varies significantly across payers.[60] There is a national trend for states to require telemedicine services to be reimbursed at the same rate as in-person visits by private insurers.[61] Medicare and Medicaid programs also typically provide some degree of coverage for telemedicine, though each state has unique requirements that affect the setting in which services can be provided, as well the type of providers who can deliver services.[62] Access to telemedicine is also affected by state licensing rules that require practitioners to be licensed in the state where the patient is receiving care.[170]

Medi-Cal reimburses providers for telehealth services if they are licensed in California, enrolled as a Medi-Cal provider, and the telemedicine service provides a near real-time or better audiovisual connection (communication in seconds to minutes) between the patient and doctor.

3. Existing Models for Integrated Care Delivery

Numerous approaches have been used to integrate behavioral health and primary care services in a range of settings. The evidence review in Section 7 explores the comparative effectiveness of different levels of integration and seeks to identify the key program components that correspond to patient success. Several advanced programs have emerged that have served as models for implementing integrated services nationally, each with distinctive features and core similarities to how care is organized and coordinated. Common elements highlighted across models have been summarized extensively in the policy literature and include:

- Screening for depression, anxiety, and other behavioral disorders using validated screening tools
- Team-based care with non-physician staff to support PCPs and co-manage treatment
- Shared information systems that facilitate coordination and communication cross providers
- Standardized use of evidence-based guidelines
- Systematic review and measurement of patient outcomes using registries and patient tracking tools
- Engagement with broader community services
- Individualized, person-centered care that incorporates family members and caregivers into the treatment plan

Selected models are briefly described below to provide context to how integration is being approached in primary care. A table with a more comprehensive description of each program is provided in Appendix A. We chose to highlight these systems of BHI as they are among the most developed programs and have served as models for integrating behavioral health into primary care in a variety of settings.

Summary of Select Models for BHI

Cherokee Health Systems (Behavioral Health Consultants)[171]

Cherokee Health Systems is a network of FQHCs and community mental health organizations in Tennessee that operates over 50 clinic sites throughout the state. This system takes a population-based approach to care management whereby every patient is screened for behavioral health conditions and triaged to the appropriate level of support. Generalist Behavioral Health Consultants (BHCs) are fully embedded on the care team and work collaboratively with PCPs to develop treatment plans and co-manage patient care. BHCs are available to provide rapid access to behavioral services – often during the same patient visit – and are a standard feature of well-child

visits and prenatal appointments. Psychiatric consults are available to provide guidance and support for more complex cases. Team members are connected through a system of EHRs and use standard measures to track patient outcomes.

Department of Veterans Affairs (VA)[172]

The VA integration program built on a strong existing infrastructure to implement a national strategy for BHI that focuses exclusively on SMI and depression. The program involves several individual projects that are coordinated but are individualized to each site's unique needs. Under this system, PCPs provide universal screening of depression and post-traumatic stress disorder (PTSD). Patients with positive screens are assessed for behavioral health needs using structured protocols performed by care managers. Depression care managers are included on the primary care team and make recommendations to the PCP about treatment, provide proactive patient follow-up, and communicate with consultant psychiatric specialists when problems arise. EHRs are used to facilitate provider communication, report data, and provide point-of-care decision support.

IMPACT Model/Collaborative Care[173]

Developed by the University of Washington, the IMPACT/Collaborative Care model integrates treatment for a range of mood and anxiety disorders into primary care settings. The AIMS Center based at the University of Washington focuses on the implementation of Collaborative Care and has worked with hundreds of practices nationally and internationally to apply and adapt the model. Under this system, patients are screened for depression and anxiety using validated screening tools. Care managers are core members of the care team and work with PCPs to support medication management and to provide brief counseling and other services as well as coordinate across providers. Psychiatric consults are available to support PCPs when diagnosing patients and making treatment adjustments. Patient progress is systematically tracked and monitored using a central data registry.

Intermountain Healthcare Mental Health Integration Program[174]

Intermountain Healthcare is an integrated health system of over 20 hospitals and 200 outpatient clinics serving the metropolitan area of Salt Lake City, Utah. The health system built on existing institutional structures for coordinated care to integrate primary care and behavioral health services. Features of this model are being applied to health systems nationally, including in Maine, Mississippi, New Hampshire, and Oregon. At Intermountain, all patients receive a comprehensive mental health assessment and are screened for depression, anxiety, and other behavioral health concerns using validated screening tools. PCPs and other behavioral health team members collaborate to develop shared treatment plans and provide for seamless patient transition across providers. A secure, central health information exchange is available to all team members to track and upload patient data, using a standard set of measures.

4. Clinical Guidelines and Policy Statements

Guidance for Integrating Behavioral Health in Primary Care Settings

Joint Principles for Integrating Behavioral Health into the Patient-Centered Medical Home (PCMH), 2014

http://www.aafp.org/dam/AAFP/documents/practice_management/pcmh/initiatives/PCMHJoint2014Update.pdf

A joint statement from multiple clinical societies promotes the use of PCMHs for integrating care. Each patient in a PCMH should have a personal physician who is primarily responsible for the patient's care but will also have access to a team of health care professionals including a behavioral health specialist, who should ideally be co-located to improve access and coordination. Information technology should include information from all providers on the care team, including the behavioral health provider's patient notes, mental health screening and case finding tools, and outcome tracking.

Funding should be pooled between physical and behavioral health providers using a model such as PMPM capitation payments. Payment should be available for behavioral health services provided in a face-to-face setting, as well as telemedicine services (e.g., telephone, electronic communications). Services associated with the coordination of care should be available to all patients including services provided by separate team members on the same day.

American Association of Community Psychiatrists (AACP), 2002

http://www.communitypsychiatry.org/pages.aspx?PageName=AACP_Position_Paper_on_Interface_and_Integration_with_Primary_Care_Providers

The American Association of Community Psychiatrists (AACP) suggests that mental health professionals working in community-based settings should become more familiar with the culture of primary care. AACP outlines several key characteristics of an integrated model including behavioral health triage, capacity for ongoing behavioral health consultation support and training for PCPs and staff, and care monitoring with chronic disease management protocols.

AACP recommends integrated settings be staffed with master's degree or higher-level mental health professionals, as well as mental health professionals with prescribing privileges, and nurse staff or other non-mental health trained staff to provide some or all of care monitoring and support services. AACP supports implementation of ongoing measures to evaluate program success, including accuracy of diagnosis of psychiatric disorders for patients seen in primary care, the

effectiveness and cost-effectiveness of services provided, clinical outcome indicators, and satisfaction of both patients and providers.

Department of Veterans Affairs (VA), 2008

http://www.mirecc.va.gov/VISN16/docs/UMHS_Handbook_1160.pdf

The VA Uniform Mental Health Services Handbook establishes minimum requirements for VA Mental Health Services. Included in the numerous regulations outlined in the Handbook is an overarching requirement that systems provide integration or coordination between care for mental health conditions and other aspects of health care for all veterans. Patients must have a principal mental health provider while receiving mental health care. All veterans receiving mental health care must be enrolled in a VA primary care clinic for their primary care needs. If veterans are not already enrolled in VA primary care, their mental health providers must assist them in receiving all appropriate screenings and preventive interventions in the mental health clinic. Mental health programs are not intended to function as isolated entities but rather within the larger context of the VA system.

United States Preventive Services Task Force (USPSTF), 2009

http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/depression-in-adults-screening

The USPSTF supports screening for depression in primary care to assure accurate diagnosis, effective treatment, and follow-up. The guidelines mention several tools for primary care providers to use to diagnose depression, and note that shorter, informal screening tests that include questions about loss of interest in activities or depressed mood may be just as effective as a more formal assessment.

Institute for Clinical and Systems Improvement (ICSI), 2013

https://www.icsi.org/guidelines__more/catalog_guidelines_and_more/catalog_guidelines/catalog_behavioral_health_guidelines/depression/

In screening for and monitoring depression, ICSI recommends using a standardized instrument to document symptoms and baseline severity to assist in monitoring response and remission rates. Screening should be completed if depression is suspected based on certain risk factors including substance use disorder, diabetes, cardiovascular disease, and chronic pain. The cultural background of the patients should be taken into account when assessing and treating depression. The physician or office staff must document the patient's symptoms based on DSM-5 criteria and track progress and remission throughout the course of treatment. The PCP should supplement medication with psychotherapy and work with the patient to adjust medication dosage, if necessary.

5. Coverage and Reimbursement Policies

While most efforts to integrate behavioral health into primary care are at the practice or health system level, two private national payers (Aetna, Anthem) offer programs in support of collaborative or integrated care. These and some other regional (Health Net) and national payers (Humana, United Healthcare) have divisions within the overall organization that provide behavioral health services to some portion of the plan's members, so both physical health and behavioral health care are provided under the same umbrella organization, potentially reducing restrictions on data sharing and care coordination that are more common under carve-out arrangements. Nonetheless, for behavioral health providers who are paid on a FFS basis, payers have been limited in the extent to which they can provide incentives for integrated care.

Since payer policies are continually evolving and information is not always publicly available, this section is not intended to be a complete picture of private and public payer efforts related to BHI. Rather, this section includes information on publicly available billing requirements/restrictions from payers and information on their support of BHI as of the date of this report.

Medi-Cal has more payment restrictions (e.g., on the types of providers who can bill for behavioral health services in primary care, types of visits that can be billed by an FQHC on the same day, billing codes that can be used) than do private payers. Some private payers are currently or have been involved in integrated care pilot projects that involve different payment structures and incentives.

Public Payers

Medi-Cal

Licensed physicians, PAs, and advanced nurse practitioners (ANPs) may bill Medi-Cal for evaluation and management (E&M) services related to behavioral health care. Health and Behavioral Assessment/Intervention (HBAI) codes may be used by a MD, PA, NP, clinical psychologist, or a LCSW; HBAI codes for family therapy are not "turned on" in California so are not reimbursable. Providers who may use HBAI codes may also provide "Screening, Brief Intervention, and Referral to Treatment" (SBIRT) services for alcohol, provided they have completed four or more hours of SBIRT training. Psychiatrists may bill for psychiatric evaluation in a primary care setting, and therapy services may be provided by a MD, PA, NP, clinical psychologist, or LCSW. Mental health assessments, group therapy, and crisis interventions are not reimbursable by Medi-Cal in primary care. A more detailed analysis of which providers may use individual CPT codes related to behavioral health is available at the SAMHSA-HRSA Center for Integrated Health Solutions website.

Same-day billing for both mental health and physical services is not permitted at FQHCs, except in the case of illness or injury subsequent to the first visit.

- SAMHSA-HRSA Center for Integrated Health Solutions Billing Workbook for California: http://www.integration.samhsa.gov/financing/California.pdf
- DHCS provider manuals: http://files.medi-cal.ca.gov/pubsdoco/Manuals_menu.asp (choose psychological services)

Medicare

Compared to Medi-Cal, Medicare covers a broader set of services related to BHI, and there is also variation between the programs regarding which providers can bill for specific services. Medicare provides coverage for the same HBAI codes as Medi-Cal, with the addition of family therapy that includes the patient, but allows only doctoral-level psychologists to use the codes. Medicare is more restrictive regarding alcohol SBIRT services: beneficiaries are eligible for one screening per year and four 15-minute counseling sessions; the services may *not* be provided by a clinical psychologist or LCSW as in Medi-Cal, but they may be provided by a clinical nurse specialist or certified nurse-wife. If permitted by state FQHC billing rules, a physician, NP, PA, or certified nurse specialist may bill for psychiatric evaluation performed in a primary care setting. The same providers, with the addition of psychologists and LCSWs may bill for therapy, group therapy, crisis intervention, and mental health assessment services in primary care settings if permitted for FQHCs in the state. There is no difference between Medi-Cal and Medicare policies for the use of E&M codes. A detailed comparison of the two programs is provided in the SAMHSA-HRSA Center for Integrated Health Solutions Billing Workbook listed under the previous heading.

Medicare FFS plans allow for same-day billing of mental health and physical health services.

- CMS Medicare Benefit Policy Manual: http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/bp102c13.pdf
- SAMHSA same day billing analysis: http://www.integration.samhsa.gov/financing/Same-Day-Billing-Fact-Sheet-ICN908978.pdf

Regional Private Payers

Blue Shield of California (BSCA)

About 80% of Blue Shield of California (BSCA) members receive behavioral health care under a carve-out agreement with Magellan Behavioral Health. Though it is paid a PMPM fee by BSCA, Magellan pays its providers on a FFS basis. BSCA currently does not have any payment incentive arrangements with Magellan to encourage BHI into primary care. No detailed information on payment rates or structural approaches to BHI was publicly available from Magellan.[64]

No other regional private payers have publicly available documents regarding efforts to support BHI.

National Private Payers

Aetna

Aetna offers PCPs a depression program that screens and triages members to appropriate levels of care. Participating physicians screen patients for depression with validated screening tools and refer those who test positive to Aetna care planning and case management staff. The plan also identifies patients for screening based on data from its in-house pharmacy benefits manager (PBM) program, as well as by a patient's comorbid conditions. Aetna staff contact patients via telephone at multiple points after treatment and re-administer a depression screening tool (the PHQ-9, a nine item questionnaire). Physicians may consult with an Aetna psychiatrist at any time and may refer their patients to behavioral health specialists with optional assistance from a care manager.[65]

- Aetna Depression in Primary Care Program: http://www.aetna.com/healthcare-professionals/documents-forms/depression-program.pdf

Anthem

Anthem offers its Enhanced Personal Health Care (EPHC) program to PCPs, who are encouraged to screen for depression, alcohol, and drug use, and to promote the use of self-management techniques. Anthem staff support implementation efforts by providing consultation for workflow and process improvement, data analysis, and care management and coordination skill development. All participating providers must use a suite of web-based tools that include a record of all health care services received by their Anthem patients both within and outside of the provider's organization.

Practices that participate in the EPCH program may receive care coordination payments on a PMPM basis, though Anthem notes that local regulation and existing contracts may preclude these payments. Providers who meet both cost and quality targets are eligible for shared savings. Anthem offers EPHC programs in several states including California.

- Patient-Centered Primary Care Collaborative summary of Anthem EPHC program: https://www.pcpcc.org/initiative/anthem-enhanced-personal-health-care
- EPHC Program Description: http://www.anthem.com/ca/provider/f2/s2/t1/pw_e191769.pdf?refer=provider

Cigna

Cigna offers a Collaborative Care Program in several states, including California, in which physician-led care teams with care coordinators employed by the provider receive support from Cigna case managers to link patients to the clinical support programs for chronic condition management or lifestyle management offered by the payer. Medical groups participate in a pay-for-value structure linked to improved outcomes and lower costs.

- Patient-Centered Primary Care Collaborative summary of Cigna's Collaborative Care Program: https://www.pcpcc.org/initiative/cigna-collaborative-care-program

Humana

Humana manages its Integrated Medical and Behavioral Health (IMBH) program through a subsidiary, LifeSynch. The program focuses primarily on case management services provided by medical case managers from Humana and behavioral case managers from LifeSynch.[65]

- LifeSynch IMBH program homepage http://www.lifesynch.com/about/products/behavioral_healthcare/integrated_medical_behavioral_healthcare.asp

United Healthcare (UHC)

United Healthcare (UHC) has a subsidiary, OptumHealth, which manages its behavioral health benefit.

- UHC report on primary care delivery advancement http://www.unitedhealthgroup.com/~/media/UHG/PDF/2014/UNH-Primary-Care-Report-Advancing-Primary-Care-Delivery.ashx

6. Ongoing US Studies

The table on the next three pages summarizes the ongoing and recently completed studies of BHI in three categories: model of care, screening tools, and technological intervention.

Title	Study Design	Comparators	Patient Population	Primary Outcomes	Estimated Completion Date
Model of Care					
Consultation Liaison and Integrated Care for COPD Patients with Psychiatric Co-Morbidity (COPD_HSRG) NCT01644916	RCT N = 900	Standard care for chronic obstructive pulmonary disorder (COPD) with psychiatric comorbidity Integrated care with team of nurse educators, doctors, case manager, psychologist	• Ages 55-90 • COPD diagnosis • No psychiatric disorder • No terminal illness	• Hospital Anxiety and Depression Scale (HADS) score	December 2015
Stepped Enhancement of PTSD Services Using Primary Care (STEPS UP): A Randomized Effectiveness Trial NCT01492348	RCT N = 666	STEPS UP RESPECT-Mil collaborative care	• Age 18-65 • Active duty military • Has PTSD • No psychosis, bipolar disorder within 2 years • No substance dependence within 1 year • No suicidal ideation within 2 months	• Post-traumatic Diagnostic Scale 3,6, 12 months • Hopkins Symptom Checklist Depression Scale – 20 Item Version (HSCL-20) 3, 6, 12 months	September 2015

Title	Study Design	Comparators	Patient Population	Primary Outcomes	Estimated Completion Date
Research Aimed at Improving Both Mood and Weight (RAINBOW) NCT02246413	RCT N = 404	Lifestyle intervention, and as-needed antidepressant pharmacotherapy to treat comorbid obesity/depression in primary care Usual care	• Age > 18 • Body mass index (BMI) ≥ 30 (≥27 for Asians) • PHQ-9 > 10 • No alcohol/SU disorder • No SMI, bulimia nervosa, terminal illness, diabetes, cardiovascular disease • No ongoing psychiatric care outside of PAMF network	• BMI at 12 months • Depression Symptom Checklist 20 (SCL-20) score at 12 months	March 2019
Treatment of Insomnia and Depression in Elders (TIDE) NCT01648049	RCT N = 46	Integrated cognitive behavioral therapy (ICBT) Usual care	• Age > 50 • Not current psychological treatment • No serious suicidality • No significant cognitive impairment • No intrusive/unstable concurrent psychiatric/medical disorders	• Insomnia severity index at 10 weeks, 3 months • Hamilton Depression Scale at 10 weeks, 3 months	March 2015
Brief Cognitive Behavioral Treatment of Deployment-Related Post-Traumatic Stress Disorder (PTSD) Symptoms in Primary Care Settings NCT02291639	RCT N = 60	Brief CBT Minimal contact followed by treatment	• Age > 18 • PTSD Checklist, Stressor-specific (PCL-S) score > 32 • No moderate to severe suicide risk • No severe brain injury	• Change in PTSD symptom and/or diagnosis from baseline at 2 weeks, 8 weeks, 6 months using PTSD Symptom	August 2015

Title	Study Design	Comparators	Patient Population	Primary Outcomes	Estimated Completion Date
			• No alcohol dependence, psychotic disorder, significant dissociative disorder	Scale, Interview Version and PCL–S	
Screening Tools					
An Evaluation of Innerview, a Web-Based Tool to Support the Integration of Mental Health in the Primary Care Setting NCT02025647	Observational N = 150	Innerview mental health clinical decision support tool	• Age > 18 • Men and Women • Can read English at 8th grade level • Internet Access • No current psychosis	• Accuracy of data collected • Reliability for identifying DSM-IV-TR criteria	January 2015
Technological Intervention					
Enhancing Delivery of Problem Solving Therapy (PST) Using SmartPhone Technology NCT01891734	RCT N = 40	PST PST + Moving Forward (mobile app)	• Age > 18 • Depression and/or Anxiety • No SMI or substance use	• Depression • Anxiety • Stress	March 2015
Online Treatments for Mood and Anxiety Disorders in Primary Care NCT01482806	RCT N = 700	Computerized CBT + internet support group (N = 300) Computerized CBT (N = 300) Usual Care (N = 100)	• Age 18-75 • Current major depression, panic, or anxiety disorder • PHQ-9 > 10 • No SMI • No alcohol/substance use disorder	• Mental health-related quality of life at 6 months • Secondary: Hamilton Rating Scale for Depression (and Anxiety) at 6 months	December 2015

7. Evidence Review (Methods & Results)

7.1 Effectiveness of Programs that Integrate Behavioral Health into Primary Care

Our review of the evidence on the effectiveness of programs that integrate behavioral health into primary care can be found in the sections that follow. Note that, because of our focus on studies of BHI in a primary care setting and the requirement that a majority of patients have a depression and/or anxiety diagnosis, the vast majority of available studies focused on *mental health* services provided to these patients—in other words, treatment for substance use disorders as well as interventions for other behavioral issues were not a focus of these studies.

Methods

A number of systematic reviews have assessed the effectiveness of BHI in the primary care setting among patients with depression and/or anxiety disorders. Findings from these reviews indicate that integrating mental health into primary care improves mental health outcomes such as depression and anxiety, although the effects of integration are relatively modest.[65-86] Because of the wealth of prior systematic reviews, we elected to focus our assessment of key systematic reviews as well as an updated search of more recently-published literature (see below).

