

The State of Integrated Primary Care and Behavioral Health in the United States

2022





Having a mental health clinician (in my case, a social worker) in our community health center when I was practicing family medicine was crucially important. The fact that I could “walk someone down” to her office to get help for acute distress was useful to me and beneficial to the patient. But there was also an educational aspect to it: I would get feedback from her that improved my care of future patients. Because we shared parts of the same medical records, I could also see her comments about other patients of mine that she had seen, improving my sensitivity to mental health issues in those patients. Similarly, she would occasionally bring me patients whom she had seen to get their medical problems taken care of. It was collaboration in the best sense.



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EXECUTIVE SUMMARY

Access to behavioral health services in the United States is becoming increasingly difficult and, at the same time, the need for these services is growing. Fifteen to twenty percent of adults in the United States report ever having been diagnosed with depression or mental illness and 10-15% report suffering severe psychological distress in the past year. Fewer than 50% of those with a mental illness report receiving care in past year.

The objective of this report is: 1) to explore and describe the current state of Integrated Behavioral Health in Primary Care, 2) to assess and describe the Integrated Behavioral Health practice workforce and 3) evaluate the role of Integrated Primary Care and Behavioral Health in providing equitable access to and delivery of behavioral health services. This report consists of baseline data on mental, emotional, and behavioral health needs in the United States followed by a robust literature review on the current state of integrated primary care and behavioral health, various models of integrated care, and the improved outcomes associated with integrated care.

The lack of adequate access to care for people with mental health conditions and behavioral health needs is multifactorial and includes a shortage or maldistribution of providers, stigma in accessing care and prohibitive cost. Integrating behavioral health with primary care has been proposed as a solution to increasing access and decreasing fragmentation of care.

Integrated care is associated with improved outcomes in depression and anxiety and physicians report integrated care decreases their own personal stress level and improves the care provided by their practice. Integrated care may remove stigma associated with mental health care and increase access to behavioral health services.

118,500 primary care physicians are co-located with nearly 140,000 behavioral health clinicians in 23,000 primary care practices. (20% of primary care physicians, 19% of behavioral health clinicians, 38% of primary care practices). Primary care physicians provide 45% of visits to patients with depression and/or anxiety, of which about half are co-managed with a non-physician behavioral health clinician. Most often, care for patients with mental illness (visits and prescriptions) is provided by a combination of primary care and non-physician behavioral health.

Through in-depth interviews, the report includes 4 case studies of various integrated care practices, identifying examples of barriers to and facilitators of integrated care. Payment reform that allows for flexible delivery of behavioral health services was viewed as a crucial step to increasing integrated care. Physical space and shared medical records were reported as necessary elements to integrated care.

Among high need communities, there appears to be moderate overlap with integrated primary care clinics and/or of Substance Abuse and Mental Health Services Administration (SAMHSA) facilities. For example, in New York City, 10% of co-located primary care and behavioral health clinics and 20% of SAMHSA facilities are in the highest need communities. However, many integrated clinics are not located in the highest need communities. A stronger investment in integrated primary care and behavioral health may improve access to mental health services and improve patient and community health outcomes.

Because multiple models of integrated primary care are associated with better individual and population health outcomes, it is important to focus collective efforts on increasing the spread and availability of integrated primary care rather than limiting resources or policy efforts to any single or narrowly defined integrated care model.

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SECTION 1

The State of Behavioral Health in the United States: An Environmental Scan and Review of the Literature

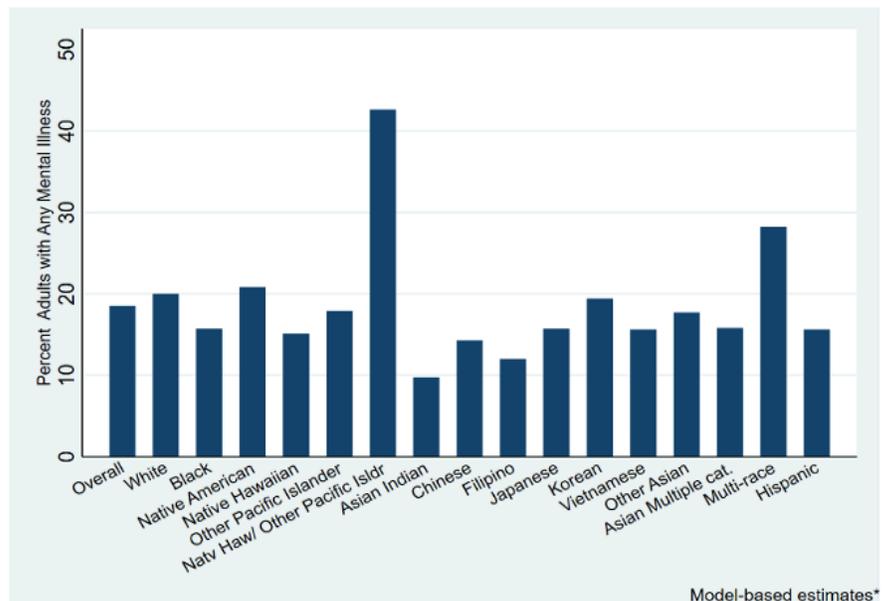
During the COVID-19 pandemic, the U.S. has seen an unprecedented rise in mental, emotional, and behavioral health conditions.¹

According to the Kaiser Family Foundation, the average percent of adults in the U.S. reporting symptoms of anxiety disorder and/or depressive disorder increased from 11% between January and June 2019 to 41% in January 2021.² This report showed that 56% of young adults aged 18 to 24 reported symptoms of anxiety and /or depressive disorder and young adults compared to all adults were more likely to report substance use (25% vs 13%) and suicidal thoughts (26% vs 11%). In addition, this report found that 53% of adults in households with job loss or lower incomes reported symptoms of mental illness compared to 32% of those without job or income loss. Further, this report found that the COVID-19 pandemic disproportionately affected the behavioral health of communities of color.

Data from the U.S. Government Accountability Office also showed that the COVID-19 pandemic increased social isolation and stress contributing to higher rates of anxiety and depression symptoms and increased substance use in the U.S.³ According to the GAO, six populations at highest risk of experiencing the behavioral health effects of the COVID-19 pandemic include people from certain racial and ethnic groups, children and adolescents, young adults, people with pre-existing behavioral health conditions, people facing financial distress, and health care workers.

Undiagnosed and untreated behavioral health conditions often have physical manifestations and are associated with higher healthcare expenditure.⁴ Without systems in place to routinely screen patients for behavioral health conditions and substance use disorder in the primary care setting and without opportunities to directly link patients with behavioral health conditions to behavioral health care services, it is extremely challenging to meet patients' behavioral health care needs.