We focused on two large, higher-quality systematic reviews from AHRQ (2008)[65] and the Cochrane Collaboration (2006, 2012 update)[69,66] that matched our project scope: a) use of an intervention that matched one of the six levels of collaboration/integration in the SAMHSA framework (see Section 1.2), b) delivery of the intervention predominantly in the primary care setting, c) ≥50% of the population diagnosed with depression and/or anxiety disorders, and d) minimum of 6 months of follow-up in available studies.

We also conducted an updated systematic literature search using the search criteria from the 2012 Cochrane review[1] that covered the period from December 2013 to February 2015. The search identified additional publications from studies already identified in the AHRQ and Cochrane reviews but no new randomized trials.

The quality of individual studies was assessed by considering the domains listed below, which are adapted from AHRQ's methods guide:[87]

- Similarity of baseline characteristics and prognostic factors between comparison groups
- Well-described methods for randomization and concealment of treatment assignment
- Use of valid, well-described primary outcomes
- Blinding of subjects, providers, and outcome assessors

- Intent-to-treat analysis (all randomized subjects included)
- Limited and non-differential loss to follow-up
- Disclosure of any conflicts of interest

There was no way to blind participants to their group assignment in studies of integrated care. This is particularly important in studies of depression and anxiety because outcome assessment is subjective and in part based on patient report of symptoms. Thus, all of the studies have some risk for bias.

We used the ICER Evidence Rating Matrix to evaluate the evidence for the impact of integrated care on depression, anxiety, quality of life and other outcomes (ICER Evidence Rating Matrix).[88] The evidence rating reflects a joint judgment of two critical components:

a) The **magnitude** of the difference between a therapeutic agent and its comparator in "net health benefit" – the balance between clinical benefits and risks and/or adverse effects AND
b) The level of **certainty** in the best point estimate of net health benefit.

The matrix is depicted in graphic form as in Figure 4 on the next page.

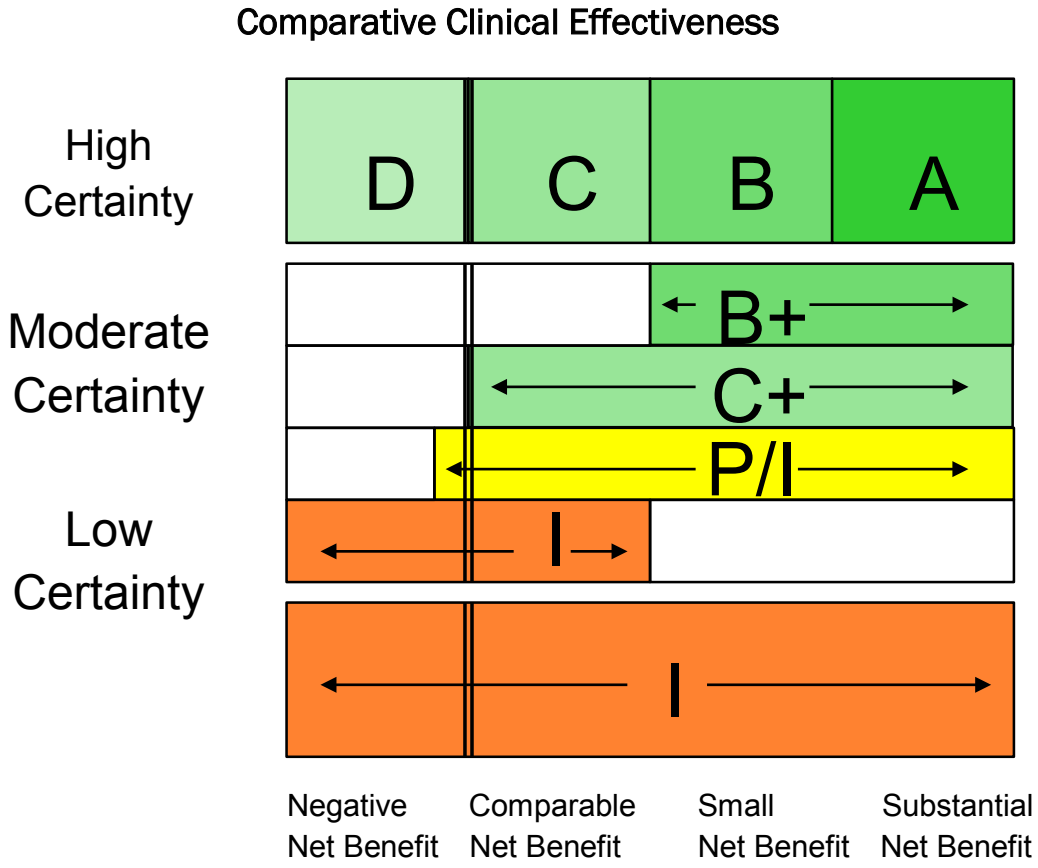
Results

We identified 94 studies of integrated care for mental health outcomes. The large majority evaluated integrated care in primary care clinics (83%, 78/94). Five studies were initiated in the hospital and managed outside of primary care (three for cardiac disease, two for trauma focusing on PTSD prevention). Eight studies evaluated integrated care in specialty clinics (four oncology, two neurology, one HIV, and one occupational health).

Cluster randomization was used in 24% of the studies (23/94). The remainder used simple randomization at the patient level. Most of the studies were done in the US (73%), but there were 10 studies from the United Kingdom (UK), five from the Netherlands, and three from Chile.

Integrated care focused solely on medication management in 38% of the studies, psychological therapy in 12% of the studies, and both were available but not used for all patients in 50% of the studies. The case manager had professional training in psychological care in 57% of the studies. The comparison group was usual care or enhanced usual care. Usual care was almost always coordinated care with separate locations for primary care and mental health and limited communication between the two. In some studies, there was systematic screening for depression or anxiety with notification of patients and/or their PCPs about the diagnosis. This is referred to as enhanced usual care.

Figure 4: ICER Evidence-Based Medicine (EBM) Matrix



A = "Superior" - High certainty of a substantial (moderate-large) net health benefit
B = "Incremental" - High certainty of a small net health benefit
C = "Comparable" - High certainty of a comparable net health benefit
D="Negative" - High certainty of an inferior net health benefit
B+="Incremental or Better" – Moderate certainty of a small net health benefit, with high certainty of at least incremental net health benefit
C+="Comparable or Better" - Moderate certainty of a comparable net health benefit, with high certainty of at least comparable net health benefit
P/I = "Promising but Inconclusive" - Moderate certainty of a small or substantial net health benefit, small (but nonzero) likelihood of a negative net health benefit
I = "Insufficient" – Either moderate certainty that the best point estimate of comparative net health benefit is comparable or inferior; or any situation in which the level of certainty in the evidence is low

The 2008 AHRQ review focused on randomized and high quality quasi-experimental design studies performed in the US.[65] For their review, AHRQ considered family physicians and general internists to be PCPs. Mental health specialists included psychiatrists, psychologists, social workers, and psychiatric nurses. AHRQ defined four levels of integrated care based on 1) the degree of shared decision-making between specialists and primary care, and 2) co-location of primary care and specialists. Their four categories, from least integrated to most, are: 1) PCP-directed care with specialist care offsite ("low" integration), 2) coordinated decision-making and off site specialty

services OR PCP-directed decision-making and on-site specialty services ("intermediate II" integration, 3) coordinated decision-making and on-site specialty services ("intermediate I" integration), and 4) consensus decision-making and on-site specialty services ("high" integration). While no formal crosswalk to the SAMHSA framework that is used in this assessment has been published, AHRQ's low integration roughly corresponds to SAMHSA level 1 (minimal collaboration), intermediate II integration corresponds to SAMHSA levels 2 and 3 (basic collaboration), intermediate I integration approximates SAMHSA level 4 (close collaboration/co-located care), and high integration represents SAMHSA levels 5 and 6 (integrated care).

The AHRQ review found substantial evidence that integrated care improved mental health outcomes. The bulk of the evidence was for depression, but integration also improved outcomes for patients with anxiety disorders. The studies reported that integrated care improved symptom severity, treatment response, and remission compared with usual care.

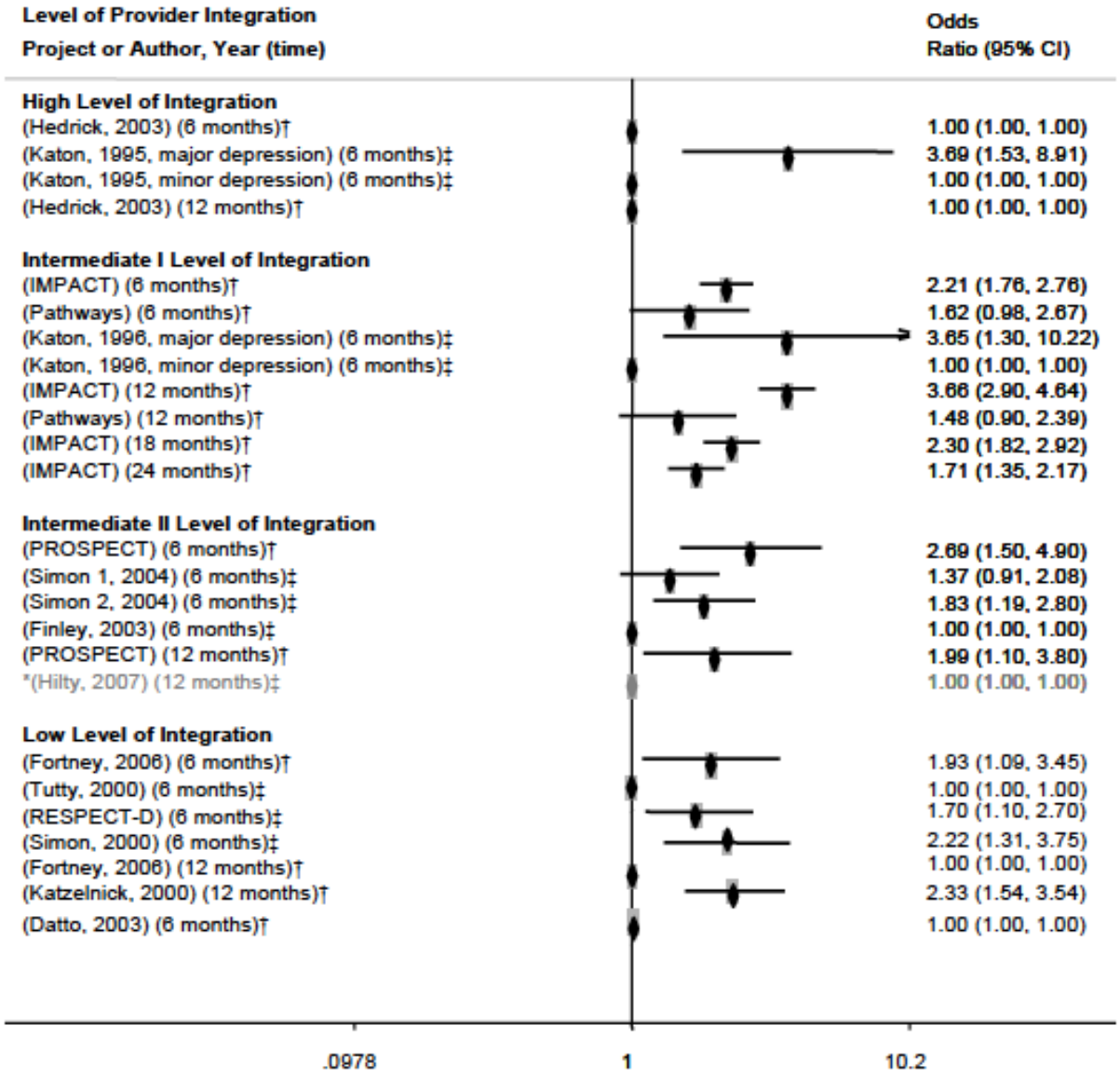
An earlier systematic review and meta-analysis of integrated care published in 2006 focused solely on depression.[69] The authors found strong evidence of benefit from 6 months to two years, and fewer studies, and weaker, though still significant benefit through 5 years of follow-up (see detailed findings in the sections that follow). They did not find evidence of publication bias. The Cochrane Collaboration published an updated systematic review of mental health integration into primary care in 2012.[66] Their search results demonstrate the depth and breadth of the literature on this topic. They identified 435 articles describing 79 randomized trials. The same group performed a more detailed meta-analysis focused on depression in order to identify factors associated with better outcomes.[73] The results of these new meta-analyses are described according to key outcomes of interest beginning on page 36.

Correlation Between Levels of Integration and Outcome

The vast majority of the intervention arms for the trials included in this assessment could be classified as SAMHSA co-located care (either basic collaboration on-site or close collaboration with some system integration), making comparisons to lower and/or higher levels of integration challenging. AHRQ's own approach to categorization of the intensity of integration based on the decision-making process and co-location of services (described above) found no correlation between the intensity of integration and the rates of depression response or remission.[65] Figure 5 from the AHRQ review, replicated on the next page, demonstrates graphically the lack of correlation between level of integration and treatment response.

In addition, there are no head-to-head trials directly comparing higher levels of integration to intermediate levels of integration. Thus, there is insufficient evidence to assess whether higher levels or intensity of integration offer incremental benefit.

Figure 5: Treatment Response by Level of Provider Integration



*Studies in grey indicate low quality
†Diagnosed patients—usual care
‡Patients initiating treatment—usual care
§Diagnosed—enhanced referral

Source: Butler, M et al. Integration of mental health/substance abuse and primary care. AHRQ Publication No. 009-E003. 2008[65]

Overall Impact of Integrated Care: Key Outcomes

1. Depression

As noted above, there are a large number of randomized trials of integrated care for depression. The 2006 cumulative meta-analysis estimated that the randomized trial evidence on the mental health benefits of integrated care over usual care was statistically significant by the year 2000.[74] Since then, at least 56 additional randomized trials have been published, the vast majority of which demonstrated improvements in depression outcomes with integrated care compared with usual care. Three of the larger trials are described in brief below, followed by the summary statistics from the meta-analysis.

The Partners in Care (PIC) trial was a large randomized trial that influenced subsequent trials of integrated care.[89] Forty-six primary care clinics in six US managed care organizations were randomized to either one of two quality improvement (QI) programs or usual care. The QI programs included training local experts and nurse specialists to provide clinician and patient education, identification of a pool of potentially depressed patients, and either nurses for medication follow-up or access to trained psychotherapists. Usual care included mailing practice guidelines for depression to providers. The QI-meds intervention focused on enhancing tools for supporting medical management of depression. The QI-therapy intervention focused on enhancing tools for providing cognitive behavioral therapy (CBT) for depression. Both aimed to increase the initiation of and adherence to antidepressant medications or psychotherapy. The two interventions were combined to test their primary hypothesis: that a QI program would improve depression quality of care and patient outcomes. Patients in QI (n = 913) and control (n = 443) clinics did not differ significantly at baseline in service use, quality of life, or employment. At 6 months, 50.9% of QI patients and 39.7% of controls had counseling or used antidepressant medication at an appropriate dosage (P<.001), with a similar pattern at 12 months (59.2% vs 50.1%; P = .006). There were no differences in probability of having any medical visit at any point (each P > or = .21). At 6 months, 47.5% of QI patients and 36.6% of controls had a medical visit for mental health problems (P = .001), and QI patients were more likely to see a mental health specialist at 6 months (39.8% vs 27.2%; P<.001) and at 12 months (29.1% vs 22.7%; P = .03). At 6 months, 39.9% of QI patients and 49.9% of controls still met criteria for probable depressive disorder (P = .001), with a similar pattern at 12 months (41.6% vs 51.2%; P = .005). Initially employed QI patients were more likely to be working at 12 months relative to controls (P = .05).

A second example is the IMPACT trial, which incorporated what was learned from the PIC trial and is the largest of the randomized trials.[90] It has become a resource for subsequent clinical trials and for organizations attempting to implement meaningful integrated mental health care (see website: http://impact-uw.org/about/). The study randomized 18 clinics and followed 1,801 depressed older adults for two years in the primary analysis. Depressed patients were identified either by their PCP

or through systematic screening using the PRIME-MD 2 question screening instrument.[27] The 18 participating clinics were associated with eight health care organizations in Washington, California, Texas, Indiana, and North Carolina and included health maintenance organizations (HMOs), traditional FFS clinics, an independent provider association, an inner-city public health clinic, and two VA clinics. Intervention patients had access for up to 12 months to a depression care manager who was supervised by a psychiatrist and a primary care expert. The care manager offered education, care management, and support of antidepressant management by the patient's PCP or brief psychotherapy for depression – Problem Solving Treatment in Primary Care (PST). The control group received enhanced usual care because patients were informed of their diagnosis and encouraged to seek treatment from their PCP. Depression scores using the symptom checklist 20[92] (SCL-20) in the intervention group declined from 1.68 at baseline to 0.99 at one year, and the score for those in the control group declined from 1.67 to 1.39 (p for between group differences < 0.001). The percentage of patients responding to treatment (at least a 50% reduction in depression score) was 45% in the intervention group and 19% in the control group (p<0.001).

Finally, the Quality Enhancement by Strategic Teaming (QuEST) trial randomized 12 clinics across the US that did not have mental health clinicians on site.[93] Clinics randomized to the intervention received a brief training program to two PCPs, one nurse, and one administrative staff member focused on the identification and management of major depression. Administrative staff at both the intervention and usual care sites screened patients for depression. Patients already on treatment were included in the study. In patients beginning a new treatment episode, their average depression score on the Center for Epidemiologic Studies – Depression (CES-D) scale[94] decreased from 55.1 to 33.4 in the intervention arm and from 52.7 to 39.2 in the usual care arm. Thus, the intervention improved depression symptoms by 8.2 points more than usual care (95% confidence interval [CI], 0.2 to 16.1; P =.04). Within this group, the intervention improved depression symptoms by 16.2 points (95% CI, 4.5 to 27.9; P =.007), physical role functioning by 14.1 points (95% CI, 1.1 to 29.2; P =.07), and satisfaction with care (P =.02) for patients who reported antidepressant medication was an acceptable treatment at baseline. In the QuEST study, patients already in treatment at enrollment did not benefit from the intervention.

The 79 studies identified for this assessment used many different validated tools to assess depression (e.g., HAM-D, CES-D, PHQ-9). In order to compare and combine the results across studies, the meta-analysis used an outcome called the standardized mean difference (SMD). This is a standard technique used in meta-analysis to provide a uniform statistic across all studies. The SMD is defined as the difference in the mean outcome between groups divided by the standard deviation in the outcome. In essence, it represents the number of standard deviation units that separate the means in the experimental and control groups in an individual study. The SMD in depression symptoms between integrated and usual care was 0.28 (95% CI 0.23 to 0.33) in the most recent meta-analysis.[73] There is no standard for interpreting the magnitude of the SMD, though some authors have proposed that an SMD of 0.2 is small, 0.5 is moderate and 0.8 is large.[95]

Using the ICER rating, our judgment is that there is high certainty of a small net benefit for integrated care in improving symptoms of depression compared with usual care. There is high certainty of benefit because in all of the larger, well done randomized trials, the p values for greater improvements in depression scores or depression remission are low (<0.001) and the findings are consistent in the smaller studies. However, the degree of improvement in depression for patients in the intervention group was only modestly greater than that of the usual care group (SMD < 0.3, less than half achieved remission).

2. Anxiety

Only seven studies focused on anxiety (7.4%). These included studies of single types of anxiety such as panic attacks or PTSD, as well as studies allowing all forms of anxiety disorders. The SMD for anxiety symptoms was 0.33 (95% CI 0.19-0.47). The confidence interval is relatively wide reflecting the lower number of studies and fewer patients with anxiety symptoms randomized in these trials.

An example of integrated care for anxiety is from the Coordinated Anxiety Learning and Management (CALM) study.[96] This study randomized 17 primary care clinics in four US cities to integrated care or usual care. The study followed 1,004 patients with anxiety disorders (with or without major depression) for 3 to 18 months. PCPs identified and referred patients to the study with the assistance of an optional 5-question screening tool for anxiety.[97] The CALM intervention, which was modeled on the IMPACT intervention, allowed patients the choice of CBT, medication, or both by non-expert care managers who also assisted primary care clinicians in promoting adherence and optimizing medications. By six months, a larger proportion of patients in the integrated care arm achieved a response (57% compared with 37%, p<0.001) or complete remission (43% compared with 27%, p<0.001). Both differences remained significant at 12 and 18 months (p<0.001 for all comparisons).

Overall, we judge there to be moderate certainty of a small net benefit for integrated care in improving symptoms of anxiety compared with usual care. There is moderate certainty of benefit because in the large, well done randomized trial, the p values for greater improvements in anxiety scores as well as anxiety response and remission are low (<0.001), but there are far fewer studies than for depression. The degree of improvement in anxiety for patients in the intervention group was only modestly greater than that of the usual care group, and less than half achieved remission.