Figure 1. Adults with any Mental Illness in the Past Year 2015-2018



Unfortunately, there is a shortage of behavioral health care providers, with 149 million people living in a designated mental health professional shortage area as of 2022.⁵ In addition, data from the 2020 National Survey on Drug Use and Health showed that only 46% of US adults with mental illness received treatment in 2020⁶ and, according to the National Alliance on Mental Illness, among US adults who received mental health services in 2020, 17.7 million experienced delays or cancellations in appointments, 7.3 million experienced delays in getting prescriptions, and 4.9 million were unable to access needed care.⁷

Furthermore, maternal mental health has been adversely affected by the COVID-19 pandemic⁸ and comprehensive initiatives to address maternal mental health using an integrated behavioral health approach are urgently needed.

In addition, during the COVID-19 pandemic, there has been a significant rise in overdose related deaths, with the Centers for Disease Control and Prevention estimating 107,000 deaths related to

drug overdose in 2021,⁹ and the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) reporting that in the 2020 National Survey on Drug use and Health, those who had used drugs in the prior year reported exacerbated use of alcohol or drugs in 2020.⁶

For patients with certain conditions, such as opioid use disorder, linkage to primary care is particularly important to prevent, screen for, and treat opioid associated infectious diseases such as HIV, hepatitis B, and hepatitis C, as there has been an alarming increase in opioid associated infectious diseases in regions of the U.S. most affected by the opioid epidemic and now the COVID-19 pandemic.¹⁰ For example, although hepatitis B is vaccine preventable, only 25% of U.S. adults are vaccinated against hepatitis B,¹¹ and recent data has shown that 36% of new hepatitis B infections are due to the opioid epidemic.¹² Implementing integrated substance use disorder and primary care services would provide opportunities for increased vaccination, testing, and linkage to care for opioid associated infectious diseases, to better prevent, diagnose and treat these infections.

Figure 2. Adults Ever had Major Depression 2015-2018

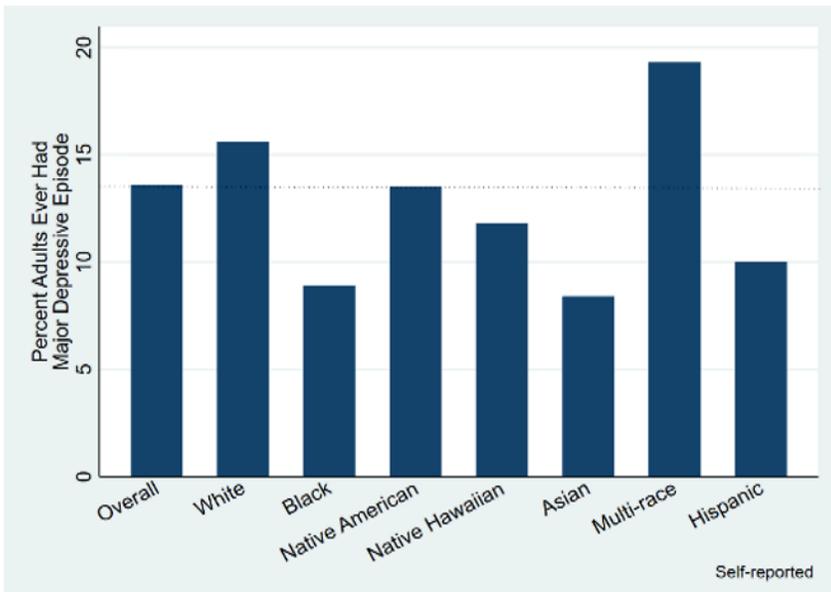
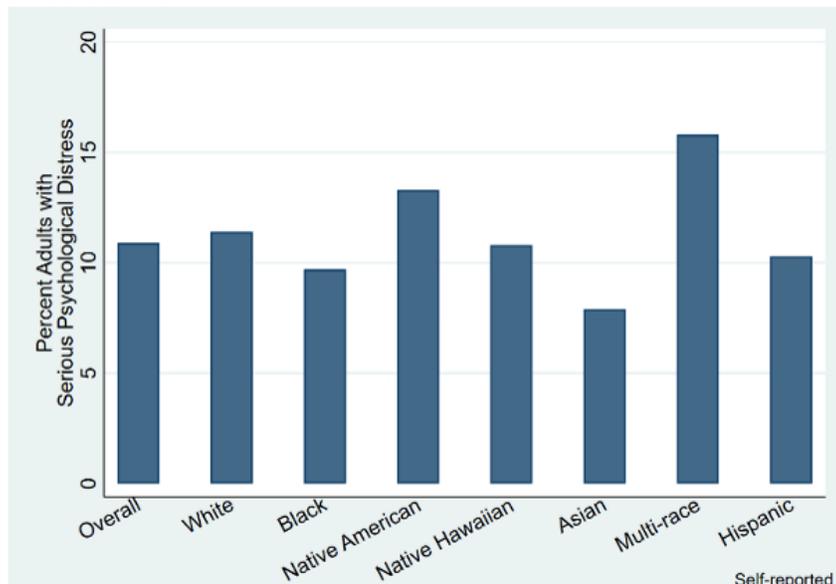


Figure 3. Adults Who Reported Serious Psychological Distress in the Past Year - Kessler Distress



For patients with chronic diseases such as diabetes and hypertension, underlying mental health conditions, if left undiagnosed and/or untreated, often contribute to poorer management of these chronic diseases, leading to worse clinical outcomes.^{13,14} Integration of primary care and behavioral health services would enable individuals with medical and behavioral health conditions to have their conditions simultaneously addressed and managed, potentially providing opportunities to improve health outcomes.¹⁵

Integrating behavioral health and primary care also has the potential to expand behavioral health care to individuals who may not otherwise seek behavioral health care due to difficulty accessing distant behavioral health clinic locations, stigma associated with seeking behavioral health care, and/or other barriers faced when referred to external behavioral health clinics by primary care.¹⁶

The U.S. has historically had fragmented systems of health care contributing to higher costs of care and poorer health outcomes.¹⁷ With the sharp rise in behavioral health conditions and substance use disorder during the COVID-19 pandemic, it is critically important that we move away from fragmented systems of care and adopt models of integrated behavioral care to comprehensively meet the needs of our patients.¹⁸ Learners also play a critical role in models of integrated behavioral health and their involvement is key to nurturing the next generation of leaders who will develop innovative models of integrated behavioral health to comprehensively serve the needs of our patients.

The following figures, combined with the first three figures, provide additional information about incidence and prevalence of behavioral health conditions prior to the COVID-19 Pandemic. We focused our analysis on data collected prior to the pandemic to avoid any potential for dismissing the current behavioral health crisis as simply due to COVID-19. Contemporaneous data collected in smaller samples has shown the COVID-19 pandemic has worsened mental, emotional, and behavioral health in all age groups and sociodemographic categories and has had a larger negative impact on vulnerable communities and individuals.

Figure 4. Youth (12-17 years) Ever had Several Days of Sadness or Dpression-2015-2018

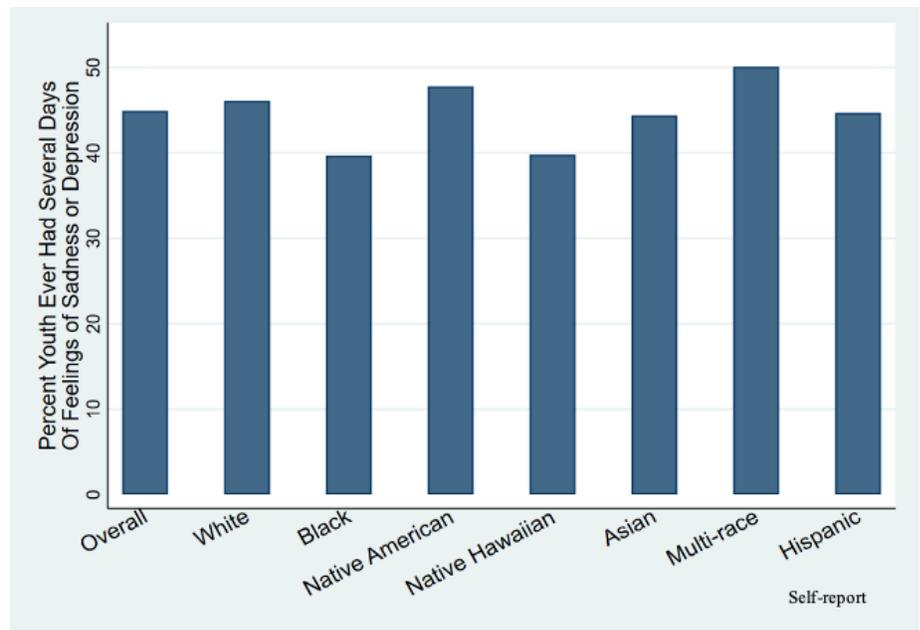


Figure 5. Adults with Substance Use Disorder in the Past Year

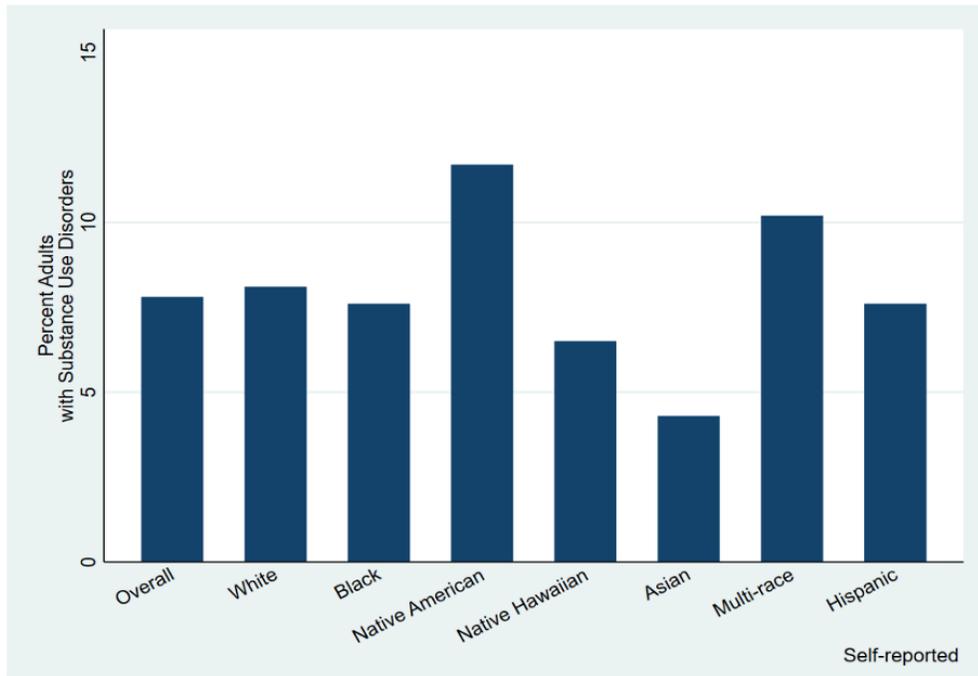
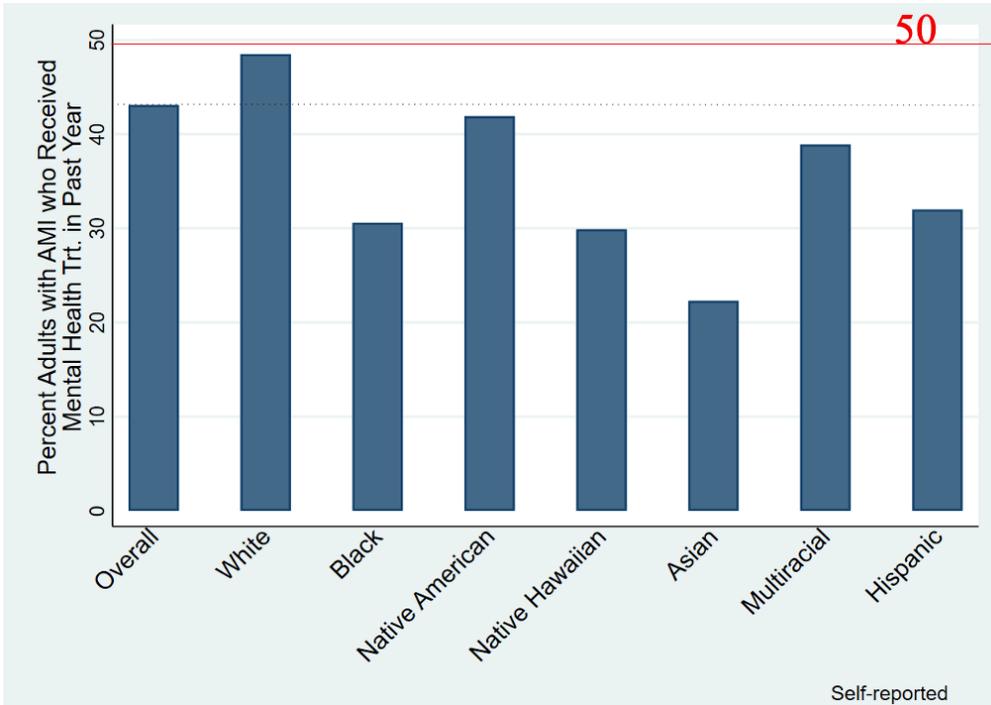


Figure 6. Percent Adults with Any Mental Illness Who Received Mental Health Treatment in Past Year



Most of the data available for analysis does not provide adequate collection or sampling to allow for race disaggregation. That is, most data are collected using a very limited set of race data. Other datasets truncate public use files to a smaller set of race categories. When available, we have attempted to disaggregate race. The Robert Graham Center joins others in efforts to increase race disaggregation in national datasets to allow for more precise and meaningful analysis.