3. Chronic Medical Conditions

There have been a large number of studies of the impact of integration of mental health services into primary care on diabetes outcomes. Most of the studies for other medical conditions, such as cardiovascular disease, evaluated and managed patients in the hospital or specialty clinics rather than in primary care.

Diabetes is very common in primary care, and many patients with diabetes also suffer from depression. There were sufficient published trials in 2014 to perform a meta-analysis of the trials of integrated care in patients with both depression and diabetes.[67] All of the studies identified patients with diabetes from registries or medical records. Two of the studies then selected patients currently on anti-depressant medication or diagnosed with depression in the past year. The remaining five screened the patients with diabetes for depression. Six of the seven studies were done in the US. As an example, in a high quality trial published in the New England Journal of Medicine (NEJM) by Katon and colleagues, the hemoglobin A1c decreased from 8.1% to 7.3% in the integrated care group and from 8.0% to 7.8% in the usual care group ($p<0.001$ for between group difference).[98] Patients in the integrated care group also had greater decreases in depression scores ($p<0.001$), LDL-cholesterol ($P<0.05$), and there was a trend towards a greater reduction in systolic blood pressure (between group difference of -3.4 mm Hg, 95% CI -6.9 to +0.1). Our updated search did not identify additional trials to add to this meta-analysis.

In the meta-analysis of the seven randomized trials, patients in the integrated care arms had significantly lower depression scores (SMD -0.32, 95% CI -0.11to -0.53) and lower hemoglobin A1c levels than patients in the usual care arms (-0.33%, 95% CI -0.66% to -0.0%).[67] However, there was significant heterogeneity across the trials for both outcomes ($p=0.001$).

We judge there to be low certainty of a small net benefit for integrated care in improving both diabetes control and depression compared with usual care in patients with both diagnoses. The level of certainty is low because of the small number of studies and the statistical heterogeneity of the results. In addition, the change in hemoglobin A1c was of borderline statistical significance. The magnitude of the benefit (change in hemoglobin A1c) was relatively small: this is less than half that expected with the addition of a single oral agent for type 2 diabetes. These differences may translate into improvements in the microvascular and macrovascular complications that decrease the quantity and quality of life for patients with diabetes, but there have been no studies of sufficient size or length to address those questions.

4. Quality of life

Many of the randomized trials of depression reported measures of quality of life. The most commonly used generic instrument was the Short Form 36 (SF36), which measures several domains including mental health and physical health.[99] Integrated care improved mental health quality of life more than usual care in the first 6 months, and those gains were preserved through 24 months (SMD 0.20-0.26).[66] The trend still favored integrated care beyond 24 months (SMD 0.10), but it was no longer statistically significant. There were no early improvements in physical health quality of life, but the differences became significant between 13 and 24 months (SMD 0.10, 95% CI 0.02 to 0.17).

We judge there to be high certainty of a small to moderate net benefit for integrated care in improving quality of life in the mental health domain compared with usual care. There is low certainty of a small net benefit for integrated care in improving quality of life in the physical health domain compared with usual care.

5. Patient satisfaction

Patients in the randomized trials included in the systematic review were generally more satisfied with integrated care.[66] In the 34 studies that assessed patient satisfaction, 22 reported statistically significant differences in favor of integrated care, 8 reported non-significant trends toward greater satisfaction, and 4 reported non-significant trends towards decreased satisfaction. Patients were typically asked about their satisfaction using a single question (24 studies). The remaining 10 studies used validated questionnaires on patient satisfaction, such as the Client Satisfaction Questionnaire or the Patient Evaluation of General Practice Care instrument. The size of the benefit was modest but highly statistically significant (SMD 0.31, 95% CI 0.13 to 0.49). One example from a large, well done trial is patient satisfaction with depression care as described for the IMPACT trial above in the section on depression outcomes.[90] Patients in the intervention arm of the IMPACT trial had greater overall satisfaction (76% reporting care as very good or excellent) compared with the control group (47%, $p<0.001$).

We judge there to be high certainty of a small to moderate net benefit for integrated care in improving patient satisfaction compared with usual care. The majority of studies reported significantly greater satisfaction with care (22/34, 65%), and the summary estimate from the meta-analysis was highly significant ($p<0.001$). However the differences between the integrated care groups and the usual care groups were not large (SMD 0.31).

Summary

There is a very large body of randomized trials evaluating the integration of mental health into primary care. Some models train existing staff to systematically screen for behavioral health issues, and others rely on PCPs to identify the patients. Most include some form of a care manager to ensure regular monitoring of patients for side effects and treatment response, but the level of training of the care managers varied across studies. Some interventions focused solely on anti-depressant medications, some on psychological interventions, and some used both forms of therapy. The studies generally compared interventions meeting the SAMHSA definition of co-located care with SAMHSA coordinated care. No studies compared SAMHSA integrated care with co-located care. These studies of different models of integration across widely varying delivery systems demonstrate with great consistency that integrated care improves depression and anxiety outcomes, although the absolute benefits are only small to modest. Furthermore, integrated care

improves patient quality of life and satisfaction with care. There is inadequate evidence to assess whether greater integration would lead to larger improvements in outcomes.

7.2 Components of BHI Associated with Treatment Success

Methods

Research on the impact of individual components of BHI on depression-related or other health outcomes is extremely limited. Moreover, efforts to quantitatively measure the relative contribution of each program component may be confounded by lack of detail or poor reporting (e.g., missing baseline clinical characteristics, lack of data on contact or session frequency), as well as overarching concerns of publication bias—the tendency to publish only studies with positive findings. Nevertheless, Coventry and colleagues conducted a recent meta-regression of factors of collaborative care associated with improvement in depressive symptoms and use of anti-depression medication in 74 RCTs.[73] In univariable analyses, factors statistically-significantly ($p<0.05$) associated with improvement in depressive symptoms included recruitment method (systematic screening vs. clinician referral), presence of a chronic physical condition, inclusion of a structured psychological intervention alone or in combination with medication management (e.g., behavioral activation, problem solving), and scheduled (vs. ad-hoc) supervision of care coordination. However, only the presence of a structured psychological component (which occurred over 2-21 scheduled sessions, depending on the study and module used) remained significant in a multivariable model ($p=.03$).

To complement Coventry et al.'s approach, we conducted an analysis of the factors of integrated care most frequently reported in studies with successful outcomes. We began our search with the 33 randomized clinical trials evaluated in the 2008 AHRQ review.[65] In their review, the authors distilled the various characteristics of integration programs into summary tables. Trials that incorporated more than one intervention arm were analyzed separately according to each arm's model of integrated care. From the original 33 trials, we eliminated studies that had less than six months of follow-up, included a majority of patients with mental health disorders other than anxiety or depression, included adolescent study populations, or did not a show a statistically-significant impact of integration on health outcomes relative to limited interventions or usual care. Treatment success was primarily related to improvements in mental functioning scores according to validated instruments (e.g., World Health Organization Disability Scale, Hamilton Depression Rating Scale), and/or improved medication adherence. After application of all entry criteria, a total of 29 studies remained from the original AHRQ sample, encompassing 31 models of integrated care (two of which had two intervention arms with different program components).

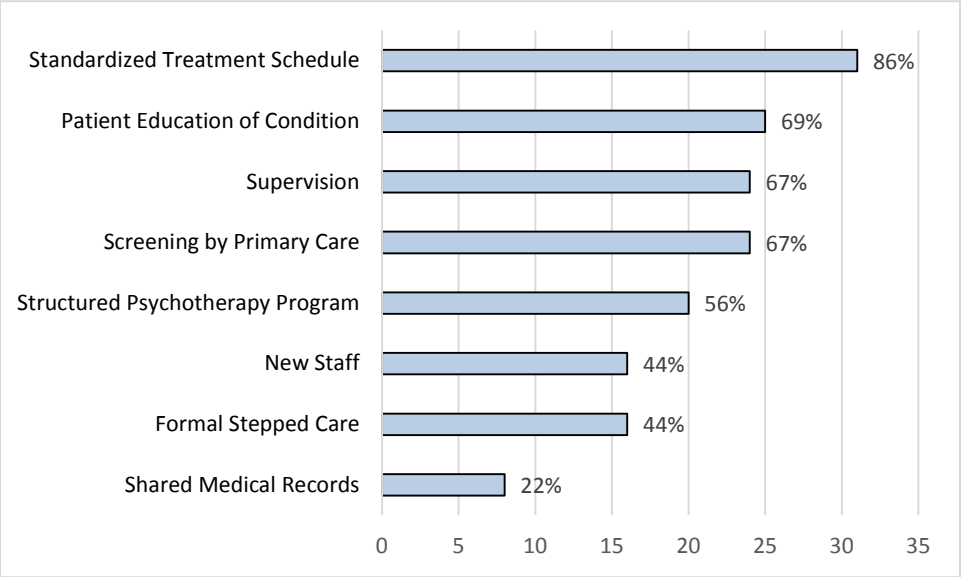
We reviewed these studies, as well as studies recommended in a list of relevant literature in a 2010 AHRQ paper discussing additional research needs on this topic.[71] Finally, a manual search of recent papers co-authored by the primary investigators of the original studies examined in the 2008 AHRQ review was also performed. We identified an additional five studies meeting all entry criteria and with positive findings from these channels, for an overall total of 34 studies of 36 models of integrated care.

Study Findings

We identified 36 models of integrated care that reported statistically-significant improvements in one or more primary outcomes of interest, such as sustained improvement in depression or anxiety symptoms, likelihood of receipt of antidepressant therapy, and medication adherence. The most common program component across successful models was inclusion of a standardized care coordination plan that involved regular interaction with both patient and physician (86%), followed by formal patient education at 69%. Both supervision of care coordinators and systematic screening in primary care were included in two-thirds of successful models, while inclusion of a standardized schedule of psychotherapy appeared in approximately half. The addition of new dedicated staff, presence of formalized stepped care plans, and use of shared medical records were the least common program components. Only two models[100,101] included all eight components.

We identified 36 models of integrated care that reported statistically-significant improvements in one or more primary outcomes of interest, such as sustained improvement in depression or anxiety symptoms, likelihood of receipt of antidepressant therapy, and medication adherence. Figure 6 on the next page presents the discrete program components that we identified in available studies and the frequency with which they were reported in studies with successful outcomes. In descending order of frequency, these components included a standardized care coordination plan (i.e., scheduled interaction between a care coordinator and the patient, scheduled feedback to the clinical care team), provision of patient education of a diagnosed behavioral health condition, supervision of care coordinators, systematic screening to identify patients with behavioral health conditions in the primary care setting, availability of a structured psychotherapy program featuring a standardized schedule within the primary care setting, hiring new staff dedicated to the integration effort, formal stepped care (i.e., a protocol for care in which treatment is adjusted according to a patient's response), and shared medical records (i.e., a common information system for participating providers to track a patient's progress). A detailed examination of each of these eight components can be found in the sections that follow.

Figure 6. Number and Frequency of Studies Identifying Selected Key Components of Integration



Standardized Care Coordination Plan

The most common program component found in 31 (86%) models of integrated care was a standardized protocol for interacting with patients following their initial visit. These 31 models reported having a treatment schedule in which care managers or other health care professionals, including pharmacists, nurses, or licensed therapists, had regular contact with patients about their progress. These encounters were frequently conducted via telephone, though in-person appointments were also provided depending on the patient's response to treatment.[102] In addition to reassessing a patient's condition, patients were sometimes given homework assignments to encourage them to remain active in their treatment.[93] Other programs advocated self-monitoring and allowed patients to determine their level of interaction and duration of participation according to their individualized need.[103,104] The details of these meetings were shared either formally or informally with other members of the patient's care team and often were entered into EHR databases. Direct contact with the PCP was somewhat less common, with the exception of situations where patients were not responding to therapy.[105,106] Across all models, the duration of these scheduled sessions ranged from eight weeks to one year and varied in contact frequency, though the rate of encounters generally decreased over time as the patient's condition improved and they entered a maintenance phase of care.[107,108]

Patient Education of Condition

Twenty-five (69%) of the 36 models of integrated care we reviewed included a patient education component. While detailed descriptions of the particular elements of each patient education program were limited, the timing, delivery, and content of such programs have some commonalities. Education was most often delivered through educational materials distributed to

patients or through interaction with a care manager or therapist. Educational materials consisted of pamphlets, videotapes, and workbooks. These materials described the biology of a particular behavioral health condition, physical and emotional symptoms of the condition, time course and effectiveness of medication, the potential adverse effects of medication, and how both psychotherapy and medication could improve health outcomes. Education typically occurred before or during the initial phases of care, although one study specified that education was emphasized during each contact point with a patient.[109]

Supervision

The reporting of supervision of staff assigned to coordinate the physical and mental health needs of patients, which was most often a care manager, was included in 24 (67%) models. In almost all models, this role was filled by a psychiatrist, even when the individual was not onsite. One program[104] had an offsite clinical psychologist acting as a supervisor to nurses, with weekly check-ins by telephone and one onsite visit per month. In the QuEST intervention, which sought to make only minor changes in primary care clinics to improve care for patients with major depression, the PCP supervised the clinic nurses.[93] Neither of these programs employed a care manager or mental health professional on site. Another program,[127] which was based on the Wagner chronic care model,[110] utilized a team of medical professionals that included a psychiatrist, psychologist, internist, and family practitioner all acting in a supervisory capacity to the care manager.

Screening by Primary Care

Despite an emphasis on systematic screening for depression in primary care as a central component of integration, such screening was only performed in 24 (67%) of 36 successful integrated models. Other methods of identification included searches of medical databases, pharmacy records, or patient registries.[111] Interventions that did perform systematic screening typically cited a validated screening tool (e.g., PRIME-MD) as the method of case identification. Those conducted at VA sites had an initial assessment by a PCP,[112,113,100] likely due to both the influence of the IMPACT intervention,[90,101] in which PCPs screened participants for core depression symptoms in a baseline interview prior to providing treatment, and a high prevalence of mental health issues in VA patients. Screening appears to have been put in place in these programs primarily to identify patients with mental health conditions who are also high utilizers of health care generally.[114,115] However, as noted in the AHRQ review, systematic screening is only one of many elements to improve patient care, and screening alone has been shown to be ineffective in improving outcomes.[65]

Structured Psychotherapy Program

There were 20 (56%) models of BHI that incorporated some form of standardized and scheduled psychotherapy into care delivery for all identified patients. These programs varied in methodology and number of sessions. Organizations that implemented variations of the IMPACT model, for example, followed a six-to-eight session model of psychotherapy developed in the United Kingdom, known as Problem Solving Therapy for Primary Care (PST-PC).[103,116-118] Other interventions used structured CBT,[111,119-124] or cognitive processing therapy.[125] In the TEAMcare model, patients received a less formal method of psychotherapy through "motivational and encouraging coaching" in which nurses helped patients solve problems and improve both medication adherence and self-care.[98] Two models of integration that were reviewed did not directly offer psychotherapy as an integral part of primary care but instead provided a "warm hand-off"[126] or "assisted referral"[127] for identified patients.

In some models where structured psychotherapy was made available, patients could decide whether or not to receive the therapy after consulting with the care team. For example, in the Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) model, Partners in Care (PIC) model (medication arm), and the model implemented by Price and colleagues, treatment options were discussed and decided upon in collaboration with patients.[120,122,128] Likewise, the IMPACT model recommended psychotherapy to patients according to their preferences and response to antidepressant medications.[116]

Therapy was completely or partially administered by telephone[118,104,129,123,111,119] or interactive video conference[125] in several of the integrated models reviewed. One of these programs[123] provided six half-hour cognitive-behavioral sessions delivered over the telephone by a master's-level therapist trained in counseling psychology. Another model, from the Collaborative Care for Anxiety and Panic (CCAP) study, allowed patients who completed at least three CBT sessions in person to receive subsequent sessions over the telephone. In addition, patients received "booster sessions" over the telephone "to monitor clinical status, reinforce proper medication use and cognitive-behavioral skills, and make further medication recommendations if necessary."[119]

Psychotherapy sessions were delivered by a range of mental health professionals with various levels of experience and education. These were most often administered by individuals acting as care managers or behavioral health specialists, including psychologists, social workers, and nurses who had a master's- or doctoral-level academic degree.[103,111,117,129-131]

New Staff

We identified 16 (44%) programs in which new personnel were incorporated into and dedicated to the integrated care model[65]; the remainder focused on retraining existing staff or did not provide

detail on this component. The interventions that reported hiring new staff often did not specify the number or type of new staff members that were recruited, but many described the addition of a care manager position to the program. Care managers' roles included helping PCPs recognize behavioral health conditions, offering recommendations for treatment, monitoring symptoms and medication side effects, delivering psychotherapy, and following up with patients.[130] As noted by Butler et al., prior experience, education level, and training requirements of care managers varied extensively across care models, with some programs employing nurses or other medical professionals with limited mental health experience, and others appointing care managers with master's- or doctoral-level degrees in a mental health field.[65]

Formal Stepped Care

The concept of formal stepped care introduces evidence-based protocols for treating patients that come from a variety of different clinical backgrounds. These formalized practices were identified in less than half (44%) of the integrated models. Programs based on the chronic care model were more likely to incorporate a stepped-care treatment algorithm based on treatment guidelines for depression in primary care settings; these were used to allow physicians and mental health providers to establish a treatment plan based on individualized patient needs.[116] Stepped care approaches were included in several models, including IMPACT, PROSPECT, Pathways, and QuEST, and were primarily concerned with treating critical patient subpopulations with co-occurring depression, such as the elderly[101,128] and those with diabetes.[115] The use of evidence-based stepped care approaches was also employed to measure patients' response to treatment in settings where there was no mental health provider on the integrated care team.[93]

Shared Medical Records

We found only eight (22%) models of successful integrated care that reported using shared medical records. Programs that did share medical records primarily reported using EHRs to facilitate collaboration between members of the care team. For example, an offsite care team supported PTSD treatment delivered by community-based outpatient clinics (CBOCs) using EHRs in the Telemedicine Outreach for PTSD (TOP) model.[125] In this model, EHRs were used to recruit PTSD patients, provide feedback and treatment recommendations to CBOC providers, assess adherence to the medication regimen, determine receipt of cognitive processing therapy and psychiatric care, and evaluate therapist fidelity to the cognitive processing therapy protocol.

Shared medical records were also used to foster communication between providers. For example, the Internet-based system used in the IMPACT model reminded depression clinical specialists if enrolled patients had not yet received an initial assessment, if more than three weeks passed without a recorded contact with a patient, and if a patient had spent more than 12 weeks on "apparently ineffective treatment."[116] The Internet-based system also ensured that intervention

records were available to clinicians and study investigators in "real time."[116] Another program used computerized charts to inform the PCP of medication changes by the pharmacist and record PCP interventions.[106] PCPs who participated in the Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) study documented their role in each patient's care in the medical record and used this medium to communicate with mental health and substance use staff.[132]

Integrated clinics administered by the VA have also reported EHRs to be important mechanisms for improving communication between team members. For example, in a study by Hedrick and colleagues[100], providers were notified of patient diagnoses and progress via their electronic records. Similarly, in the Telemedicine-Enhanced Antidepressant Management (TEAM) program, small rural primary care practices used telemedicine technologies (e.g., telephone, interactive video, the VA's Computerized Patient Record System, and the Internet) to facilitate communication between a centrally located depression care team and primary care providers.[112]

8. Comparative Value of BHI

Nearly all RCT-based economic evaluations published in the last 15 years have shown BHI to be more effective than usual care, but also more costly over 6 months – 2 years. Offsetting reductions in health care costs, when shown, have primarily occurred with specialty mental health services and in inpatient/emergency department care for specific subpopulations (e.g., patients with diabetes). Longer-term studies have demonstrated the potential for cost-neutrality or even overall cost savings, but these are relatively few in number and subject to quality concerns in some instances.

Nevertheless, evaluations of the cost-effectiveness of BHI have uniformly produced estimates that meet generally-accepted thresholds for cost-effective interventions in the US ($15,000 - $80,000 per quality-adjusted life year gained vs. usual care). In addition, while there may be substantial incremental start-up and ongoing costs for BHI in any given setting, many would argue that the increased reimbursement to cover the implementation of BHI represents an investment in primary care that is necessary and long overdue.

As noted in this review, the integration of behavioral health into primary care practice can take many forms, which differ according to the level or type of integration, the types of staff involved, introduction of new infrastructure and services vs. extension of existing resources, and many other components. Because of this variability, we felt that development of a detailed economic model exploring the budgetary impact and/or cost-effectiveness of any one approach would have little validity for providers and policymakers who are interested in integration but not yet certain of the best approach for their organization. We did, however, estimate the PMPM budgetary impact of implementing BHI in an individual ACO based on assumed levels of implementation costs and ongoing "steady-state" costs over one year.