Primary Care and Behavioral Health

Figure 7. Percent Adults with Any Mental Illness (AMI) by Number of Chronic Conditions

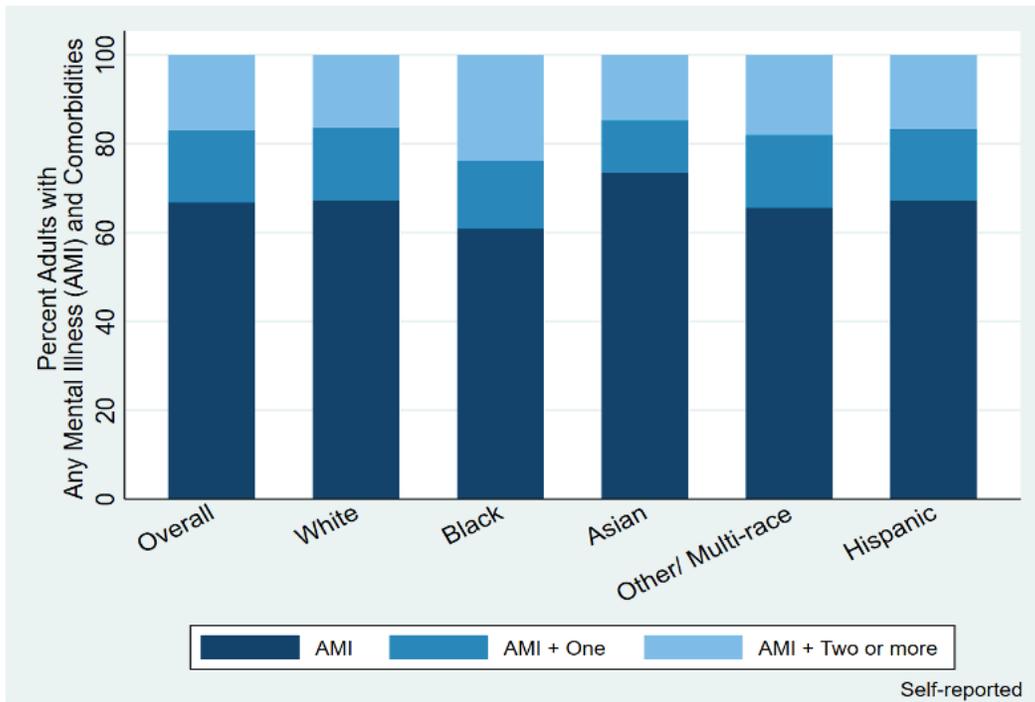
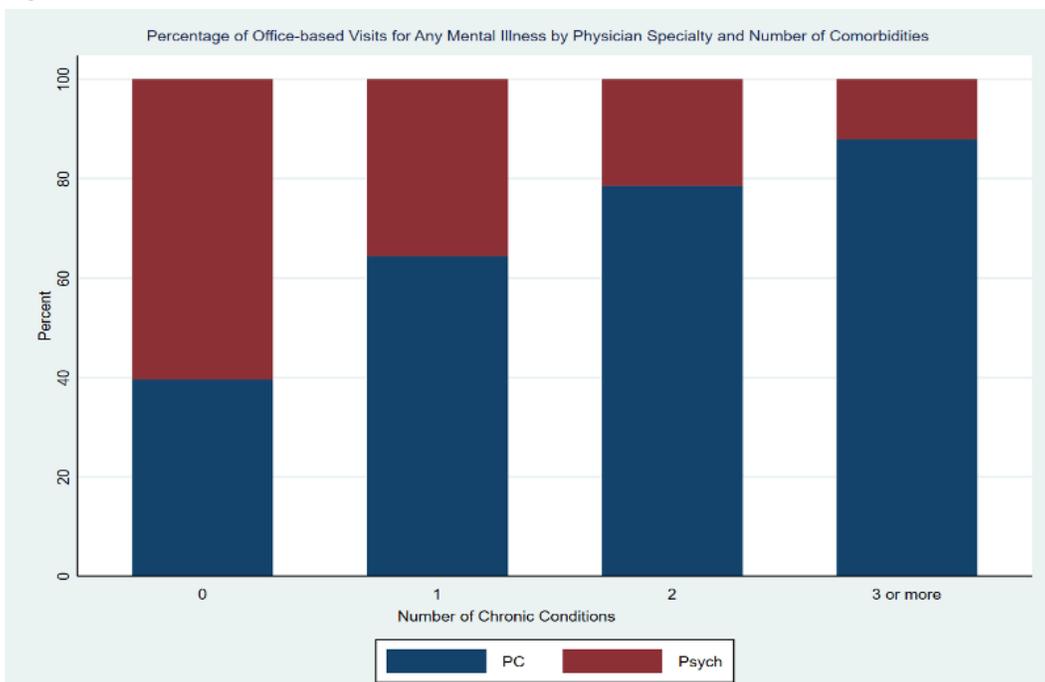
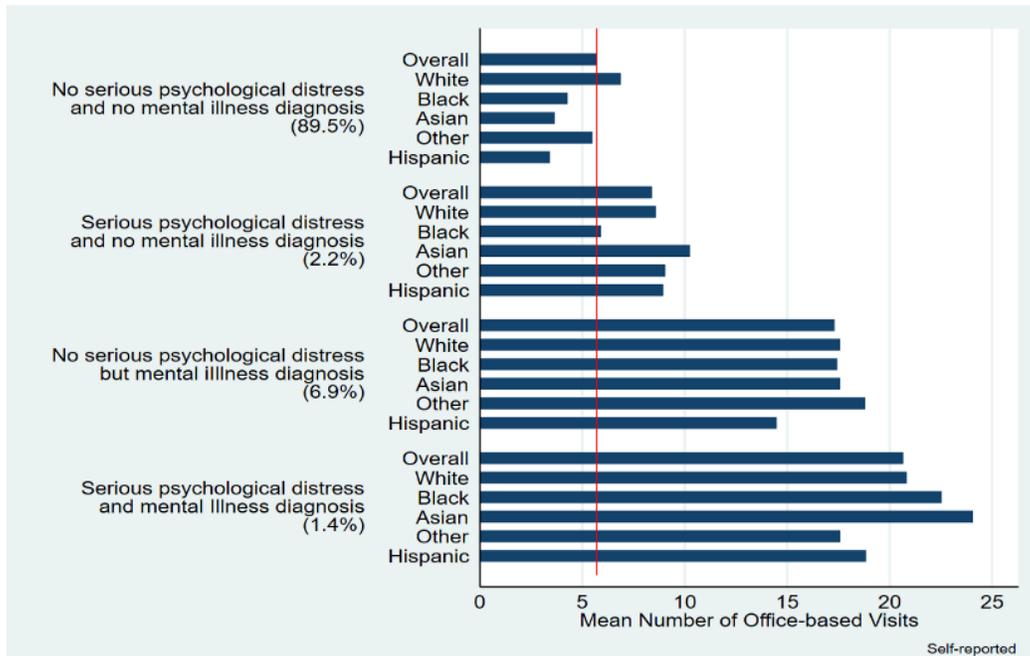


Figure 8. Percent of Encounters for Mental Illness and Co-morbid conditions



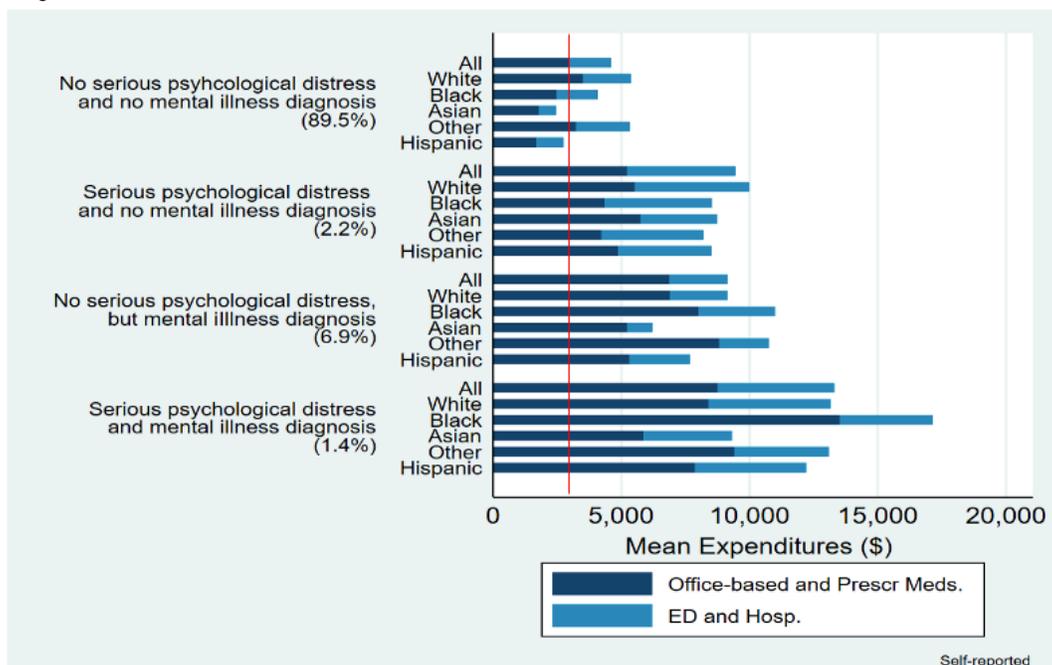
Office Visits and Expenditures in US Adults with Distress or Mental Illness

Figure 9. Number of Office-based Visits among US Adults by Psychological Distress and/or Diagnosis of Mental Illness



The red line represents the mean number of office visits overall for those with no distress and no mental illness diagnosis.

Figure 10. Healthcare Expenditure Among US Adults Reporting Psychological Distress and/or Diagnosis of Mental Illness

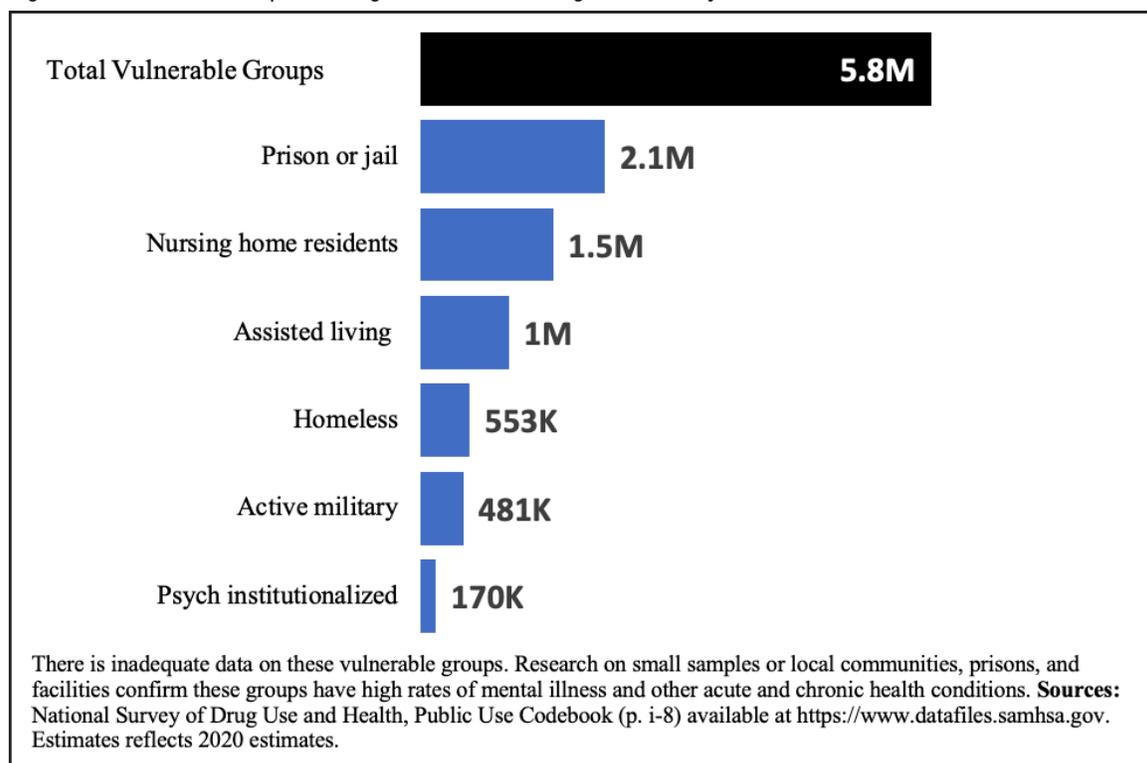


The red line represents the mean office-based visit and prescription medication expenditures overall for those with no distress and no mental illness diagnosis.