Instead, we focused our assessment of the comparative value of BHI primarily through a detailed analysis of the available literature on the economic impact of BHI in primary care for the treatment of depression and/or anxiety in Section 8.1; we focus attention not only on the primary findings of these studies but also on the differential impact of BHI in certain subgroups of patients, key drivers of economic impact, and any trends in comparative value over time. We also call attention to major design considerations and/or quality issues in these economic evaluations.

We also recognize, however, that organizations considering integrating behavioral health into primary care require comprehensive guidance on staffing levels, planning and other start-up costs, and ongoing costs to manage an integrated approach. While this type of detailed information is notably absent from the current published literature, there are publicly-available resources that do provide such guidance, and these resources are summarized in Section 8.2.

Finally, while the formula for estimating start-up and ongoing practice costs is highly individual to each organization, we nevertheless conducted a budgetary impact analysis from the perspective of a large California ACO to illustrate the potential expenditures involved over a one-year start-up and roll-out period. The results of these analyses are in Section 8.3.

8.1 Prior Published Evidence on Comparative Value

Our literature search identified four higher-quality systematic reviews that focused specifically on the costs, budgetary impact, and/or cost-effectiveness of various approaches to integrating behavioral health into primary care specifically for patients with depressive and/or anxiety disorders.[113,74,81,84] While there is overlap between these reviews in the studies included, each review takes a somewhat unique approach to evaluating the evidence, so we have summarized each review and noted the distinctions between them in the sections that follow. In addition, findings from individual studies both within and outside the scope of these reviews are also summarized for their notable distinctive features (e.g., long-term follow-up, data on specific subgroups).

Neumeyer-Gromen et al., 2004

This review involved an assessment of 10 RCTs published between 1995 and 2002 that compared broadly-defined collaborative care and disease management programs for depression to usual care, eight of which were conducted at managed care organizations in the US.[81] Interventions were required to a) use evidence-based treatment guidelines, b) have both provider and patient educational components, c) use population-based screening for case identification, and d) include routine reporting and feedback loops for members of the care team. Usual care involved clinical identification of cases and traditional referral to specialty mental health; provider education and treatment guidelines were included in the usual-care condition in some studies. A meta-analysis of clinical data from these studies indicated statistically-significant reductions in the likelihood of treatment failure (i.e., failure to achieve ≥50% improvement in depressive symptoms; rate ratio [RR] 0.75; 95% CI 0.70, 0.81) and in discontinuation of antidepressant therapy at 90 days (RR 0.59; 95% CI 0.46, 0.75) over periods of follow-up ranging from 5-24 months.

Six of the 10 RCTs involved an economic evaluation. All studies showed higher overall costs for integrated care vs. usual-care control. Five of the six presented results in terms of the incremental cost per quality-adjusted life year (QALY) gained; the remaining study calculated a cost per successfully treated patient (≥50% improvement in depressive symptoms).[134] Study details and cost-effectiveness findings are presented in Table 3 below; we updated costs to 2014 levels for each study using the medical care component of the US Consumer Price Index.[135] A range of results is presented for each study; this is because each study assessed either a range of estimates for depression's impact on health-related quality-of-life, different variants of the intervention (e.g.,

integrated care + medication vs. integrated care + psychotherapy), different subgroups of patients (major vs. minor depression), or all three. Incremental costs varied from $20 - $3,900 per patient; this wide range can be explained in part by differences in the types of cost included in each evaluation. For example, four of six studies did not include inpatient costs in their estimates of the total costs of care, and despite the measurement of lost work time due to depression in most studies, only three of the six included any measurement of indirect costs in their calculations.

Estimates of cost-effectiveness also ranged widely (between $15,000 and $80,000 per QALY gained in 2014 dollars) but were nevertheless within widely-published thresholds for cost-effectiveness in US settings ($50,000-$100,000 per QALY gained). In addition to differences in cost calculations as described above, cost-effectiveness estimates were influenced by variability in intervention effect across studies as well as a broad range of assumed reductions in quality of life for a year with depression (between 0.2 and 0.4, or losses of 73 to 146 days due to depression).

Table 3. Studies Reporting Cost-effectiveness of Integrated vs. Usual Care for Depression in Neumeyer-Gromen, 2004

Author, Year	Sample Size	Incremental Costs of Integrated Care (2014 $/Patient)	Cost per QALY Gained (2014 $)
Lave, 1998[136]	276		
+Medication		$1,328 – $1,494	$16,292 - $30,802
+Psychotherapy		$1,521 - $1,960	$27,644 - $61,144
Simon, 2001 (a)[137]	407	$1,603 - $3,935	$35,200 - $79,200
Simon, 2001 (b)[138]	228	$568 - $929	$31,302 - $62,605
Schoenbaum, 2001[139]	1,356		
+Medication		$666	$24,530 - $58,347
+Psychotherapy		$771	$15,165 - $34,365
Simon, 2002[140]	386	$20 - $412	$32,475 - $65,700

Source: Neumeyer-Gromen A, et al. Disease management programs for depression: a systematic review and meta-analysis of randomized controlled trials. Medical Care, 2004:42(12)1211-1221.[82]

In the study by Von Korff (1998), estimates of the incremental cost of BHI per successfully treated patient with major depression ranged from $1,688 - $2,850 in 2014 dollars (BHI appeared to be clinically inferior in patients with minor or "subthreshold" depression). This study also showed a small (~$160) average reduction in the costs of specialty mental health visits for integrated vs. usual care, but this was outweighed by increases in the costs of medications and behavioral interventions in primary care. In fact, of the five additional studies in the table, only two showed offsets in any other category of cost. In an evaluation of 228 patients with persistent depressive symptoms,[138] an approximate $100 reduction in the costs of non-mental health services was observed with integrated care; however, total outpatient costs were increased by ~$250 due to higher mental health costs. A study of BHI for relapse prevention in 386 previously-treated patients showed

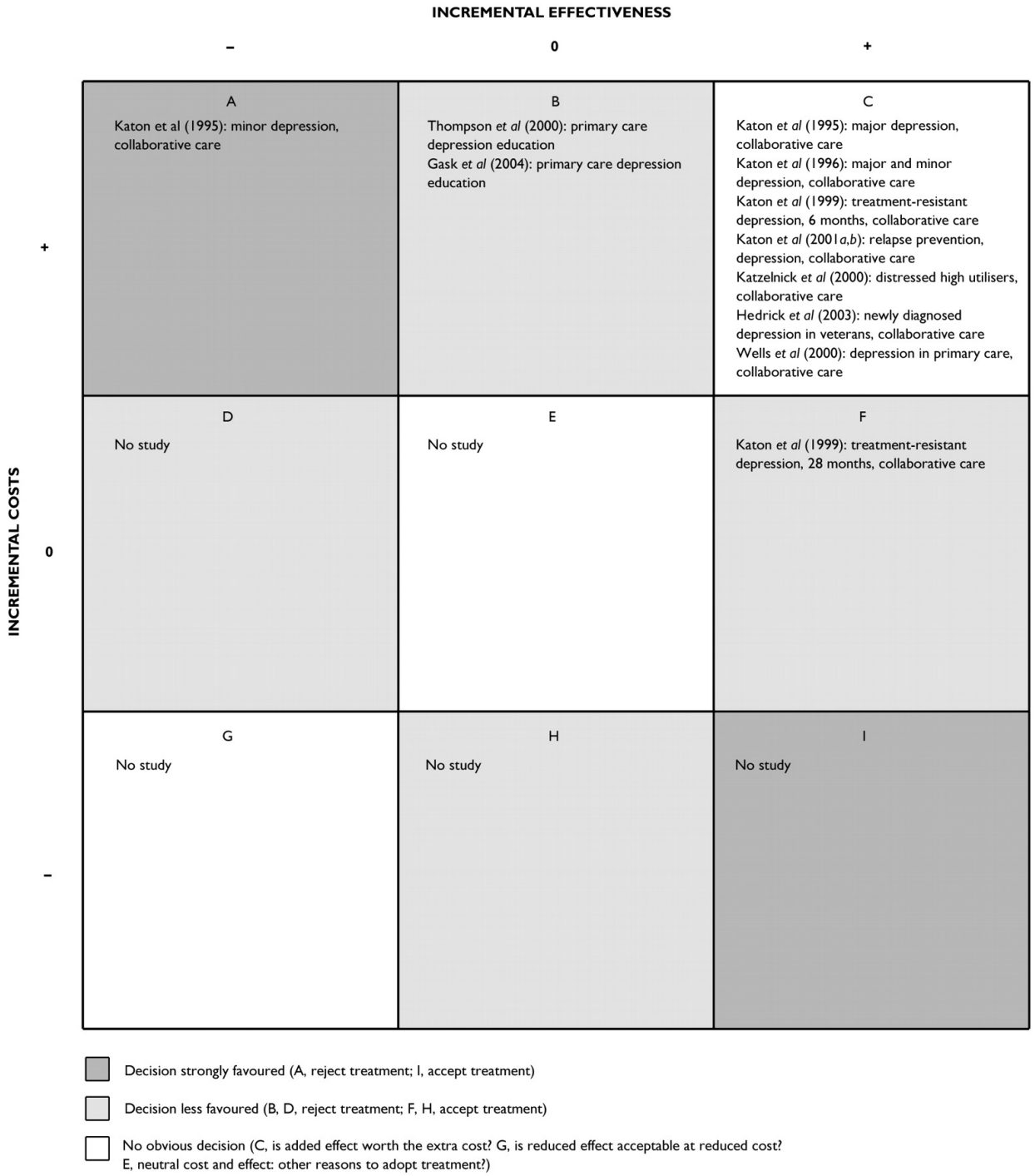
reductions in the cost of non-mental health services (~$60 on average) and all inpatient care (~$150), but these were subject to wide confidence intervals and the authors focused primarily on the increased costs of depression-related treatment in the intervention group.[140]

Finally, of note in these studies (and among most of the studies summarized in this section), it is likely that estimates of incremental costs are conservative because the full costs of implementing the intervention are not accounted for or not reported in sufficient detail. For example, while most of the studies presented the costs of delivering integrated care in sufficient detail, inclusion of the costs of practice-wide screening are mentioned in only two of the six studies in this review. In addition, despite the fact that these RCTs were tests of novel interventions for integrated care, the costs of planning, infrastructure changes, and implementation were not mentioned in *any* study.

Gilbody et al., 2006

This evaluation involved an assessment of a broad array of economic evaluations (including cost-benefit, cost-effectiveness, and cost-minimization analyses) of collaborative care or care management models.[74] Studies had to include a discrete educational intervention, a structural change or reconfiguration of roles with primary care, or a case management/active follow-up component, and be based on data obtained from a randomized study. Quality criteria specific to economic evaluations were also applied. For example, studies that did not use a well-accepted method for generating confidence intervals around estimates of economic impact (e.g., bootstrapping) were excluded. A total of 11 reports of economic evaluations were identified, including five of the six studies included in the Neumeyer-Gromen review (the Lave 1998 study was excluded for multiple reasons, including quality concerns and lack of active case management). As with the Neumeyer-Gromen review, no study produced cost estimates indicating that BHI was both more effective and less costly than usual care. Figure 7 on the next page presents a "permutation matrix" illustrating this finding. Two studies of an intervention that consisted of clinician education efforts alone showed no clinical benefit and higher costs vs. usual care.[141,142] The previously-described Von Korff evaluation (which was based on RCT data from Katon, 1995) illustrated that BHI for minor or subthreshold depression is both more costly and less effective. Finally, a longer-term follow-up of an above-described intervention for persistent depression[138] showed durable clinical benefits at 28 months and cost-neutrality – no statistically-significant differences in depression-related costs, all outpatient costs, or total health care costs between the BHI intervention and usual care.[102,143] All remaining evaluations produced evidence of incremental benefit and increased costs for BHI vs. usual care.

Figure 7. "Permutation Matrix" of Incremental Effectiveness and Incremental Cost



Source: Gilbody S, Bower P, Whitty P. Costs and consequences of enhanced primary care for depression. *Br J Psych* 2006; 189:297-308. [175]

Estimates of the incremental cost per depression-free day ranged relatively narrowly from $17 to $32 (2014 dollars) across available studies. Beyond those summarized in the Neumeyer-Gromen review, the only additional study to estimate the incremental cost per QALY gained was an

evaluation of a nurse-delivered case management approach in 211 patients with newly-diagnosed depression.[144] Cost-effectiveness was estimated to be $22,529 per QALY gained (2014 dollars); acceptability-curve analyses conducted at the time indicated a 91% probability that cost-effectiveness would be less than $50,000 per QALY gained.

van Steenbergen-Weijenburg, 2010

This review focused attention on eight economic evaluations of data from RCTs of collaborative care interventions that involved systematic and planned approaches to "stepped care" for depression in primary care (i.e., increased intensity of services for patients who screen positive).[84] The review is also notable for its use of a detailed published checklist for the quality of economic evaluations known as the Consensus on Health Economic Criteria (CHEC) list,[185] which consists of 19 yes/no questions within the following domains:

- Study design (e.g., target population, time horizon, perspective adopted, treatment alternatives of interest)
- Capture and appropriate measurement of relevant costs
- Capture and appropriate valuation of health outcomes
- Analytic approach (e.g., discounting, incremental comparisons)
- Assessment of uncertainty
- Reporting issues (e.g., generalizability, conflicts of interest)

Five of the eight studies were also included in one or both of the reviews from Gilbody and Neumeyer-Gromen. The three additional studies included a 6-month assessment of group-based BHI among 240 adult women with depression in Chile,[146] and two evaluations of RCT data from two separate trials (N=1,801 and 329 respectively) of depressed patients with diabetes.[147,148] Both of the latter studies were conducted in US settings, were based on the University of Washington's IMPACT model, and followed patients for 24 months. Findings from the Chilean evaluation are difficult to generalize because the costs of health care services are valued very differently so are not discussed further here. In the larger IMPACT evaluation focused on patients age >60, total outpatient and overall health care costs were increased by $395 and $926 respectively (2014 dollars) for the intervention relative to usual care; the cost per QALY gained (in 2014 dollars) ranged from $3,376 - $6,750 based on a range of assumed quality-of-life impacts from depression.[147] A time trend analysis suggested that the intervention was associated with reductions in total outpatient costs after 12 months of follow-up, but the impact on overall health care costs was not assessed.[147]

A more detailed assessment of this trend was included in the other IMPACT evaluation.[148] Total depression-related and unrelated outpatient costs were similar between the intervention and usual care in the first year (approximately $9,200 [2014 dollars] per patient in each group) but were reduced by over $1,700 in the intervention group in the second year; on average, 2-year costs were

reduced by approximately $1,100 and $370 in the intervention group before and after adjustment for baseline differences between groups. Reductions were driven primarily by lower costs for drugs other than antidepressants, specialty medical visits, and diagnostic services. However, as with the Katon evaluation, the impact on overall health care costs was not measured. Also, as with many of the other evaluations in these reviews, intervention costs were focused primarily on the costs of delivering services and did not appear to include practice-wide or other fixed costs associated with planning, implementation, or screening.

Across all studies, the quality of available economic evaluations was found to be lacking; the highest score observed on the CHEC list was 10 (out of 19 possible items). Most studies lacked any systematic approach to conducting sensitivity analyses for variables subject to high levels of uncertainty. Only four of the eight studies presented results using generally-accepted incremental methods and measures (e.g., cost per QALY). Studies were inconsistent in the perspective adopted, and while many studies measured lost productivity and time in treatment as outcomes, their associated costs were often not reported. Finally, the durability of intervention effects was largely unknown due to the within-RCT nature of these evaluations (i.e., maximum follow-up of 24 months).

<u>de Bruin, 2011</u>

This review focused on 31 studies of disease management programs for diabetes, depression, heart failure, and chronic obstructive pulmonary disease; the Wagner chronic care model was used to search for appropriate programs.[133] Four RCT-based economic evaluations in depression were identified; one was a subset analysis of the IMPACT trial for late-life depression at sites with 4-year trial data available.[149] The other three were reported only in this review and included a pharmacist-led intervention,[150] a telephone-based collaborative care program,[151] and an economic evaluation of Partners in Care (PIC), an educational and nurse-support intervention studied at six managed care organizations in the US.[152]

The pharmacist intervention was used in a 6-month RCT of 151 patients.[150] However, 6-month follow-up data were only available for 88 patients (58%); incremental costs of the intervention averaged $604. However, the study found no statistically-significant improvements in either depression symptoms or medication adherence, so the incremental costs were deemed not worthy of investment by the authors. The PIC intervention was found to increase total health care costs by an average of $1,122 (2014 dollars) in patients with major depressive disorder[152]; no detail was provided on individual cost components, however. The corresponding cost-effectiveness ratio (in 2014 dollars) was $66,070 per QALY gained based on utility data derived from the Short Form (SF) 12 instrument. Incremental costs were much lower in patients with subthreshold depression ($46 on average in 2014 dollars), as was the resulting cost-effectiveness ratio ($2,494 per QALY gained). Of note, however, the study organizers covered 50% of the costs of intervention development and delivery, so estimates of incremental cost are likely understated.

The Simon study randomized 600 patients at Group Health Cooperative to usual care, telephone care management, or telephone care management plus short-course CBT over 24 months of follow-up.[151] Adjusted outpatient costs controlling for age, sex, and baseline costs were $784 and $461 higher for telephone management and telephone management plus psychotherapy respectively vs. usual care (2014 dollars). Unadjusted inpatient costs were tallied but were not included in multivariate analyses because of their substantial variability.

The final evaluation in this set was a 4-year study of the effects of the IMPACT intervention[147] at sites with cost data available over this timeframe.[149] The intervention was found to reduce total health care costs by $4,035 (2014 dollars) on average; reductions were seen in every cost category but were driven primarily by lower inpatient costs ($3,093). Temporal analyses also suggested that the cost savings occurred entirely in years 3 and 4 of the evaluation. However, the intervention itself was only one year in duration, and no long-term assessment of clinical outcomes was conducted; it is therefore impossible to ascribe cost differences definitively to a persistent treatment effect.

Other Studies

An RCT of "enhanced care management" involving care coordinators working with primary care physicians and mental health providers at different sites was not included in the above reviews for unknown reasons.[153] This study randomized 12 primary care practices to the intervention or usual care; 73% of the initial patient sample (n=211) was available for 24-month follow-up. Total costs (including intervention, outpatient, and patient time and transportation) were $657 higher in the first year of the evaluation but $27 lower in the second year (2014 dollars). Cost-effectiveness estimates ranged from $12,853 per QALY gained when generic costs for antidepressants were assumed to $19,170 per QALY gained when brand costs were assumed (2014 dollars). This study was also notable for its detailed accounting estimates of screening and intervention workflow, as illustrated in Table 4 on the following page. Interestingly, the screening tool is described in the study as a "2-stage instrument", but the accounting estimates suggest that the office assistant spent no more than three minutes per screen.

Observational studies have also shown promising results, but design and analysis challenges limit their applicability. For example, a quasi-experimental comparison of 1,225 patients treated for depression at Intermountain Healthcare's integrated and non-integrated clinics[154] indicated a smaller increase in costs between the 12 months before and after diagnosis for integrated care ($812 vs. $1,559 for usual care, 2014 dollars). However, the pre-diagnosis costs in the usual-care cohort were nearly 20% higher than those in the intervention group, a difference that was not controlled for in the analysis. In addition, the analysis was restricted to health plan payments, so there was no way to know what the incremental costs of delivering integrated care were.

Table 4. Example of Accounting Approach to Estimating Costs of Delivering BHI

Table 1. Derivation of per Capita Program Costs (Nonadjusted)

Activity	Time	Cost per Hour $	Mean per Capita Cost $
Office assistant screening	.050 hr per screening test × 5,838 screening tests / 115*	13.91	35.28
Care manager preparation	.115 hr per contact × 11.8 contacts	24.40	33.11
Care manager contacts	.210 hr per contact × 11.8 contacts	24.40	60.46
Care manager record keeping	.165 hr per contact × 11.8 contacts	24.40	47.51
Physician review of care manager's records	.550 hr	85.51	47.03
Care manager communication with physician	.216 hr	24.40	5.27
Physician communication with care manager	.216 hr	85.51	18.47
Overhead	30% of above costs		74.14
2-year total costs			321.27
Annual costs			160.64

Note: Screening by office assistant, care manager, and physician cost per hour derived from Bureau of Labor Statistics estimate for median office assistant, registered nurse, and general/family practitioner earnings plus 25% fringe benefits inflated to year 2000 dollars. Office assistant, care manager, and physician time estimates derived from care management report.

*Identifying 115 patients beginning a new treatment episode required screening 5,838 patients.

Source: Rost et al. Cost effectiveness of enhancing primary care depression management on an ongoing bases. *Ann Fam Med.* 2005; 3:7-14.[152]

8.2 Resources for Estimating Start-Up Costs

As noted previously in this section, nearly all economic evaluations did not include a full valuation of implementation costs in their estimation of expenditures for BHI and were also lacking detail on practice-wide expenses involved in delivering the intervention (e.g., screening) in many instances. In addition, our budgetary impact analysis was based on a single scenario, and the realities of integration will vary widely by setting.

Nevertheless, publicly-available tools are available for organizations interested in BHI to develop estimates of staffing needs and expenditures for planning, start-up, and "steady state" once integration has been implemented. These tools are summarized on the next page and more detailed resources are available in Appendix B.

Staffing

The Advancing Integrated Mental Health Solutions (AIMS) Center at the University of Washington, the developers of the IMPACT integration model, have developed an online implementation guide for primary care organizations considering BHI. The full implementation guide can be found at: http://aims.uw.edu/collaborative-care/implementation-guide. As part of this effort, the AIMS team has developed a staffing formula for diverse primary-care settings based on the mental health needs of the populations being served (low, medium, or high). The formula is depicted in Table 5 below.

Table 5. Collaborative Care for Depression: Staffing Ratios in Diverse Clinic Settings

Clinic Population	Prevalence of Depression	Typical Active Caseload for 1 FTE Care Manager	Primary Care Panel Size for 1 FTE Care Manager	Typical Personnel Requirements for 1,000 Primary Care Patients (FTEs)	
				Care Manager	Psychiatric Consultant
Low need (e.g., insured, employed)	2%	100-125	5,000	0.2	0.05 (2 hrs/wk)
Medium need (e.g., FQHC, chronic pain, substance use)	5%	65-85	1,500	0.7	0.07 (3 hrs/wk)
High need (e.g., homeless, addiction issues)	15%	50	333	3.0	0.3 (12 hrs/wk)

FTE: Full-time equivalent; FQHC: Federally-qualified health center

In addition, SAMHSA developed an implementation and financing guide specifically for FQHCs. The guide cites a general rule that behavioral health staff "should be available 2-4 hours weekly for every 1,000 primary care patients,"[155] although the source of this information is cited only as personal communication. The full guide can be found at: http://www.integration.samhsa.gov/financing/Financing_BH_Services_at_FQHCs_Final_7_23-12.pdf.

Estimating Planning, Implementation, and Steady-State Costs

Prescription for Health is a grant-making organization based at the University of Colorado-Denver that is focused on incorporating evidence-based methods to encourage patient behavior change in clinical practice (http://www.prescriptionforhealth.org/about/index.html). One of the results from the initial two rounds of funding was an Excel-based toolkit for organizations interested in integrating behavioral health into primary care; the resulting estimates of start-up costs have been published and are described in further detail in Section 8.3.[156] The toolkit consists of multiple worksheets that allow for estimation of planning, start-up, and ongoing costs of a BHI program based on the needs and infrastructure of individual organizations. The toolkit was recently modified for use with Colorado's Advancing Care Together (ACT) initiative, which involves BHI integration at 11 diverse practice sites across the state.[157] Examples of detailed templates can be found in Appendix B. Briefly, the templates are designed to capture the following cost elements:

Planning Costs

- Current patient flow
- Current staff salaries, FTEs, fringe percentages, etc.
- Amount of time spent on BHI planning for each staff type
- Current direct expenditures, indirect expenses, and overhead

Start-Up Costs

- Staff training (e.g., screening tool, program activities)
- Administration (e.g., website redesign, community outreach)
- Fixed costs (e.g., workspace, computer equipment, other capital assets)
- Overhead (e.g., rent/lease, insurance, phone and utilities)

"Steady State" Costs

- Percent of staff time devoted to intervention and incremental costs associated with treatment
- Overhead expenses attributable to BHI
- New capital purchases and depreciation of existing assets

SAMHSA has also developed a resource for making the business case for BHI. However, the focus of this tool is on modeling improvements in workflow and revenue through use of additional billing codes, reducing PCP time for case triaged to a behaviorist, etc. While there are entries for development, implementation, and screening costs, they lack the level of detail described above. Nevertheless, the Excel-based pro forma tool can be found in Appendix B to this report, and the full monograph on the business case can be found at: http://www.integration.samhsa.gov/integrated-care-models/The_Business_Case_for_Behavioral_Health_Care_Monograph.pdf).

8.3 Budgetary Impact Analysis

Methods

To gain an understanding of the potential expenditures that might be involved in a new effort to integrate behavioral health into primary care practice, we conducted an exploratory analysis from the perspective of a large California ACO (200,000 lives). Primary model inputs are presented in Table 6 on the following page. We made a number of key assumptions for this analysis, as listed below:

- ACO manages a primarily employed and privately-insured population
- Assumed start-up time of 4 months, remainder of year assumes implementation and ongoing intervention
- New hires of 40 RN care managers and 10 psychiatrist consultants required, based on recommended staffing ratios for "low need" practices from AIMS Center
- Change in job role for medical assistants to conduct depression screening; no additional hires
- Only small modifications of existing EHR system required, no other major IT expenses
- Additional capital expenditures assumed for workspace for new hires
- All patients in panel assumed to have one screening encounter during the year

Expenses were divided into those required for program implementation and start-up, and those that would be incurred after BHI is implemented (i.e., "ongoing" costs). We found a single source of published data on these costs, an analysis of the initial Prescription for Health integration of behavior-change interventions in 29 primary care practices across the US.[156] However, the interventions of focus in this study were limited in scope, focusing on coaching patients with regard to smoking cessation, dietary change, exercise, and alcohol use. Costs were estimated based on the experience of three of these practices (practice group 2 in the publication), which were the only ones to report capital expenditures for additional staff space.

We therefore assumed additional costs related to the integration of staff and instruments targeted at identification and treatment of depression. Requirements for new care managers and psychiatric consultants were estimated based on the staffing ratios published by the AIMS Center for "low need" organizations (see Section 8.2); we assumed that these individuals would each require four and two hours of training, respectively. As noted above, we did not assume any new hires of office/medical assistants but rather retraining of existing staff. We assumed that there would be one assistant per 2,000 patients in the panel (100 total), and that these individuals would require 4 hours of retraining each. Training costs were calculated based on published average California-specific wage rates for nurses, physicians, and medical assistants from the US Bureau of Labor

Statistics (see Table 6 below). Care managers were assumed to be nurses as this was the most commonly reported staff type filling the role in available RCTs.

We estimated ongoing costs based on three components: screening, direct staff expenses for intervention delivery, and practice overhead. Screening costs were estimated based on the use of a validated patient instrument that required 3 minutes of office assistant and 0.5 minutes of PCP time for each screen; relevant wage rates were applied to calculate these costs. Intervention delivery costs were estimated based on a depression prevalence of 3% in this population (6,000 patients), based on data from an analysis of major depression in an employer database.[158] Each of the 40 care managers was therefore expected to manage an active full-time caseload of 150 patients; this caseload would also require 0.25 of a psychiatrist FTE. Overhead costs (e.g., clerical support, billing) were estimated based on the study by Dodoo and colleagues, again focusing on the experience of practice group 2.[156]

All costs are presented in 2014 dollars and were updated as necessary using the medical care component of the US Consumer Price Index.[159] Analyses were conducted using Microsoft Excel® 2013.

Table 6. Model Inputs for Budgetary Impact Model in a 200,000-member ACO

Parameter	Estimate	Source(s)
Staffing Requirements		
RN Care Managers	40 (0.2 per 1,000)	AIMS Center, 2014
Psychiatrist Consultants	10 (0.05 per 1,000)	AIMS Center, 2014
Medical Assistants	100 (existing)	Assumption
Average Hourly Wages		
Medical Assistants	$16.37	US Bureau of Labor Statistics, California, 2014
RN Care Managers	$49.85	"
Psychiatrists	$92.05	"
Primary Care Physicians	$93.64	"
General Start-Up Expenses (per month)	$5,817	Dodoo, 2008; US BLS, 2014
Major Depression Prevalence	3%	Ivanova, 2010
General Overhead Expenses (per diagnosed and treated patient per month)	$57	Dodoo, 2008; US BLS, 2014

NOTES: Staff time for training included 4 hours for each of 40 care managers, 4 hours for each of 100 medical assistants, and 2 hours for each of 10 psychiatric consultants. Screening time included 3 minutes per test for medical assistants and 0.5 minutes per test for primary care physicians. Active caseload of 150 patients assumed for each care manager and psychiatric consultant (1.0 and 0.25 FTE respectively).

Results

Findings from our budgetary impact analysis are presented in Table 7 below on a total and PMPM basis. As illustrated in the table, costs during the 4-month start-up period are relatively modest (approximately $40,000 in total, or $0.02 PMPM), even with an assumed training of 50 new staff and retraining of 100 others. Similarly, screening costs are not a significant contributor (approximately $310,000, $0.13 PMPM) given the relatively small amount of assistant and PCP time that each screen takes. By contrast, direct staff and overhead costs would be expected to generate over $800,000 in monthly expenditures for this ACO, or nearly $7 million over the remaining 8 months of the year ($2.83 PMPM).

Table 7. Start-up and Ongoing Expenses of BHI in a 200,000-member ACO

Type of Expense	Total Cost ($)	Total Cost ($PMPM)
Start-Up Expenses (4 months)		
General startup	$23,268	$0.01
Additional training	$16,365	$0.01
Total Start-Up Expenses	$39,633	$0.02
Ongoing Expenses (8 months)		
Screening	$313,524	$0.13
Direct Staff	$3,730,560	$1.55
Overhead	$2,736,000	$1.14
Total Ongoing Expenses	$6,780,084	$2.83
TOTAL FIRST-YEAR EXPENSES	$6,819,717	$2.84

NOTE: Subtotals and grand total may not precisely sum due to rounding.

Our findings suggest that first-year expenses for a 200,000 member ACO are sizeable, even in a relatively low-risk population. The incremental PMPM expense of BHI ($2.84) generated in this analysis represents an 11% increase over a cited primary care benchmark PMPM of $26, which was derived based on revenue estimates from the primary care practices participating in the CMS Comprehensive Primary Care Initiative.[160]

As mentioned previously, the budgetary impact displayed in this analysis is illustrative for the assumed scenario only. For example, another large ACO might already have sufficient physical space and co-located behavioral health personnel, so a greater focus would be placed on reconfiguring workflow and less emphasis on new hires and changes to the physical plant. By contrast, a small ACO might need greater information technology investment as well as additional hiring and physical space modifications. In addition, our analysis assumed that all 6,000 patients who screen positive for depression would be actively managed, which may be challenging from a throughput perspective, even with optimal staffing. Still, if only 50% of screen-positive patients received the intervention over the 8-month period after implementation, the PMPM impact would

still be $1.49, or a 6% increase over a base of $26. However, we have also assumed no cost offsets associated with the intervention. For example, if we assumed annual costs of care of $8,000 for the 6,000 depressed patients in our sample, and further assumed that BHI would reduce overall health care costs by only 5% in these individuals, the resulting savings ($2.4 million) would reduce the PMPM impact of BHI by $1 (35%).

Despite these limitations, we believe that this analysis can be instructive for both organizations considering an approach to BHI as well as to payers considering appropriate reimbursement models that would allow ACOs and other provider organizations to recover the implementation costs of BHI and sustain such interventions moving forward.

Summary

As in ICER's recent review of newer treatments for hepatitis C for CTAF,[161] ICER has adopted a novel framework for assessment of the comparative value of health care interventions, in which value is assessed according to two distinct constructs:

- *Care Value:*
    1. Comparative clinical effectiveness of each intervention vs. alternatives (considering both clinical benefits and harm)
    2. Any additional "non-clinical" benefits (e.g., reduced caregiver burden)
    3. Contextual considerations (no other acceptable treatment, vulnerable populations)
    4. Cost-effectiveness (incremental cost to achieve important patient outcomes vs. alternatives)

- *Health System Value:*
    1. Care value of the intervention of interest (as above): and
    2. Potential effects of short-term budgetary impact from the intervention on other patients in the health care system

Our consideration of care value is based on a relatively robust evidence base for both clinical effectiveness and cost-effectiveness of BHI interventions for depression and anxiety in primary care. Available studies have been relatively consistent in showing incremental clinical benefit over usual care, at least in terms of mental health outcomes. In addition, while not explicitly measured in these studies, there does not appear to be any potential harm to the patient from integration efforts. Finally, while the quality of available economic evaluations could be greatly improved, findings from multiple evaluations across a variety of integration models and populations suggest that BHI falls within generally-acceptable thresholds for cost-effectiveness ($15,000 - $80,000 per QALY gained vs. usual care).

Assessment of health system value is much more complex, however, as the investment in BHI and the potential for return on investment varies greatly depending on the realities faced in any individual setting. Economic studies have shown with consistency that BHI increases organizational costs, at least in the short term. Evidence on longer-term cost savings is more limited, focused on specific subpopulations (e.g., patients also diagnosed with diabetes) in many instances, and subject to methodological concerns in others (e.g., incomplete accounting of start-up or practice-wide costs, tracking of health care costs at periods distal to the end of the intervention). However, others would argue that the increase in PMPM costs such as those depicted in our budget impact analysis are not only manageable, they are in fact *warranted* due to chronic underfunding and undervaluing of primary care.[162] In addition, while there are not currently consistent data with which to estimate potential cost offsets from BHI, fairly conservative estimates of reductions in health care costs could offset these initial investments considerably. Given the broader context of increased movement toward accountable care and other at-risk arrangements, BHI is one of multiple steps that is likely to be taken.

9. Barriers and Potential Solutions

ICER staff conducted semi-structured interviews with regional and national policy experts and reviewed meeting summaries/other reports to understand real world perspectives on practice and delivery system innovations, barriers to change, and opportunities for improving how behavioral health care services are integrated into primary care. Interviewees represented a variety of perspectives including state government, provider organizations, statewide technical assistance/implementation support organizations, and a MBHO. The sections below summarize these conversations and distill key lessons or recommendations supported by a large majority of policy experts.

At the public CTAF meeting on April 2, 2015, these barriers and potential solutions will be discussed at length with the CTAF Panel and a Policy Roundtable composed of subject matter experts. The Panel will also cast votes to assess the comparative effectiveness and value of BHI (draft questions for deliberation are posted for public comment on the CTAF website). Following the public meeting, this section will be updated to summarize the discussion of CTAF members regarding the evidence and will include a formal set of policy recommendations related to implementing BHI.

9.1 Barriers to Integration

Despite the desire of many to integrate behavioral health into primary care, significant barriers have been articulated by researchers and practitioners across the US.[5,164-166] Identified barriers can be grouped into the following categories – reimbursement and payment, culture and historical influences, technology/information sharing, provider training and capacity, and service capacity and delivery – and are summarized in Table 8 on the following page. Information included in the tables in this section builds on many of the issues described briefly in Section 2.

Table 8. Major Barriers to BHI, National

Category	Specific Issues

Reimbursement and payment	• Payment that has historically rewarded volume through fee-for-service payments rather than outcomes through capitated payments and shared risk/shared savings models
	• Limitations on billing including:
	  ○ Who can bill for services (e.g., MFTs can bill in some states and not others)
	  ○ Requirements that services be delivered face-to-face to be eligible for payment (effectively limiting use of telemedicine and email)
	  ○ Lower reimbursement for health and behavioral assessment/intervention (HBAI) codes typically used by non-physician providers than for evaluation and management (E&M) codes typically used by physicians
	  ○ Inability to bill for care coordination and communication activities

Culture and historical influences	• Separate silos for behavioral health and physical health – both in terms of service delivery and financing • Different cultural norms around training, licensing, and certification for primary care, mental health, and substance use • Ongoing stigma related to mental health and substance use conditions
Technology/ information sharing	• Challenges related to limited data sharing via EHRs, which are preferred but are not as widely used by behavioral health providers as by physical health providers • Confidentiality laws that are more restrictive for behavioral health (particularly for substance use) than for physical health • Fragmented communication among providers of primary care, mental health, and substance use services
Provider training and capacity	• Limited training of primary care physicians in behavioral health conditions and of behavioral health providers in physical health conditions • Shortage of certain types of personnel including psychiatrists and providers; substantial variation in provider supply across the state • Scope of practice concerns
Service capacity and delivery	• Limited community resources to which patients with behavioral health conditions can be referred – primary care physicians can be reluctant to screen for conditions when no or few referral resources are available

Note: MFT: Marriage and family therapist

In addition to the barriers to integration described above, other state-specific barriers of particular salience were identified through key informant interviews and meeting summaries/other reports related to California integrated care efforts and are summarized in Table 9 on the next page.[167,168] State-specific issues related to Medi-Cal reimbursement and provider capacity were identified. Also noted were issues related to gaps in substance use and psychiatry services, as well as challenges for Medi-Cal patients who may at different times transition from mental health conditions classified as "mild to moderate" to SMI and vice versa, requiring changes in providers and care delivery systems (e.g., Medi-Cal managed care plan vs. county mental health plan).

Table 9. Barriers to BHI, California-specific

Category	Specific Issues

Reimbursement and payment	• Limitations on billing including:
	  ○ Who can bill for services (e.g., MFTs typically cannot bill Medi-Cal whereas LCSWs can; California has many more MFTs than LCSWs)
	  ○ Inability of FQHCs to bill Medi-Cal for both a physical health and behavioral health service on the same day

Technology/ information sharing	• Actual and perceived confidentiality requirements/restrictions
Provider training and capacity	• Shortage of psychiatrists overall and shortage of other behavioral health providers who are bilingual and can provide culturally competent care to the state's diverse residents; geographic disparities in provider supply
Service capacity and delivery	• Service capacity gaps, especially for substance use and psychiatry • Confusing care pathways and transitions, especially for those enrolled in Medi-Cal who move between the categories of mild-to-moderate and SMI and for people with criminal justice system involvement

Note: MFT: Marriage and family therapist

9.2 Advancing Integration in California: Potential Solutions

Much of the leadership around BHI in California is occurring at the state and county levels. At the state level, DHCS, which administers the Medi-Cal program, has a variety of initiatives underway to encourage integration, and the funding provided by Proposition 63 has also encouraged the transformation of mental health services in California. At a summit in November 2014, DHCS convened stakeholders to identify practical solutions that would advance California's behavioral health system along a continuum toward a fully integrated, high-performing health system. For BHI to occur in the safety net, the summit report identified a need for information shared through EHRs, advanced care coordination, evidence-based clinical practices, and effective communication among providers.[167] Multiple opportunities to advance integration were identified, including waivers that allow the state flexibility in how the Medi-Cal program is administered.

1115 Waiver

Since 2010, California's 1115 waiver has been used to expand health coverage to more uninsured adults and to implement the medical home concept for patients with chronic conditions while moving more Medi-Cal enrollees from FFS into managed care. DHCS and stakeholders are in the process of drafting a new 1115 waiver application (current waiver ends in October 2015) and plan to use this as an opportunity to advance practice transformation of California's behavioral health system and achieve better integration. Several contributors to practice transformation have been identified:

Technology/information sharing

- Data system infrastructure and enhancement – need for EHRs so all providers can use them to support their services and coordinate care

Provider training and capacity

- Cross system training, particularly of mental health and primary care providers regarding substance use

Service capacity and delivery

- Multidisciplinary teaming
- Care coordinators who offer comprehensive care coordination services
- Peer providers who offer comprehensive services
- Psychiatry and primary care consultation – Medi-Cal does not typically reimburse for psychiatric consultation in primary care; need to encourage use of systematic psychiatric caseload reviews and tele-monitoring, which could help with psychiatrist shortage
- Expansion of SBIRT for substance use beyond primary care to other care settings including the ED, inpatient, and mental health; beyond alcohol to other substances; and to youth and older adults. Expanded training and technical assistance is also needed.

Although managed care plans currently receive capitation payments for Medi-Cal enrollees, incentives for integrated care could be further aligned through shared savings and/or shared risk arrangements. Proposals for such models were put forth by the state's 1115 waiver workgroup on plan-provider incentives.[163] These proposals included 1) shared savings for Medi-Cal MCPs and county MHPs to jointly promote care integration and better outcomes, 2) pay for performance (P4P) for Medi-Cal providers with a focus on primary care physicians, 3) behavioral health P4P for Medi-Cal providers focused on care for patients with depression, 4) shared savings for Medi-Cal providers using a total cost of care target, and 5) shared savings for physical and behavioral health providers for team-based care.