Figure 11. Estimated Excess Expenditures due to Psychological Distress and Mental Illness (Dollars (\$) in Billions)

	Overall	White	Black	Asian	Other/ Multi-race	Hispanic
Excess Expenditures attributable to Diagnosis of Mental Illness	65.7	50.7	6.7	0.5	3.7	4.1
Excess Expenditures attributable to Serious Psychological Distress	22.2	15.7	2.3	0.8	0.7	2.7
Excess Expenditures from Serious Psychological Distress and Diagnosis of Mental Illness	26.1	18.5	3.3	0.3	1.1	2.9
Total Excess Expenditures	\$114.1	\$84.9	\$12.4	\$1.6	\$5.5	\$9.7

Figure 12. Vulnerable Groups that Might Benefit from Integrated Primary Care and Behavioral Health



SECTION 2

Models of Integrated Behavioral Health

Integrated behavioral health encompasses a wide spectrum of access to behavioral health care within the primary care setting. Traditionally, the continuum of physical and behavioral health care integration has ranged from providing coordinated care to co-located care to integrated care. Many of the earliest models of integration were developed within the federally qualified health center setting, as well as other settings, such as the Veterans Administration and health maintenance organizations.¹⁹

Although no standardized model exists for integrated behavioral health, a general definition for the concept was put forth by the Agency for Health Research and Quality (AHRQ). This consensus statement defined integrated behavioral health as “A practice team of primary care and behavioral health clinicians working together with patients and families, using a systematic and cost-effective approach to provide patient-centered care for a defined population. This care may address mental health and substance abuse conditions, health behaviors (including their contribution to chronic medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization.”²⁰

In practice, this can encompass teams providing therapy for patients with major depressive disorder, providing Medication Assisted Treatment to patients with opiate use disorder, or addressing the behavioral issues that are preventing a patient with a recent heart attack from losing weight or not smoking.

While there are different models of integrated behavioral health and each model can be delivered in various ways, as shown in the included case studies, it is helpful to define general concepts of integrated behavioral health as the nation moves towards identifying and studying practices that are truly integrating behavioral health and primary care.

The SAMSHA-Health Resources and Services Administration (HRSA) Center for Integrated Health Solutions developed “A Standard Framework for Levels of Integrated Care” defining six levels of collaboration/integration in models of integrated behavioral health in primary care. In addition, the Integrated Practice Assessment Tool (IPAT) was created to use a decision tree model to determine a practice’s level of behavioral health integration.²¹

When defining levels of collaboration, coordinated care refers to routine screening for behavioral health conditions in primary care, the presence of a referral relationship between the primary care and behavioral health care settings, and where connections are made between patients and community resources. Coordinated care refers to minimal collaboration (Level 1), where patients are referred to another practice site, and basic collaboration at a distance (Level 2), where primary care and behavioral health providers intermittently communicate regarding common patients.

Integrated care is associated with reduced anxiety and depression, chronic pain, and risky drinking

Co-located care refers to primary care and behavioral health care services located within the same facility. This model enhances communication between primary care and behavioral health specialists, and results in a higher level of behavioral health services offered compared to the coordinated care level of collaboration. Levels of Colocation include basic collaboration onsite (Level 3) and close collaboration onsite with some systems integration (Level 4), including some shared records.

Integrated care refers to a team of primary care and behavioral health specialists working together using one treatment plan to address patients’ needs, regardless of whether the primary care and

behavioral health services are located in the same facility or separate locations. Levels of integrated care include close collaboration approaching an integrated practice (Level 5) and full collaboration in a transformed/merged integrated practice (Level 6).

According to a Milbank Memorial Fund Report on “Evolving Models of Behavioral Health Integration in Primary Care,” there are eight specific models of integrated behavioral health,¹⁹ which encompass the three overarching levels previously defined by SAMHSA: coordinated, co-located or fully integrated care (Table 1). Each model has its own benefits and limitations and may best serve different populations based on their behavioral health needs.

Table 1. Evolving Models of Integrated Care Table			
Level	Model (Description in Appendix)	Degree of Collaboration	Considerations
Coordinated	(1) Improving Collaboration between Separate Providers	Minimal Collaboration	- Primary care clinicians must develop relationships with community behavioral health providers - Resources needed to track consent for coordination of care
	(2) Medical-Provided Behavioral Health Care	Basic Collaboration at a Distance	- Primary care clinicians must be comfortable using various behavioral health screening tools and have resources available to address positive screenings - Practices need increased awareness of associated billing and coding practices
Co-located	(3) Co-location	Basic Collaboration On-Site	- Practices require physical space within the office to accommodate all providers - Reimbursement issues can arise when multiple clinicians attempt to bill for behavioral health and medical services at co-located sites
	(4) Disease Management	Close Collaboration, Partly Integrated	- Clinicians must be quickly available to provide initial intensive management for newly diagnosed conditions - Support is needed to expand medical homes to include treatment for mental health and substance use disorders
	(5) Reverse Co-location	Close Collaboration, Party Integrated	- Similar to Co-location
Integrated	(6) Unified Primary Care and Behavioral Health	Close Collaboration, Fully Integrated	- Appropriate credentialing must be obtained and confidentiality laws followed - Payers may not allow therapy and E/M codes to be billed on the same day
	(7) Primary Care Behavioral Health	Close Collaboration, Fully Integrated	- All providers and staff must adapt to create an effective, fully integrated model capable of providing brief interventions to larger groups of patients - Must take into account patients with limited number of allowed annual visits for particular types of appointments
	(8) Collaborative System of Care	Close Collaboration, Fully Integrated	- Highest level of integration will require strong network of resources to address patients' identified social needs - Billing issues become more complex and difficult with higher levels of integration and increased number of provider involvement during each patient encounter

Adapted from: *Evolving Models of Behavioral Health Integration in Primary Care, Milbank Memorial Fund*¹⁹ (*EvolvingCare.pdf (milbank.org)*)

This taxonomy can help make sense of the many different models of behavioral health and primary care delivery that exist in our fragmented healthcare system. Case studies of particular exemplars in the integrated behavioral health space demonstrate that there is not a one size fits all approach to integrating behavioral health into primary care (see case studies). Nonetheless, two major models of care delivery have emerged in the integrated behavioral health space. The collaborative care model (CoCM) and the primary care behavioral health model (PCBH).

Overview of the Collaborative Care Model and the Primary Care Behavioral Health Model

The collaborative care model is a form of integration where primary care providers, care managers and psychiatrist work together to provide physical and behavioral health services. Providers of care can be co-located or they can simply be in the same referral networks and can range from low levels of integration to high levels of integration (Level 1-Level 8 in Table 1). While outcomes vary based on the particular model employed, analysis of the IMPACT collaborative care program, one of the first large scale CoCM evaluations, showed very promising outcomes. IMPACT participants were more likely to experience improvement in the depression, had less physical pain and better over quality of life scores.^{22,23} Although it is unclear what the financial viability of this model is in the fee-for-service system, modeling studies do predict that, for Medicare patients, this model could be financially viable and perhaps even profitable.²⁴ The drawback of this model is that it is highly reliant on psychiatrists in providing the behavioral health components of treatment which can be problematic given access issues and workforce shortages.²⁵

The primary care behavioral health model of care incorporates a behavioral health consultant into the primary care team in order to extended behavioral health support. In this model of care, behavioral health providers are generally collocated within primary care offices and can see patients for a variety

“When you have seen one model, you have seen one model.”

of behavioral health needs. They can identify patients through self-referral or warm handoffs from a primary care provider who notes a biopsychosocial concern in their patient.²⁶ This model theoretically results in a higher level of integration. Studies of outcomes are limited since there are no known comparisons with usual care or compared to other integrated approaches. Yet, emerging data shows that, in some systems, this model of care may lead to more appropriate healthcare utilization²⁷ and improved behavioral health outcomes.²⁸ The financial viability of this model is less certain in the fee-for-service system, with data showing a loss in overall revenue for practices.²⁴ Although this model of care is promising and allows for the highest levels of integration, many experts in the field agree that more rigorous outcomes research is needed.²⁹

Barriers and Enablers to Behavioral Health Models

The integrated behavioral health model that practices choose to employ when serving their patients is dependent on a variety of factors, including the behavioral health needs of their patient panels, the existing practice infrastructure and network, the workforce available, and payment considerations.

There are several financial aspects which must be considered when developing and implementing models of integrated behavioral health. To best meet the needs of patients, it is critical to ensure policies are in place that will allow all patients to access the care they need regardless of insurance payer.

The American Medical Association recently published a “Behavioral Health Integration Compendium,” discussing strategies to achieve financial sustainability of models of integrated behavioral health.³⁰ While Medicare pays for integrated behavioral health services, commercial

insurance plans each have their own policies regarding coverage of services, which could result in patients having to pay multiple co-pays or other charges for integrated behavioral health services depending on their insurance plan. According to the compendium, for patients with commercial health insurance, practices should consider communicating directly with a patient's insurance carrier to determine appropriate coding to use for the integrated behavioral health services provided to reduce patients' out of pocket costs during an integrated behavioral health clinical encounter.

For practices caring for several patients with commercial health insurance coverage, individual verification of covered services and determination of recommended coding for integrated behavioral health services can be overly cumbersome and could potentially dissuade practices from adopting a model of integrated behavioral health, particularly if their patients covered by commercial health insurance receive multiple bills and co-pays for the integrated behavioral health services provided.

In general, a shift from fee-for-service to bundled payment or value-based care is necessary to achieve financial viability in the integrated behavioral health approach, as current billing and coding procedures may offer too little reimbursement for behavioral health services to sustain the integrated behavioral health model or result in higher or unexpected out-of-pocket costs for patients.³¹⁻³³

Aside from payment models, there are workforce and infrastructure considerations that may be barriers to implementation. The SAMSHA-HRSA Center for Integrated Health Solutions also developed a guide for practices to determine if they are equipped to implement integrated behavioral health within their practice.³⁴ This guide focuses on the necessary administrative, workforce and clinical practice aspects that must be in place to successfully adopt an integrated behavioral health model.

Nearly 60% of PHQ-9 scores and 63% of GAD scores dropped by half in six months.

Factors to consider when developing and implementing a model of integrated behavioral health in a practice include ensuring that the practice has licensed behavioral health and primary care professionals and that the practice has developed a clear algorithm to follow for patients who require a higher level of behavioral health services. In addition, examining physical work environments, lines of communication, opportunities for integration within the electronic health record, and developing workspaces and workflows conducive to successfully implementing integrated behavioral health are critical.³⁴

State policies can also help provide the infrastructure needed to enable behavioral health and primary care integration. Exemplar states such as Arizona and Montana have implemented strategies to support integrated behavioral health models. Arizona merged physical and behavioral health service agencies under one Medicaid director in 2015 and subsequently expanded access to integrated care.³⁵ In Montana, integrated behavioral health services are available at most clinics and hospitals, with 59% of Medicaid patients receiving care in an integrated behavioral health service center, and these services are also provided at many Tribal health clinics.³⁶ These states offer examples of how different models of integrated behavioral health can be adopted with success when supportive policies are implemented.

Outcomes of Behavioral Health Models:

Success of a model of integrated behavioral health can be evaluated by outcomes that affect the patient, the healthcare system, or both.

Patient outcomes can include factors such as clinical benefits or improved satisfaction among patients receiving care within an integrated behavioral health setting. Cited clinical benefits of integrated behavioral health care delivery models include reduced high risk drinking behaviors in veterans,³⁷ reduced anxiety and depression among military dependents,²⁸ short-term improvement in physical functioning among those with chronic pain in military participants,³⁸ and improved depression outcomes in primary care practice.^{39,40}

A study at one site showed that 60% of PHQ-9 scores to assess depression and 63% of GAD-7 scores to assess anxiety dropped by half in six months for patients receiving care within an integrated behavioral health setting.⁴¹

Physicians report that integrated care:

- Directly improves patient care (94%)
- Is a needed service (90%)
- Helps provide better care to patients (81%)
- Having an integrated psychologist reduces personal stress level (90%)

When exploring stigma associated with seeking behavioral health care, patient perceptions of behavioral health care improved with as little as a single encounter where patients received behavioral health services at a site employing integrated behavioral health.⁴² In each circumstance, however, the benefits may be limited to the particular model experienced by the studied population, and it is difficult to formulate a consensus of outcomes applicable to the general population from these reports.

From a physician perspective, a study interviewing physicians caring for patients in an integrated behavioral health practice model found that 93.8% of surveyed physicians believed that providing integrated behavioral health improves patient care, and 90.3% of surveyed physicians felt that integrated behavioral health is a needed service.⁴³ Similar findings were noted in the Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) study, which found that primary care clinicians in a co-located or enhanced referral integrated behavioral health model believed that integrated care led to better communication with specialists, less stigma for patients and better coordination for mental and physical care.⁴⁴

Healthcare system outcomes are often measured through cost savings or efficiency of care delivery within a system. In the U.S., the comparison of cost savings and efficiency of care delivery is particularly challenging to assess, since states have different policies regarding payments for behavioral health services (fee-for-service, bundled payment, global payments, etc.) and methods in which care can be delivered (telehealth, limitations for same-day mental and physical health appointments, etc.).⁴⁵

It is known that patients with behavioral health conditions, defined as a mental health diagnosis and/or a substance use disorder, have increased costs associated with their physical health diagnoses,⁴⁵ and treatment for mental health and substance use can reduce healthcare-associated costs, including outpatient visits, emergency department visits, professional costs, and pharmacy costs.⁴⁶

A recent study examining the integration of behavioral health and primary care in Rhode Island did show reduced emergency department utilization, yet cost benefits were less clear.⁴⁶ The Improving Mood – Promoting Access to Collaborative Treatment (IMPACT) study of older adults, which first examined the clinical benefits, and later, the cost benefits of the collaborative care model, demonstrated that, at 12 months, 45% of the participants receiving care within a collaborative care model had at least a 50% reduction in depressive symptoms, and the participants with major depressive disorder had lower mean total healthcare costs during the four years participants were studied.^{23,47}

Since the results are mixed on whether models of integrated behavioral health bend the cost curve by decreasing inappropriate emergency department use and use of other services, more studies need to be performed to examine potential cost benefits of models of integrated behavioral health.