Proposition 63/MHSA

The significant funding stream that MHSA has created (more than $13.2 billion over ten years), along with its emphasis on innovation, has been an impetus for BHI in the state.[169] County mental health departments are partnering with community agencies, including primary care clinics, to enhance behavioral health services.[169] A recent evaluation of MHSA by the state's Little Hoover Commission questioned its effectiveness, however, noting that more evidence is needed to show what has been accomplished in terms of improving mental health services.[36]

Other Opportunities

Several other potential improvements that could facilitate integrated care in California were identified through key informant interviews and meeting summaries/other reports related to

California integration efforts.[167,168] These are grouped into the following categories – new reimbursement and payment strategies that provide incentives to encourage integration; improved screening, referral, and treatment processes; ensuring services are available for patients who have complex behavioral and physical health conditions; and improving consumer choice of services and providers. These additional opportunities are summarized in Table 10 below.

Table 10. Additional Opportunities for BHI in California

Mechanism	Strategies
New reimbursement and payment strategies	• Use alternative payment models such as capitation, and/or provide incentives to integrate care such as shared savings and/or shared risk; capitation payments should be risk-adjusted • Provide enhanced capitation payments for care management services and collaborative care delivered in integrated care settings • Pay for psychiatry consults to primary care by phone • Use P4P to reward clinical improvement and have withholds for inappropriate care • Allow for same-day billing of physical and mental health services when provided by two separate providers • Increase reimbursement of evidence-based practices • Increase payment for non-physician providers • Reduce restrictions on types of providers who can bill for certain services (e.g., MFTs in Medi-Cal)
Improved screening, referral, and treatment processes	• Use standard, validated screening and assessment tools • Centralize points of access for screening and referrals • Use peer navigators to engage and help patients use services • Proactively complete consent and releases of information so all known providers can facilitate care management/coordination
Increase and ensure service adequacy for patients with complex physical and behavioral health conditions	• Improve care transitions • Expand telemedicine • Provide team-based care with shared care plans that involve and engage patients • Strengthen provider networks
Improve consumer choice	• Use peer providers • Promote culturally competent and relevant services

Note: MFT: Marriage and family therapist

Summary

A great deal of work is underway in California to integrate behavioral health into primary care, particularly at the state and county levels, as well as by some providers in both the public and private sectors. As noted above, there are substantial barriers to integrated care such as the preponderance of fee-for-service payment, provider and service capacity challenges, and limited data sharing and use of EHRs. Nonetheless, pilot projects and proposals are being generated and discussed across the state to address and overcome some of the thornier barriers to integration.

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This is the first review of this topic by the California Technology Assessment Forum.

References

1. Wittchen HU, Mühlig S, Beesdo K. Mental disorders in primary care. *Dialogues in Clin Neurosci.* 2003; 5(2): 115-128.

2. Collins C, Hewson DL, Munger R, Wade T. Evolving models of behavioral health integration into primary care. Milbank Memorial Fund, 2010.

3. Druss BG, Walker ER. Mental disorders and medical comorbidity. Robert Wood Johnson Foundation, 2011. http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2011/rwjf69438/subassets/rwjf69438_1. Accessed March 2, 2015.

4. Katon WJ. Epidemiology and treatment of depression in patients with chronic medical illness. *Dialogues Clin Neurosci.* 2011; 13(1): 7-23.

5. Melek S. Bending the Medicaid healthcare cost curve through financially sustainable medical-behavioral integration. Milliman, 2012. http://publications.milliman.com/publications/health-published/pdfs/bending-medicaid-cost-curve.pdf. Accessed February 24, 2015.

6. Kronick RG, Bella M, and Gilmer TP. The faces of Medicaid III: Refining the portrait of people with multiple chronic conditions. Center for Healthcare Strategies, Inc. October, 2009.

7. The Kaiser Commission on Medicaid and the Uninsured. Mental health financing in the United State. 2011. https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8182.pdf. Accessed February 2015.

8. Kessler RC, Chiu W, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey replication. *Arch Gen Psychiatry*. 2005; 62(6):617-627.

9. National Institute of Mental Health. Any Mental Illness (AMI) Among Adults. http://www.nimh.nih.gov/health/statistics/prevalence/any-mental-illness-ami-among-adults.shtml. Accessed March 2, 2015.

10. National Institute of Mental Health. Serious Mental Illness (SMI) Among US Adults. http://www.nimh.nih.gov/health/statistics/prevalence/serious-mental-illness-smi-among-us-adults.shtml. Accessed March 2, 2015.

11. California HealthCare Foundation. Mental health care in California; painting a picture. California Health Care Almanac. 2013. http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/M/PDF%20MentalHealthPaintingPicture.pdf. Accessed March 2, 2015.

12. National Institute of Mental Health. Major depression among adults. http://www.nimh.nih.gov/health/statistics/prevalence/major-depression-among-adults.shtml. Accessed March 2, 2015

13. National Institute of Mental Health. Any anxiety disorder among adults. http://www.nimh.nih.gov/health/statistics/prevalence/any-anxiety-disorder-among-adults.shtml. Accessed March 2, 2015.

14. Robert Wood Johnson Foundation. Mental disorders and medical comorbity: Policy brief no. 21. 2011. http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2011/rwjf69438. Accessed March 2015.

15. Substance Abuse and Mental Health Services Administration. Behavioral health barometer: United States, 2014. http://www.samhsa.gov/data/sites/default/files/National_BHBarometer_2014/National_BHBarometer_2014.pdf. Accessed February 24, 2015.

16. Merikangas KR, He JP, Burstein M, et al. Lifetime prevalence of mental disorders in US adolescents: results from the National Comorbidity Survey Replication – Adolescent Supplement (NCS-A). *J Am Acad Child Adolesc Psychiatry*. 2010a; 49(10):980-989.

17. Merikangas KR, He JP, Brody D, et al. Prevalence and treatment of mental disorders among US children in the 2001-2004 NHANES. *Pediatrics*. 2010b; 125(1):75-81.

18. Arnquist S, Harbage P. A complex case: public mental health delivery and financing in California. California HealthCare Foundation, 2013. http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/C/PDF%20ComplexCaseMentalHealth.pdf. Accessed February 25, 2015.

19. Druss BG, Wang PS, Sampson NA, et al. Understanding mental health treatment in persons without mental diagnoses: Results from the national comorbidity survey replication. *Arch Gen Psychiat*. 2007; 64(10): 1196-1203.

20. Levit, K.R. et al. "Future Funding for Mental Health and Substance Abuse: Increasing Burdens for the Public Sector." *Health Affairs*. Web Exclusive, 7 October 2008, w513-22.

21. America's state of mind. Medco Health Solutions Inc. http://apps.who.int/medicinedocs/documents/s19032en/s19032en.pdf. Accessed February 24, 2015.

22. Miller BF, Kessler R, Peek CJ, Kallenberg GA. A national agenda for research in collaborative care. Agency for Healthcare Research and Quality. 2011. http://www.ahrq.gov/research/collaborativecare/collabcare.pdf. Accessed February 2015.

23. Integration Academy http://integrationacademy.ahrq.gov/

24. Peek CJ, National Integration Academy Council. Lexicon for behavioral health and primary care integration: concepts and definitions developed by expert consensus. Agency for Healthcare Research and Quality, 2013. http://integrationacademy.ahrq.gov/sites/default/files/Lexicon.pdf. Accessed March 2, 2015.

25. AHRQ Framework. AHRQ website: http://integrationacademy.ahrq.gov/atlas/frameworkIBHC

26. Doherty W. The why's and levels of collaborative family healthcare. *Fam Syst Med*. 1995; 13: 275–281.

27. SAMHSA-HRSA Center for Integrated Health Solutions. *A Standard Framework for Levels of Integrated Healthcare*, April 2013.

28. Agency for Healthcare Research and Quality. Education and Workforce. http://integrationacademy.ahrq.gov/educationtraining. Accessed March 2, 2015.

29. Interprofessional Education Collaborative. Team based competencies: Building a shared foundation for education and clinical practice. 2011. http://www.aacn.nche.edu/leading-initiatives/IPECProceedings.pdf. Accessed February 2015.

30. Blount FA and Miller BF. Addressing the workforce crisis in integrated primary care. *J Clin Psychol in Medical Settings.* 2009; 16(1): 113-116.

31. Hoge MA, Morris JA, Laraia M, Pomerantz A, Farley, T. Core Competencies for Integrated Behavioral Health and Primary Care. SAMHSA - HRSA Center for Integrated Health Solutions, 2014. http://www.integration.samhsa.gov/workforce/Integration_Competencies_Final.pdf. Accessed March 2, 2015

32. Agency for Healthcare Research and Quality. Programs. http://integrationacademy.ahrq.gov/education/Programs. Accessed March 2, 2015.

33. American College of Physicians. How is a shortage of primary care physicians affecting the quality and cost of medical care? 2008. http://www.acponline.org/advocacy/current_policy_papers/assets/primary_shortage.pdf. Accessed March 2, 2015.

34. Ginsburg S, Foster S, Santoro K, et al. Strategies to support the integration of mental health into pediatric primary care. National Institute for Health Care Management, 2009. http://www.nihcm.org/pdf/PediatricMH-FINAL.pdf. Accessed March 2, 2015.

35. Bachrach D, Anthony S, and Detty A, Phelps and Phillips, LLP. State strategies for integrating physical and behavioral health services in a changing Medicaid environment. Commonwealth Fund, 2014. http://www.commonwealthfund.org/~/media/files/publications/fund-report/2014/aug/1767_bachrach_state_strategies_integrating_phys_behavioral_hlt_827.pdf.

Accessed February 20, 2015.

36. Little Hoover Commission. Promises still to keep: a decade of the Mental Health Services Act. 2015. http://www.lhc.ca.gov/studies/225/report225.html. Accessed February 25, 2015.

37. Integrated Behavioral Health Project. Mental Health Services Act (Prop 63) Review of California's Innovation Work Plans. http://www.ibhp.org/uploads/file/ComparativeReviewofINNWorkPlans %2804_05_12%29.pdf. Accessed February 2015.

38. Mauch D, Kautz C, and Smith SA. Reimbursement of mental health services in primary care settings. Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, 2008. http://www.integration.samhsa.gov/Reimbursement_of_Mental_Health_Services_in_Primary_Care_Settings.pdf. Accessed February 20, 2015.

39. Belfort R, Bernstein W, Ingargiola S, Manatt, Phelps and Phillips. Integrating physical and behavioral health: strategies for overcoming legal barriers to health information exchange. Robert Wood Johnson Foundation, 2014. http://statenetwork.org/wp-content/uploads/2014/11/RWJF_SHVS_IntegratingPhysicalBehavioralHealth.pdf. Accessed February 20, 2015.

40. California Health and Safety Code §§ 11845.5, 123105(b), and §§ 120975-121125; Cal. Civ. Code § 56.104

41. Blumental D and Glaser JP. Information technology comes to medicine. *N Engl J Med.* 2007; 356(24): 2527-2534.

42. National Council for Community Behavioral Healthcare. HIT adoption and readiness for meaningful use in community behavioral health. 2012. http://www.thenationalcouncil.org/wp-content/uploads/2012/10/HIT-Survey-Full-Report.pdf. Accessed February 2015.

43. HealthIT.gov. Why focus health IT on behavioral health? http://www.healthit.gov/policy-researchers-implementers/behavioral-health. Accessed February 2015.

44. HealthIT.gov. Behavioral health data exchange/primary care and behavioral health integration. http://www.healthit.gov/policy-researchers-implementers/behavioral-health-data-exchange. Accessed February 2015.

45. DHCS, Memorandum of Understanding Requirements for Medi-Cal Managed Care Plans, All-Plan Letter 13-018, November 27, 2013. Available at: http://www.dhcs.ca.gov/formsandpubs/Documents/MMCDAPLsandPolicyLetters/APL2013/APL13-018.pdf

46. California Healthcare Foundation. Medi-Cal facts and figures: a program transforms. California Health Care Almanac. 2013. Available at: http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/M/PDF%20MediCalFactsAndFi

gures2013.pdf. Accessed March 2, 2015.

47. Gold J. Kaiser Health News, 2014. FAQ on ACOs: Accountable Care Organizations explained. http://kaiserhealthnews.org/news/aco-accountable-care-organization-faq/. Accessed February 20, 2015.

48. Tierney K, Saunders A, and Lewis V. Creating connections: an early look at the integration of behavioral health and primary care in Accountable Care Organizations. Commonwealth Fund, 2014. http://www.commonwealthfund.org/~/media/files/publications/fund-report/2014/dec/1791_tierney_creating_connections_integration_behav_hlt_primary_care_final.pdf. Accessed February 20, 2015.

49. Lewis VA, Colla CH, Tierney K, Van Critters AD, et al. Few ACOs pursue innovative models that integrate mental illness and substance abuse with primary care. *Health Affairs*. 2014; 33(10): 1808- 16.

50. Shortell SM, Scheffler RM, Kessell ER, Fulton BD. Accountable Care Organizations in California: Promise & Performance. Berkeley Forum for Improving California's Healthcare Delivery System, School of Public Health, University of California, Berkeley, 2015. http://berkeleyhealthcareforum.berkeley.edu/wp-content/uploads/BerkeleyForumACOExpBrief3_feb16.pdf. Accessed March 2015.

51. Bitton A, Martin C and Landon BE. A Nationwide survey of Patient Centered Medical Home demonstration projects. *J Gen Intern Med*. 2010; 25(6): 584–92.

52. Mann C. Health Homes for enrollees with chronic conditions [Letter to State Medicaid Directors and State Health Officials]. Center for Medicare and Medicaid Services, 2010. http://downloads.cms.gov/cmsgov/archived-downloads/SMDL/downloads/SMD10024.pdf. Accessed February 20, 2015.

53. Substance Abuse and Mental Health Services Administration. Advancing behavioral health integration within NCQA recognized patient-centered medical homes. 2014. http://www.integration.samhsa.gov/integrated-care-models/Behavioral_Health_Integration_and_the_Patient_Centered_Medical_Home_FINAL.pdf. Accessed February 2015.

54. Office of National Drug Control Policy. Substance abuse and the affordable care act. http://www.whitehouse.gov/ondcp/healthcare. Accessed February 20, 2015.

55. Beronio K, Po R, Skopec L, Glied S. ASPE issue brief: Affordable Care Act expands mental health and substance use disorder benefits and federal parity protections for 62 million Americans. Office of the Assistant Secretary for Planning and Evaluation, 2013. http://aspe.hhs.gov/health/reports/2013/mental/rb_mental.cfm. Accessed February 25, 2015

56. Gorn D. Medi-Cal Enrollment Jumps to 11.3 Million. *California Healthline.* November 12, 2014. http://www.californiahealthline.org/capitol-desk/2014/11/medical-jumps-to-11-3-million.

Accessed February 2015.

57. Lardiere MR, Jones E, Perez M. National Association of Community Health Centers (NACHC) 2010 assessment of behavioral health services in federally qualified health centers, 2011. http://www.nachc.com/client/NACHC%202010%20Assessment%20of%20Behavioral%20Health%20Services%20in%20FQHCs_1_14_11_FINAL.pdf. Accessed February 20, 2015.

58. Nardone M, Snyder S, Paradise J. Integrating physical and behavioral health care: promising Medicaid models. Kaiser Family Foundation, 2014. http://kff.org/report-section/integrating-physical-and-behavioral-health-care-promising-medicaid-models-issue-brief/#endnote_link_101554-18. Accessed February 20, 2015.

59. California Health Center Fact Sheet, 2013. National Association of Community Health Centers. Available at: http://www.nachc.com/client/documents/research/maps/CA13.pdf

60. American Telemedicine Association. Evidence-based practice for telemental health. 2009. http://www.americantelemed.org/docs/default-source/standards/evidence-based-practice-for-telemental-health.pdf?sfvrsn=4. Accessed February 2015.

61. Thomas L, Capistrant G. 50 state telemedicine gaps analysis: coverage and reimbursement. American Telemedicine Association, 2014. http://www.americantelemed.org/docs/default-source/policy/50-state-telemedicine-gaps-analysis---coverage-and reimbursement.pdf?sfvrsn=6/. Accessed February 20, 2014.

62. U.S. Department of Health and Human Services Health Resources and Services Administration. Increasing access to behavioral health care through technology. 2012. http://www.hrsa.gov/publichealth/guidelines/behavioralhealth/behavioralhealthcareaccess.pdf. Accessed February 2015.

63. Berwick DM, Nolan TW, Whittington J. The Triple Aim: Care, health, and cost. *Health Affairs.* May 2008; 27(3): 759-769.

64. James Kiley, MD, email communication, February 2015.

65. Butler M, Kane RL, McAlpine D, et al. Integration of mental health/substance abuse and primary care no. 173 (Prepared by the Minnesota Evidence-based Practice Center under Contract No. 290-02-0009.) AHRQ Publication No. 09- E003. Rockville, MD. Agency for Healthcare Research and Quality. October 2008.

66. Archer J, Bower P, Gilbody S, et al. Collaborative care for depression and anxiety problems. *The Cochrane database of systematic reviews.* 2012;10:Cd006525.

67. Atlantis E, Fahey P, Foster J. Collaborative care for comorbid depression and diabetes: a systematic review and meta-analysis. *BMJ open.* 2014;4(4):e004706.

68. Badamgarav E, Weingarten SR, Henning JM, et al. Effectiveness of disease management programs in depression: a systematic review. *Am J Psychiatry.* 2003;160(12):2080-2090.

69. Bower P, Gilbody S, Richards D, Fletcher J, Sutton A. Collaborative care for depression in primary care. Making sense of a complex intervention: systematic review and meta-regression. *Br J Psychiat.* 2006;189:484-493.

70. Butler M, Kane RL, McAlpine D, et al. Does integrated care improve treatment for depression? A systematic review. *The Journal of ambulatory care management.* 2011;34(2):113-125.

71. Carey TS, Crotty KA, Morrissey JP, et al. AHRQ Future Research Needs Papers. *Future Research Needs for the Integration of Mental Health/Substance Abuse and Primary Care: Identification of Future Research Needs from Evidence Report/Technology Assessment No. 173*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2010.

72. Chang-Quan H, Bi-Rong D, Zhen-Chan L, Yuan Z, Yu-Sheng P, Qing-Xiu L. Collaborative care interventions for depression in the elderly: a systematic review of randomized controlled trials. *Journal of investigative medicine : the official publication of the American Federation for Clinical Research.* 2009;57(2):446-455.

73. Coventry PA, Hudson JL, Kontopantelis E, et al. Characteristics of effective collaborative care for treatment of depression: a systematic review and meta-regression of 74 randomised controlled trials. *PloS one.* 2014;9(9):e108114.

74. Gilbody S, Bower P, Fletcher J, Richards D, Sutton AJ. Collaborative care for depression: a cumulative meta-analysis and review of longer-term outcomes. *Arch Int Med.* 2006;166(21):2314-2321.

75. Gilbody S, Bower P, Torgerson D, Richards D. Cluster randomized trials produced similar results to individually randomized trials in a meta-analysis of enhanced care for depression. *Journal of clinical epidemiology.* 2008;61(2):160-168.

76. Gilbody S, Whitty P, Grimshaw J, Thomas R. Educational and organizational interventions to improve the management of depression in primary care: a systematic review. *JAMA.* 2003;289(23):3145-3151.

77. Gunn J, Diggens J, Hegarty K, Blashki G. A systematic review of complex system interventions designed to increase recovery from depression in primary care. *BMC health services research.* 2006;6:88.

78. Harkness EF, Bower PJ. On-site mental health workers delivering psychological therapy and psychosocial interventions to patients in primary care: effects on the professional practice of primary care providers. *The Cochrane database of systematic reviews.* 2009(1):Cd000532.

79. Huang Y, Wei X, Wu T, Chen R, Guo A. Collaborative care for patients with depression and diabetes mellitus: a systematic review and meta-analysis. *BMC Psychiatry.* 2013;13:260.

80. Miller CJ, Grogan-Kaylor A, Perron BE, Kilbourne AM, Woltmann E, Bauer MS. Collaborative chronic care models for mental health conditions: cumulative meta-analysis and metaregression to guide future research and implementation. *Med Care.* 2013;51(10):922-930.

81. Neumeyer-Gromen A, Lampert T, Stark K, Kallischnigg G. Disease management programs for depression: a systematic review and meta-analysis of randomized controlled trials. *Med Care.* 2004;42(12):1211-1221.

82. Sighinolfi C, Nespeca C, Menchetti M, Levantesi P, Belvederi Murri M, Berardi D. Collaborative care for depression in European countries: a systematic review and meta-analysis. *Journal of psychosomatic research.* 2014;77(4):247-263.

83. Thota AB, Sipe TA, Byard GJ, et al. Collaborative care to improve the management of depressive disorders: a community guide systematic review and meta-analysis. *Am J Prev Med.* 2012;42(5):525-538.

84. van Steenbergen-Weijenburg KM, van der Feltz-Cornelis CM, Horn EK, et al. Cost-effectiveness of collaborative care for the treatment of major depressive disorder in primary care. A systematic review. *BMC health services research.* 2010;10:19.

85. Watson LC, Amick HR, Gaynes BN, et al. Practice-based interventions addressing concomitant depression and chronic medical conditions in the primary care setting: a systematic review and meta-analysis. *Journal of primary care & community health.* 2013;4(4):294-306.

86. Woltmann E, Grogan-Kaylor A, Perron B, Georges H, Kilbourne AM, Bauer MS. Comparative effectiveness of collaborative chronic care models for mental health conditions across primary, specialty, and behavioral health care settings: systematic review and meta-analysis. *Am J Psychiatry.* 2012;169(8):790-804.

87. Methods Guide for Effectiveness and Comparative Effectiveness Reviews. In: Quality AfHRa, ed. Vol AHRQ Publication No. 10. Rockville, MD: Agency for Healthcare Research and Quality; 2012.

88. Ollendorf D, Pearson SD. ICER Evidence Rating Matrix: A User's Guide. 2013. http://www.icer-review.org/wp-content/uploads/2013/04/Rating-Matrix-User-Guide-Exec-Summ-FINAL.pdf.

89. Wells KB, Sherbourne C, Schoenbaum M, et al. Impact of disseminating quality improvement programs for depression in managed primary care: a randomized controlled trial. *Jama.* 2000;283(2):212-220.

90. Unützer J, Katon W, Callahan CM, et al. Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. *JAMA.* 2002;288(22):2836-2845.

91. Spitzer RL, Williams JB, Kroenke K, et al. Utility of a new procedure for diagnosing mental disorders in primary care. The PRIME-MD 1000 study. *JAMA.* 1994;272(22):1749-1756.

92. Derogatis LR, Lipman RS, Covi L. SCL-90: an outpatient psychiatric rating scale--preliminary report. *Psychopharmacology bulletin.* 1973;9(1):13-28.

93. Rost K, Nutting P, Smith J, Werner J, Duan N. Improving depression outcomes in community primary care practice: a randomized trial of the quEST intervention. Quality Enhancement by Strategic Teaming. *J Gen Int Med.* 2001;16(3):143-149.

94. Myers JK, Weissman MM. Use of a self-report symptom scale to detect depression in a community sample. *Am J Psychiatry.* 1980;137(9):1081-1084.

95. Cohen J. *Statistical power analysis for the behavioral sciences.* 2nd ed. Hillsdale, N.J.: L. Erlbaum Associates; 1988.

96. Roy-Byrne P, Craske MG, Sullivan G, et al. Delivery of evidence-based treatment for multiple anxiety disorders in primary care: a randomized controlled trial. *JAMA.* 2010;303(19):1921-1928.

97. Means-Christensen AJ, Sherbourne CD, Roy-Byrne PP, Craske MG, Stein MB. Using five questions to screen for five common mental disorders in primary care: diagnostic accuracy of the Anxiety and Depression Detector. *Gen Hosp Psychiatry.* 2006;28(2):108-118.

98. Katon WJ, Lin EH, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med.* 2010;363(27):2611-2620.

99. McHorney CS, Ware JE, Raczek AE. The MOS 36-item short-form health survery (SF-36): II. Psychometric and clinical tests for validity in measuring physical and mental health constructs. *Med Care.* 1993;31(3):247-263.

100. Hedrick SC, Chaney EF, Felker B, et al. Effectiveness of collaborative care depression treatment in Veterans' Affairs primary care. *J Gen Intern Med.* 2003; 18: 9-16.

101. Unützer J, Tang L, Oishi S, et al. Reducing suicidal ideation in depressed older primary care patients. *J Am Geriatr Soc.* 2006; 54: 1550–1556.

102. Katon W, Von Korff M, Lin E. Stepped collaborative care for primary care patients with persistent symptoms of depression: A randomized trial. *Arch Gen Psychiat.* 1999; 56: 1109-1115.

103. Grypma L, Haverkamp R, Little S, Unützer J. Taking an evidence-based model of depression care from research to practice: making lemonade out of depression. *Gen Hosp Psych.* 2006; 28: 101-107.

104. Hunkeler EM, Meresman JF, Hargreaves WA, et al. Efficacy of a nurse telehealth care and peer support in augmenting treatment of depression in primary care. *Arch Fam Med.* 2000; 9:700-708.

105. Simon GE, VonKorff M, Rutter C, Wagner E. Randomized trial of monitoring, feedback, and management of care by telephone to improve treatment of depression in primary care. *BMJ.* 2000; 320: 550-554.

106. Boudreau DM, Capoccia KL, Sullivan SD, et al. Collaborative care model to improve outcomes in major depression. *Ann Pharmacother.* 2002; 36: 585-91.

107. Rollman BL, Belnap BH, LeMenager MS, et al. Telephone-delivered collaborative care for treating post-CABG depression: A randomized controlled trial. *JAMA.* 2009; 302(19): 2095-2103.

108. Dietrich AJ, Oxman TE, Williams JW, et al. Re-engineering systems for the treatment of depression in primary care: Cluster randomised controlled trial. *BMJ.* 2004. doi:10.1136/bmj.38219.481250.55.

109. Finley PR, Rens HR, Pont JT, et al. Impact of a collaborative care model on depression in a primary care setting: A randomized controlled trial. *Pharmacotherapy.* 2003; 23(9): 1175-1185.

110. Wagner EH, Austin B, Davis C, Hindmarsh M, Schaefer J, Bonomi A. Improving Chronic Illness Care: Translating Evidence to Action. *Health Affairs*. 2001; 20(6):64-78.

111. Simon GE, Lundman EJ, Tutty S, Operskalski B, Von Korff M. Telephone psychotherapy and telephone care management for primary care patients starting antidepressant treatment: A randomized controlled trial. *JAMA.* 2004; 292(8): 935-942.

112. Fortney JC, Pyne JM, Edlund MJ, et al. Design and implementation of the Telemedicine-Enhanced Antidepressant Management Study. *Gen Hosp Psychiat.* 2006; 28*:* 18– 26.

113. Fortney JC, Pyne JM, Mouden SB, et al. Practice-based versus telemedicine-based collaborative care for depression in rural federally qualified health centers: A pragmatic randomized comparative effectiveness trial. *Am J Psychiat.* 2013; 170: 414-425.

114. Katzelnick DJ, Simon GE, Pearson SD, et al. Randomized trial of a depression management program in high utilizers of medical care. *Arch Fam Med.* 2000; 9: 345-351.

115. Katon WJ, Von Korff M, Lin EHB, et al. A randomized trial of collaborative care in patients with diabetes and depression. *Arch Gen Psychiatry.* 2004; 61: 1042-1049.

116. Unützer J, Katon W, Williams JW, et al. Improving primary care for depression in late life: The design of a multicenter randomized trial. *Med Care.* 2001; 39(8): 785-799.

117. Katon W, Von Korff M, Lin E, et al. Improving primary care treatment of depression among patients with diabetes mellitus: the design of the Pathways Study. *Gen Hosp Psych.* 2003; 25: 158-168.

118. Ell K, Katon W, Xie B, et al. One-year post collaborative depression care trial outcomes among predominantly Hispanic diabetes safety net patients. *Gen Hosp Psychiatry.* 2011; 33: 436-442.

119. Roy-Byrne PP, Craske M, Stein MB, et al. A randomized effectiveness trial of cognitive-behavioral therapy and medication for primary care panic disorder. *Arch Gen Psychiat.* 2005; 62(3): 290-298.

120. Sherbourne CD, Wells KB, Duan N. Long-term effectiveness of disseminating quality improvement for depression in primary care. *Arch Gen Psychiat.* 2001; 58: 696-703.

121. Katon W, Robinson P, Von Korff M, et al. A multifaceted intervention to improve treatment of depression in primary care. *Arch Gen Psychiat.* 1996; 53: 924-932.

122. Price D, Beck A, Nimmer C, Bensen S. The treatment of anxiety disorders in a primary care HMO setting. *Psychiat Quart.* 2000; 71(1): 31-45.

123. Tutty S, Simon G, Ludman E. Telephone counseling as an adjunct to antidepressant treatment in the primary care system: A pilot study. *Eff Clin Pract.* 2000; 4: 170-178.

124. Escobar JI, Gara MA, Diaz-Martinez AM. Effectiveness of a time-limited cognitive behavior therapy-type intervention among primary care patients with medically unexplained symptoms. *Ann Fam Med.* 2007; 5(4): 328-335.

125. Fortney JC, Pyne JM, Kimbrell TA, et al. Telemedicine-based collaborative care for posttraumatic stress disorder: A randomized clinical trial. *JAMA Psych.* 2015; 72(1): 58-67.

126. Swindle R, Rao JY, Helmy A, et al. Integrating clinical nurse specialists into the treatment of primary care patients with depression. *Int J Psychiat Med.* 2003; 33(1): 17-37.

127. Rollman BL, Belnap BH, Mazumdar S, et al. A randomized trial to improve the quality and treatment for panic and generalized anxiety disorders in primary care. *Arch Gen Psychiatry.* 2005; 62: 1332-1341.

128. Bruce ML, Have TRT, Reynolds CF, et al. Reducing suicidal ideation and depressive symptoms in depressed older primary care patients: A randomized controlled trial. *JAMA.* 2004; 291(9): 1082-1091.

129. Hilty DM, Marks S, Wegelin J, Callahan EJ, Nesbitt TS. A randomized, controlled trial of disease management modules, including telepsychiatric care, for depression in rural primary care.

Psychiatry. 2007 (February): 58-65.

130. Alexopoulos GS, Reynolds CF, Bruce ML, et al. Reducing suicidal ideation and depression in older primary care patients: 24-month outcomes of the PROSPECT study. *Am J Psychiatry.* 2009; 166: 882-890.

131. Roy-Byrne PP, Katon W, Cowley DS, Russo J. A randomized effectiveness trial of collaborative care for patients with panic disorder in primary care. *Arch Gen Psychiatry.* 2001; 58: 869-876.

132. Levkoff SE, Coakley E, Herr EC, et al. Design and sample characteristics of the PRISM-E multisite randomized trial to improve behavioral health care for the elderly. *J Aging Health.* 2004;16(1):3-27.

133. de Bruin S, Heijink R, Lemmens LC, Struijs JN, Baan CA. Impact of disease management programs on healthcare expenditures for patients with diabetes, depression, heart failure, or chronic obstructive pulmonary disease: A systematic review of the literature. *Health Policy 101.* 2011: 101-121.

134. Von Korff M, Katon W, Bush T, et al. Treatment costs, cost offset, and cost-effectiveness of collaborative management of depression. *Psychosom Med.* 1998; 60:143-149.

135. Bureau of Labor Statistics. Consumer Price Index. 2015. http://www.bls.gov/cpi/cpid1501.pdf

136. Lave JR, Frank RG, Schulberg HC, Kamlet MS. Cost-effectiveness of treatments for major depression in primary care practice. *Arch Gen Psychiat.* 1998; 55:645-651.

137. Simon GE, Manning WG, Katzelnick DJ, et al. Cost-effectiveness of systematic depression treatment for high utilizers of general medical care. *Arch Gen Psychiatry.* 2001a; 58: 181-187.

138. Simon GE, Katon WJ, VonKorff M, et al. Cost-effectiveness of a collaborative care program for primary care patients with persistent depression. *Am J Psychiat.* 2001b; 158(10): 1638-1644.

139. Schoenbaum M, Unützer J, Sherbourne C, et al. Cost-effectiveness of Practice-Initiated Quality Improvement for Depression: Results of a Randomized Controlled Trial. *J Am Med Assoc*. 2001; 286(11): 1325-1330.

140. Simon GE, Von Korff M, Ludman EJ, et al. Cost-effectiveness of a program to prevent depression relapse in primary care. *Med Care.* 2002; 40(10): 941-950.

141. Thompson C, Kinmonth AL, Stevens, L, et al. Effects of clinical-practice guideline and practice-based education on detection and outcome of depression in primary care: Hampshire Depression project randomised controlled trial. *Lancet*. 2000; 355: 185-191.

142. Gask L, Dowrick C, Dixon C, et al. A pragmatic cluster randomized controlled trial of an educational intervention for GPs in the assessment and management of depression. *Psychol*

Med. 2004; 34: 63-72.

143. Katon WJ, Roy-Byrne P, Russo J, Cowley D. Cost-effectiveness and cost offset of a collaborative care intervention for primary care patients with panic disorder. *Arch Gen Psychiat.* 2002; 59: 1098-1104.

144. Pyne JM, Rost KM, Zhang M, et al. Cost-effectiveness of a primary care depression intervention. *J Gen Intern Med.* 2003; 18: 432-441.

145. Evers S, Goossens M, de Vet H, van Tulder M, Ament A. Criteria list for assessment Of methodological quality Of economic evaluations - CHEC. *Int J Technol Assess Health Care.* 2005; 21: 240-245.

146. Araya R, Flynn T, Rojas G, Fritsch R, Simon G. Cost-effectiveness of a primary care treatment program for depression in low-income women in Santiago, Chile. *Am J Psychiat.* 2006; 163: 1379-1387.

147. Katon WJ, Schoenbaum M, Fan MY, et al. Cost-effectiveness of improving primary care treatment of late-life depression. *Arch Gen Psychiat.* 2005; 62: 1313-1320.

148. Simon GE, Katon WJ, Lin EHB, et al. Cost-effectiveness of systematic depression treatment among people with diabetes mellitus. *Arch Gen Psychiat*. 2007; 64: 65-72.

149. Unützer J, Katon WJ, Fan MY, et al. Long-term cost effects of collaborative care for late-life depression. *Am J Manage Care.* 2008; 14:95-100.

150. Bosmans JE, Brook OH, van Hout HPJ, et al. Cost effectiveness of a pharmacy-based coaching programme to improve adherence to antidepressants. *Pharmacoeconomics.* 2007; 25(1): 25-37.

151. Simon GE, Ludman EJ, Rutter CM. Incremental benefit and cost of telephone care management and telephone psychotherapy for depression in primary care. *Arch Gen Psychiatry.* 2009; 66(10): 1081-1089.

152. Wells KB, Schoenbaum M, Duan N, Miranda J, Tang L, Sherbourne C. Cost-effectiveness of quality improvement programs for patients with subthreshold depression or depressive disorder. *Psych Serv.* 2007; 58 (10): 1269-1278.

153. Rost K, Pyne JM, Dickinson LM, and LoSasso AT Cost-Effectiveness of Enhancing Primary Care Depression Management on an Ongoing Basis. *Ann Fam Med*. 2005; 3(1): 7-14.

154. Reiss-Brennan B, Briot PC, Savitz, LA, Cannon W, Staheli R. Cost and quality impact of Intermountain's mental health integration program. *J Healthc Mang.* 2010; 55(2): 97-114.

155. Truven Health Analytics. Financing of behavioral health services within federally qualified health centers. SAMHSA. 2012 http://www.integration.samhsa.gov/financing/Financing

BH_Services_at_FQHCs_Final_7_23-12.pdf.

156. Dodoo MS, Krist AH, Cifuentes M, Green LA. Start-up and incremental practice expenses for behavior changes interventions in primary care. *Am J Prev Med.* 2008; 35(5S): S423-S430.

157. Personal communication, Neil Wallace, PhD.

158. Ivanova JI, Birnbaum HG, Kidolezi Y, et al. Direct and indirect costs of employees with treatment-resistant and non-treatment-resistant major depressive disorder. *Curr Med Res Opin.* 2010; 26(10): 2475-2484.

159. Bureau of Labor Statistics, 2014 http://www.bls.gov/cpi/cpid1412.pdf.

160. Taylor EF, Dale S, Peikes D, et al. Evaluation of the Comprehensive Primary Care Initiative: First annual report. Mathematica Policy Research. 2015. http://innovation.cms.gov/Files/reports/ CPCI-EvalRpt1.pdf. Accessed February 2015.

161. Institute for Clinical and Economic Review. Newest treatments for Hepatitis C, Genotype 1. 2015. http://www.ctaf.org/sites/default/files/assessments/ CTAF_HCV2_Final_Report_013015.pdf. Accessed February 2015.

162. M. J. Sepulveda, T. Bodenheimer, and P. Grundy, Primary care: Can it solve employers' health care dilemma? *Health Affairs*. 2008; 27(1): 151–158.1115

163. Waiver Workgroup on Plan-Provider Incentives: Straw Proposal Matrix, DHCS. http://www.dhcs.ca.gov/provgovpart/Documents/Waiver%20Renewal/MCO3_2.pdf. Accessed February 2015.

164. Jarvis D, Freeman J. Toolkit of promising practices for financing integrated care in the California safety net. 2011. http://www.ibhp.org/uploads/file/Dale%20Jarvis%20Promising%20Practice%20Tool%20Kit.pdf. Accessed March 2015.

165. IHI 90-Day R&D Project Final Summary Report: Integrating Behavioral Health and Primary Care. Cambridge, MA: Institute for Healthcare Improvement; March 2014. (Available at www.ihi.org).

166. Gerrity, M., Zoller, E., Pinson, N., Pettinari, C., & King, V. (2014). Integrating primary care into behavioral health settings: What works for individuals with serious mental illness. New York, NY: Milbank Memorial Fund.

167. California DHCS, Meeting Summary of the Mental Health and Substance Use Disorder Services (MHSUDS) Integration Task Force, November, 2014, available at http://www.dhcs.ca.gov/ provgovpart/Documents/Waiver%20Renewal/MHSUDS_TF_Summary.pdf

168. The Second Annual California Innovations Summit on Integrated Care. Taking stock of health care reform and Medi-Cal expansion: The good, the challenging, and shaping what's next. 2014. http://www.cibhs.org/sites/main/files/file-

attachments/2014_integration_summit_report-challenges_and_improvement_strategies.pdf

169. Integrated Behavioral Health Project. The Mental Health Services Act's (MHSA) contribution to integrated care. IBHP website. http://www.ibhp.org/index.php?%20section=pages&cid=152. Published 2007. Accessed February 2015.

170. Medicaid.gov. Telemedicine. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Delivery-Systems/Telemedicine.html. Accessed March 2015.

171. Cherokee Health Systems. http://www.cherokeetraining.com/. Accessed February 2015.

172. Veterans Health Administration. A primer on VA's translating initiatives for depression into effective solutions (TIDES) project. 2008. http://www.hsrd.research.va.gov/publications/internal/depression_primer.pdf

173. AIMS Center. Collaborative care. http://aims.uw.edu/collaborative-care. Accessed February 2015.

174. Conis E. A model for mental health integration. 2009. http://www.hpm.org/us/a14/4.pdf.

175. Gilbody S, Bower P, Whitty P. Costs and consequences of enhanced primary care for depression. *Br J Psych* 2006; 189:297-308.

APPENDICES

Appendix A. Key National Models for BHI

Summary of Select National BHI Programs

Program	Overview of Key Features
Cherokee Health Systems (Behavioral Health Consults)	Cherokee Health Systems is a network of FQHCs and community mental health organizations in Tennessee that operates over 50 clinic sites throughout the state. Core features of the model include: • ***Screening****:* Primary care team members screen every patient for behavioral health conditions to triage care accordingly and identify treatment and care support needs of each patient. • ***Team-based care****:* Generalist Behavioral Health Consultants (BHCs) are typically licensed psychologists and are fully embedded on the care team and co-manage patients found to have behavioral health conditions. BHCs are also a standard part of all well-child visits and prenatal care appointments to address psychosocial challenges, provide screening, and provide patient education and prevention. • ***Integrated workflow****:* BHCs provide rapid access to behavioral health treatment on the same day – often during the same patient visit. Consultant psychiatrists are also available to provide specialized consultative services to PCPs and BHCs for complex cases. A robust orientation is provided to all members of the care team, including analytical and administrative staff, to provide an overview of the mission of integration and scope of each person's position within the care team. BHCs receive additional specialized training on integrated care. • ***Shared information system****:* Members of the care team share access to the same EHR that facilitates information exchange across practitioners. • ***Systematic measurement****:* EHRs are used to track patient outcomes, share notes, and obtain data on core health outcomes to track improvements and adjust patient care as needed. Cherokee Health Systems has additionally trained numerous other health systems on its model through its Primary Behavioral Health Integration Academy.
IMPACT Model/Collaborative Care	Developed by the University of Washington, Collaborative Care, or the IMPACT model, integrates treatment for a range of mood and anxiety disorders, as well as broader mental health conditions into primary care settings. The AIMS Center based at the University of Washington focuses on the implementation of Collaborative Care and has worked with hundreds of practices nationally and internationally to apply and adapt the model. Core features of the IMPACT model include: • ***Screening***: Care team members screen patients for depression using validated screening tools, such as the PHQ-9, a nine item questionnaire.

Program	Overview of Key Features
	• ***Team-based care***: Primary care and behavioral health providers collaborate using shared treatment plans that are individualized to meet each patient's unique circumstances and goals. Core members of the team include a primary care physician (PCP), care manager, and psychiatric consultant. The care managers may be nurses, social workers, psychologists, or other trained health professionals. • ***Integrated Workflows***: Care managers support PCPs in coordinating treatment, providing brief counseling, providing proactive follow-up, notifying PCPs when outcomes are not improving, supporting medication management, and communicating any treatment changes to psychiatric consultant team members. Psychiatric consultants support PCPs and care managers when diagnosing patients, and in designing treatment plans and adjustments when patients are not experiencing improvements (i.e., stepped care). Psychiatric consultants may work directly with patients in complex situations. • ***Systematic Measurement*:** Patient progress is tracked and regularly monitored in a central registry, and workflow adjusted so more resources can be allocated to patients who are not improving as expected.
Intermountain Healthcare Mental Health Integration Program	Intermountain Healthcare is an integrated health system of over 20 hospitals and 200 outpatient clinics serving the metropolitan area of Salt Lake City, Utah. The health system built on existing institutional structures for coordinated care to integrate primary care and behavioral health services. Features of this model are being applied to health systems nationally, including in Maine, Mississippi, New Hampshire, and Oregon. Core features of the model include: • ***Screening***: All patients receive a comprehensive mental health assessment and are screened for depression, anxiety, and other behavioral health concerns using validated screening tools. • ***Team-based care***: Mental health practitioners are embedded with the primary care team to co-manage care and may include psychiatrists, nurse practitioners, social workers, psychologists, peer specialists, or other professionals. Families are also considered part of the care team and included in treatment plans. • ***Integrated workflows***: All members of the care team are housed within the same facility to facilitate seamless care transitions. Mental health practitioners rotate through clinics and are assigned in blocks of hours based on the unique patient mix at each clinic. For example, practices with more complex caseloads may have a rotating psychiatrist to handle appointments for a day a week, whereas practices with more mild-to-moderate cases may use psychiatric specialists for less time each week. Extensive training is provided to all team members on the goals and features of integration and each individual's role within the model and care team. • ***Shared information-systems***: A secure, central health information exchange is available to all team members to track and upload patient data, communicate, coordinate treatment plans, and measure patient outcomes.

Program	Overview of Key Features
	• ***Systematic measurement*:** A core set of measurement tools are used to document patient outcomes, assess the allocation of resources, and build consensus around integration needs. • ***Engagement with broader community***: Intermountain Healthcare also establishes formal relationships with community resources to refer patients to broader social supports to reinforce treatment plans.
Department of Veterans Affairs (VA)	The VA integration program built on a strong existing infrastructure to implement a national strategy for BHI that focuses exclusively on SMI and depression. The program involves several individual projects that are coordinated but are individualized to each site's unique needs. Core features of the program include: • ***Screening***: PCPs provide universal screening of depression and PTSD. Patients with positive screens are assessed for behavioral health needs using structured protocols performed by care managers. • ***Team-based care***: Depression care managers are included on the primary care team and make recommendations to the PCP about treatment, provide proactive patient follow-up, and communicate with consultant psychiatric specialists when problems arise. Case managers are typically nurses or social workers. • ***Integrated Workflows***: Care managers are supported by formal review and consultation with mental health specialists, who also see more complex patient cases as needed. Mental health and primary care team members are co-located and share responsibility for treatment development, monitoring, and ongoing management. • ***Shared information system****:* EHRs are used to facilitate provider communication, report data, and provide point-of-care decision support. • ***Systematic Measurement***: A standard set of performance measures is used to track patient outcomes and improvements.

Appendix B. Sample Worksheets for Practice-Level Expenses Associated with BHI

A. Start-Up Expenses

Table 1 - Start-up expenditure data (prior to baseline)

Practice Number:
Start-up period from Calendar Month and Year (MM/DD/YYYY): to

	Total # of staff FTEs	Total hours devoted per staff category (over entire start-up period)	Average monthly Salary per 1 FTE	Average monthy Benefits per 1 FTE	Did you hire any new staff specifically for the intervention during the start-up study period? (if yes, specify FTE and start-up month)	New staff FTE	New staff start date	Notes?
Section A1. Direct Staff Start-up Time								
Training								
Clinicians								
PA								
Health Coach								
Behavioral Health Counselor								
Medical Assistant								
Front Desk								
Care Coordinator-RN								
Biller								
Referrals Coordinator								
Section A2. Indirect Staff Start-up (Adminstrative)								
Practice Administrator								
Other (please list staff category; use lines below)								
Medical Director/PI								
CFO								
COO or program personnel								
CEO								
MA Supervisor								
Front Desk Supervisor								
Billing Supervisor								

	Estimated cost ($)
Section B. Non-recurrent Start-up Expenditures (non-staff)	
Space purchases (construction of health coaching rooms)	
Computer hardware and any equipment purchases	
Computer software purchases	
Purchase of rights for an tool, instrument or measure	
Travel and transportation	
Other Asset purchases	

	Expenditure on all overhead items for the period ($)	Average % of item devoted to ACT project
Section C. Overhead Start-up Expenditures (non-staff)		
Building and occupancy lease/rental during startup		
Equipment lease/rental during startup		
Insurance (NOT malpractice) & finance fees		
Electronic software subscription fees		
Phone and utilities		
Administrative supplies and services		
Other expenses:		

Notes:

Source: Adapted for Advancing Care Together (ACT) program from: Dodoo MS, Krist AH, Cifuentes M, Green LA. "Start Up and Incremental Practice Expenses for Behavior Change Interventions in Primary Care." *American Journal of Preventive Medicine*, Nov 2008; 35(5 Suppl):S423-430. [157, 155]

Table 1D - Development expenditure data (prior to baseline)

Practice Number:	0		
Start-up period from Calendar Month and Year (MM/DD/YYYY):		to	

	Total # of staff FTEs	Total hours devoted per staff category (over entire start-up period)	Average monthly Salary per 1 FTE	Average monthy Benefits per 1 FTE
Section A. Staff Development Time				
Staff Meetings with Community Reach				
Practice Administrator			$0.00	$0.00
Medical Director/PI			$0.00	$0.00
Health Coach			$0.00	$0.00
Behavioral Health Counselor			$0.00	$0.00
Development of Program Activities				
Practice Administrator			$0.00	$0.00
Health Coach			$0.00	$0.00
Medical Director/PI			$0.00	$0.00
Develop Workflow and Process Diagrams				
Medical Director/PI			$0.00	$0.00
Practice Administrator			$0.00	$0.00
Tool Development				
Health Coach			$0.00	$0.00
Practice Administrator			$0.00	$0.00
Website Redesign				
Practice Administrator			$0.00	$0.00
Medical Director/PI			$0.00	$0.00
Administrative and Legal Activities				
Practice Administrator			$0.00	$0.00
Westminster Medical Director/PI			$0.00	$0.00
Clinicians			$0.00	$0.00
Health Coach			$0.00	$0.00

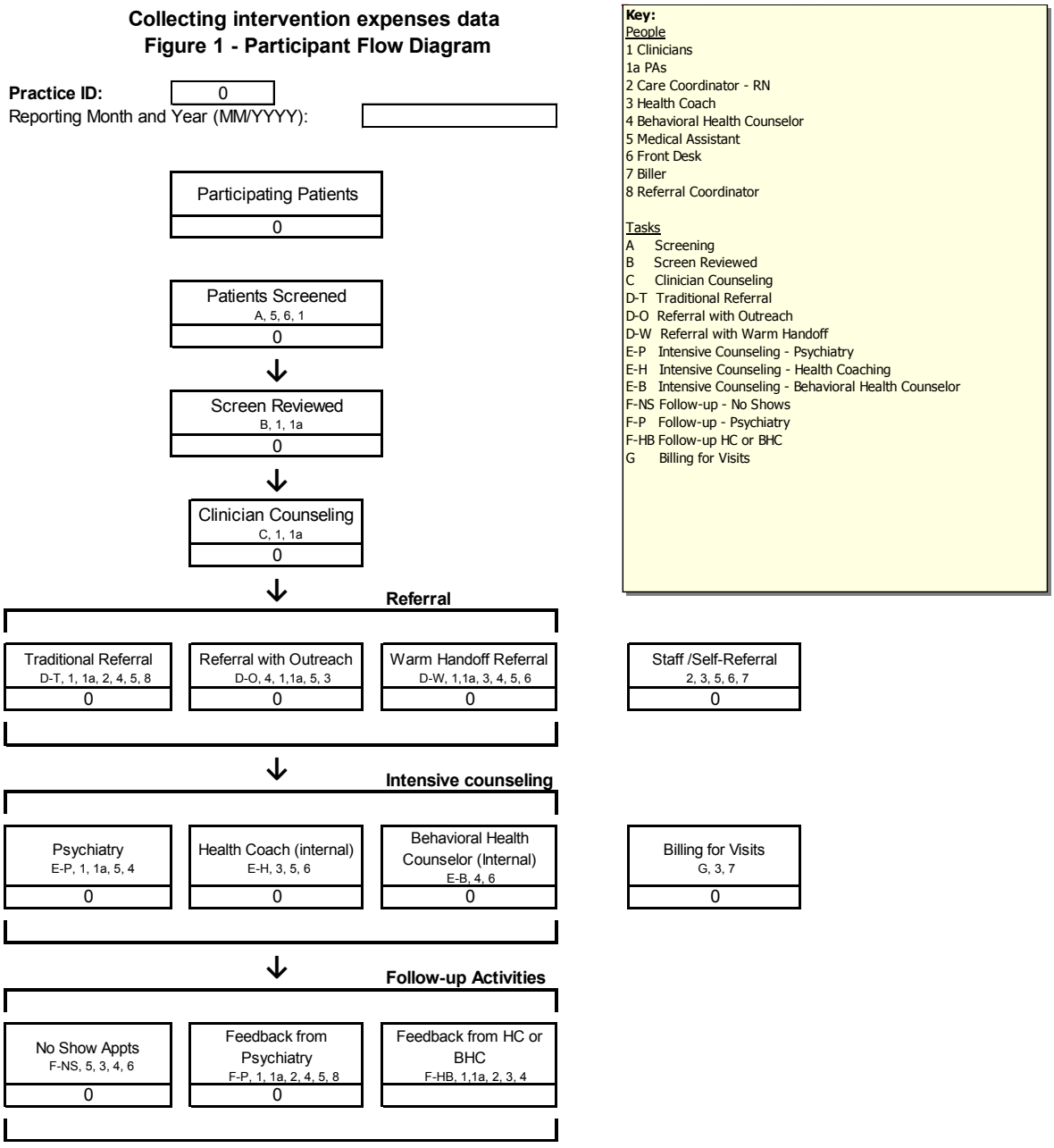
	Estimated cost ($)
Section B. Non-recurrent Development Expenditures (non-staff)	
Travel and transportation	$0.00
Other purchases	$0.00

	Expenditure on all overhead items for the period ($)	Average % of item devoted to ACT project
Section C. Overhead Development Expenditures (non-staff)		
Building and occupancy lease/rental during startup	$0.00	0.0%
Equipment lease/rental during startup	$0.00	0.0%
Insurance (NOT malpractice) & finance fees	$0.00	0.0%
Electronic software subscription fees	$0.00	0.0%
Phone and utilities	$0.00	0.0%
Administrative supplies and services	$0.00	0.0%
Other expenses:	$0.00	0.0%

Notes (please describe the items are you including in Section B and C above. Please note if any expenditures are both start-up and developmental items):

Source: Adapted for Advancing Care Together (ACT) program from: Dodoo MS, Krist AH, Cifuentes M, Green LA. "Start Up and Incremental Practice Expenses for Behavior Change Interventions in Primary Care." *American Journal of Preventive Medicine*, Nov 2008; 35(5 Suppl):S423-430. [157, 155]

B. Baseline and Ongoing Expenses



Source: Adapted for Advancing Care Together (ACT) program from: Dodoo MS, Krist AH, Cifuentes M, Green LA. "Start Up and Incremental Practice Expenses for Behavior Change Interventions in Primary Care." *American Journal of Preventive Medicine*, Nov 2008; 35(5 Suppl):S423-430. [157, 155]

Collecting intervention expenses data
Table 2 - Average Salary information for each type of direct staff per FTE

Practice ID:	0
Indicate the Reporting Period:	0
Reporting Month and Year (MM/YYYY):	
Date Completed:	

	Current Monthly base salary per FTE ($)	Current Monthly Fringe Benefits per FTE ($)	Average Current other salary or benefit expenditures ($)	Total Average Compensation per FTE	Total # of FTEs in Practice	Current monthly time spent on formal training for ACT
Direct Staff Category						
Physicians				$0.00		
PAs				$0.00		
Health Coach				$0.00		
Behavioral Health Counselor				$0.00		
Medical Assistant				$0.00		
Front Desk				$0.00		
Care Coordinator - RN				$0.00		
Biller				$0.00		
Referrals Coordinator				$0.00		
Administrative Staff						
Administrative and clerical support staff	$0.00	$0.00	$0.00	$0.00	0.0	0
			$0.00	$0.00	0.0	
			$0.00	$0.00	0.0	
			$0.00	$0.00	0.0	
Supervision/Management staff used in month	$0.00	$0.00	$0.00	$0.00	0.0	0.0
MA Supervisor				$0.00		
Front Desk Supervisor				$0.00		
Billing Supervisor				$0.00		
				$0.00		
				$0.00		
Other overhead staff expenses	$0.00	$0.00	$0.00	$0.00	0.0	0.0
				$0.00		
				$0.00		
				$0.00		
				$0.00		

Notes:

Source: Adapted for Advancing Care Together (ACT) program from: Dodoo MS, Krist AH, Cifuentes M, Green LA. "Start Up and Incremental Practice Expenses for Behavior Change Interventions in Primary Care." *American Journal of Preventive Medicine*, Nov 2008; 35(5 Suppl):S423-430. [157, 155]

Table 3 - Basic Operating Expenditures

Practice ID:	
Indicate the Reporting Period:	1. Baseline month 2. Midpoint month 3. Month before end of steady state
Reporting Month and Year (MM/YYYY):	
Date Completed:	
Number of hours facility open in reporting month:	

	Total number of times the activity is completed in the month (Column 1)	% of activity by specific staff type for the month for Column 1	Average time in **minutes** per activity	Total Minutes spent per month on each activity
Section A1. Recurrent Expenditures (Direct staff)				
Physicians				
Screening	0			0.0
Screen reviewed	0			0.0
Clinician Counseling	0			0.0
Referral Traditional	0			0.0
Referral with Outreach	0			0.0
Referral with Warm Handoff	0			0.0
Intensive Counseling - Psychiatry	0			0.0
Follow-up - Feedback from Psychiatry	0			0.0
Follow-up - Feedback from HC and BHC				0.0
PAs				
Screening	0			0.0
Screen reviewed	0			0.0
Clinician Counseling	0			0.0
Referral Traditional	0			0.0
Referral with Outreach	0			0.0
Referral with Warm Handoff	0			0.0
Intensive Counseling - Psychiatry	0			0.0
Follow-up - Feedback from Psychiatry	0			0.0
Follow-up - Feedback from HC and BHC				0.0
Medical Assistants				
Screening	0			0.0
Screen reviewed	0			0.0
Referral Traditional	0			0.0
Referral with Outreach	0			0.0
Referral with Warm Handoff	0			0.0
Staff/Self-Referral	0			0.0
Intensive Counseling - Health Coaching	0			0.0
Follow-up No shows	0			0.0
Follow-up - Feedback from Psychiatry	0			0.0
Health Coach				
Referral with Outreach	0			0.0
Referral with Warm Handoff	0			0.0
Staff/Self-Referral	0			0.0
Intensive Counseling - Health Coaching	0			0.0
Follow-up No shows	0			0.0
Follow-up - Feedback from HC and BHC				0.0
Billing	0			0.0
Behavioral Health Counselor				
Referral with Warm Handoff	0			0.0
Referral Traditional	0			0.0
Referral with Outreach	0			0.0
Intensive Counseling - Psychiatry	0			0.0
Intensive Counseling - BHC	0			0.0
Follow-up No shows	0			0.0
Follow-up - Feedback from Psychiatry	0			0.0
Follow-up - Feedback from HC and BHC				0.0
Front Desk				
Screen reviewed	0			0.0
Referral with Warm Handoff	0			0.0
Staff/Self-Referral	0			0.0
Intensive Counseling - Health Coaching	0			0.0
Intensive Counseling - BHC	0			0.0
Follow-up No shows	0			0.0
Care Coordinator-RN				
Referral Traditional	0			0.0
Staff/Self-Referral	0			0.0
Follow-up - Feedback from Psychiatry	0			0.0
Follow-up - Feedback from HC or BHC				0.0
Biller				
Staff/Self-Referral	0			0.0
Billing	0			0.0
Referral Coordinator				
Referral Traditional	0			0.0
Follow-up - Feedback from Psychiatry	0			0.0

Source: Adapted for Advancing Care Together (ACT) program from: Dodoo MS, Krist AH, Cifuentes M, Green LA. "Start Up and Incremental Practice Expenses for Behavior Change Interventions in Primary Care." *American Journal of Preventive Medicine*, Nov 2008; 35(5 Suppl):S423-430. [157, 155]

Table 3, Continued.

	Average % devoted to intervention
Section A2. Recurrent Expenditure (Indirect Staff)	
Administrative and clerical support staff	
Supervision/Management staff used in month	
Other overhead staff expenses	

	Estimated cost ($)
Section B. Non-recurrent expenditures (non-staff)	
Space purchases	
Computer hardware and any equipment purchases	
Computer software purchases	
Purchase of rights for an tool, instrument or measure	
Travel and transportation	
Other asset purchases:	

	Sum of all expenditure for month ($)	Average % devoted to intervention
Section C. Overhead (NOT direct) expenditures		
Building and occupancy lease/rental in month		
Equipment lease/rental in month		
Phone and utilities in reporting month		
Insurance(NOT malpractice) & finance fees		
Travel and transportation in month		
Administrative supplies and services in month		
Other expenses:		

Section D. Additional expenditure items

Were there additional practice expenditure items that even though not directly related to your ACT intervention, were triggered by the intervention?

List the items and indicate the expenditure	Expend. Amount
1	
2	
3	
4	

Notes:

Source: Adapted for Advancing Care Together (ACT) program from: Dodoo MS, Krist AH, Cifuentes M, Green LA. "Start Up and Incremental Practice Expenses for Behavior Change Interventions in Primary Care." *American Journal of Preventive Medicine*, Nov 2008; 35(5 Suppl):S423-430. [157, 155]

SAMHSA Proforma Tool for Business Case

BUSINESS CASE FOR BEHAVIORAL HEALTH PRO FORMA MODEL

Core Assumptions:

Panel size	1500	1500		Average Visit Scheduled Time	15	minutes
Encounters	4200	4200		Estimated time saved by diverting	11	minutes
Payer Mix				to a behaviorist		
Medicaid		40%		Average visits per hour	3	
Medicare		12%		Transition training time	16	hours
Commercial		8%				
Sliding fee scale		40%		SBIRT screenings that triage for intevention	16%	
Average Reimbursement per visit		$135		Projected proportion that could be diverted to	50%	
Medicare SBIRT Reimbursement				Behaviorist		
G0396		$ 29.62		Slots created as a result of integration model	246.4	
G0397		$ 57.69				
Medicaid SBIRT Reiml	H0049			Estimated Medicare SBIRT Screens	504	
H0049		$24.00		Estimated Medicaid SBIRT Screens	1680	
H0050		$48.00		Estimated Medicare Screen & Intervention	80.64	
				Estimated Medicaid Screen & Intervention	268.8	
Provider Hourly Rate		$ 72.00		Medicare encounters	504	
RN Hourly Rate		$ 27.60		Medicaid encounters	1680	
Medical Assistant Hourly Rate		$ 15.60				
Behaviorist Hourly Rate		$39.06	$81,250	$65,000 Base salary	25% Benefits	
				2080 Hours worked a year		

Costs		**Salary Resource**	**Time**	**Lost Revenue**	**Totals**	
S	Screening					
I	Intervention	$ 40,625.00			$	40,625.00
T	Transition Costs	$ 1,843.20	16	$6,480	$	8,323.20
	Subtotal				**$**	**48,948.20**
Revenue						
X	Screening Reimbursement	$ 55,248.48			$	55,248.48
P	Gains in Productivity	$33,264.00				$33,264
R	Reimbursement for Screen and Treatment	$ 8,714.76			$	8,714.76
					$	**97,227.24**
Net Business Case					**$**	**48,279.04**

Source: SAMHSA-HRSA. The business case for the integration of behavioral health and primary care. Accessed at: http://www.integration.samhsa.gov/resource/the-business-case-for-the-integration-of-behavioral-health-and-primary-care, March 4, 2015.