“Payment models must support non-billing behavioral health providers”



Conclusion

In summary, numerous models integrating behavioral health and primary care exist, with varying degrees of integration and collaboration, and practices often develop hybrid or other innovative models to best serve the mental and physical health needs of their patients. While there is no single integrated behavioral health model that results in optimal outcomes, and every model has its benefits and limitations, overall, some level of integration appears better than none.

Particularly with rising levels of mental health conditions, suicidal thoughts, overdose related deaths, and other behavioral health conditions during the COVID-19 pandemic, in addition to widening health inequities, it is now more important than ever to develop systems that simultaneously address the mental and physical health needs of our nation.

It is imperative that we develop innovative payment structures to best support models providing the highest levels of behavioral health integration, and we must include learners within every model of integration to build a pipeline of professionals trained to provide integrated behavioral health and primary care services. It is also essential for practices to cater their model to resources available and specific needs of their patients, so that issues of rising national attention, such as the need to address maternal mental health and opioid associated infectious diseases are addressed using an integrated approach.

Currently, evidence supports the general concept of integrated primary care and behavioral health, with growing evidence for several of the models. As we develop and implement team-based integrated behavioral health care nationwide, we must continue to study each of these models and track associated outcomes to determine which models best meet the mental and physical health needs of our communities and under what circumstances each model should be employed, in order to optimize outcomes.

SECTION 3

Integrated Care Case Studies

Salud Family Health Center

LOCATION: Colorado

YEAR IMPLEMENTED: 1996.

MODEL: Fully integrated behavioral health

“Evolved organically” with no formal IBH model

<https://www.saludclinic.org/>



Payment: Federally Qualified Health Center (46% Medicaid, others with Medicare, private insurance, uninsured; many with private insurance have high deductible plans, so the health center treats them as essentially uninsured; also cares for migrant farmworker community)

Workforce: Behavioral health providers (licensed clinical social workers, marriage and family therapists, licensed professional counselors, clinical psychologists, students/interns/post-docs) and primary care clinicians. The majority of behavioral health providers are bilingual, and the health center has an affiliation with post-doc programs in Chile and Puerto Rico. Also collaborate with psychiatrist via e-consults and clinical pharmacist with specialization in psychiatric medicines via telehealth. Target ratio of 1 behavioral health provider for every 2 primary care clinicians, but current ratio is 1:3.

Clinic Flow: The health center aims to ideally include 100% of their patients in their integrated behavioral health model by having one of their behavioral health providers see every new patient, every patient who screens positive on a PHQ-2/9, each patient with symptoms suggestive of having a behavioral health component, such as abdominal pain or palpitations, patients with obstetrics or postpartum visits, and if the primary care clinician identifies a specific behavioral health need. Patients stay in a single exam room throughout their encounter and are seen by primary care and behavioral health while in the exam room during their visit. Behavioral health providers will also see patients at the health center’s dental clinics and provide e-visits for patients. Behavioral health providers have 3 patient visits scheduled daily and the rest of their schedule allows them to flexibly see patients seen in primary care on the same day.

Outcomes: There is a focus on training future behavioral health providers through the health center’s longstanding post-doc training affiliation, maintaining the high number of bilingual providers, and attempting to improve the ratio of primary care clinicians to behavioral health providers at the center.

Other Considerations: Since a high percentage of the health center’s patient with private insurance have high deductible plans and limit services patients can receive from multiple providers on a single day, the health center allows these patients to be considered essentially uninsured, enabling these patients to access the integrated behavioral health services provided to patients without commercial health insurance. For other commercially insured patients with traditional non-high deductible plans, integrated behavioral health services cannot be provided due to private insurance restrictions on the number and types of health care services patients can receive in a single day.

Community Health of Central Washington

(and Central Washington Family Medicine Residency)

Designated as teaching health center

LOCATION: Central Washington State

MODEL: Primary Care Behavioral Health

YEAR IMPLEMENTED: 2007 (expanded in 2014)

<https://www.chcw.org/>



Payment: Federally Qualified Health Center (mostly Medicaid, but some with Medicare, private insurance, uninsured; also cares for migrant farmworker community)

Workforce: Behavioral health consultants (BHCs) including licensed clinical psychologists, licensed marriage and family therapists, licensed mental health clinicians, licensed clinical social workers and predoctoral, postdoctoral and postgraduate trainees with associate licenses, and primary care clinicians (physicians, nurse practitioners, physician assistants), including resident physicians training in the family medicine residency. Approximate ratio of 1 BHC for every 3 primary care clinicians.

Clinic Flow: Patients of the practice sign an informed consent to receive team based primary care, and it is not uncommon for patients to see BHCs as part of their routine primary care health care. During visits with warm hand offs (e.g. on demand/same day meaningful clinical encounters where patients' context is assessed and an intervention delivered by a BHC), patients may remain in the same exam room and the PCP and BHC negotiate who sees the patient first based on workflow and myriad other factors. This would also be the case if patients are scheduled to see both the PCP and the BHC on the same day. In addition to BHCs seeing patients on demand and scheduled on the same day as PCPs, BHCs also have slots available for BHC appointments (without same day PCP visits). BHCs have a schedule that allows for, on average, 50% scheduled visits and 50% to be same day access; however, in practice it is more fluid with the aim of the BHC to be accessible regardless of the designated scheduled slots. Despite the schedule structure, data demonstrates about 60% of BHC visits are scheduled and 40% are on demand/same day visits. The PCPs and BHCs share the same EMR and scheduling system. Patients with certain medical diagnoses (in addition to traditional mental health conditions), such as diabetes, will commonly see a BHC, and family medicine resident physicians are re-trained each year to ensure all patients with a behaviorally influenced concern can receive access to PCBH services. All PCPs in the system are trained during onboarding regarding PCBH services. Patients can always self-refer for PCBH services. The health center utilizes standing orders for BHC referrals for specific conditions, including diabetes with A1c >9, new diabetes diagnosis, obstetrics initial intake appointment, positive PHQ-9 screening, families with foster children, ADHD, and patients on chronic pain medications or controlled substance prescriptions. BHCs will see patients for a wide range of issues, including diabetes, obesity, chronic pain, medication adherence, obstructed sleep apnea, ADHD, grief, parenting concerns, etc. The emphasis of BHC visits is on understanding patients' context to allow for more compassionate care and creating an environment that encourages and supports behavioral plans/behavior change.

Outcomes: A primary outcome measure is the ability for patients to have immediate access to behavioral health care during their appointments without the presence of waitlists to access services. The percent of the primary care patient population receiving BHC services, the number of total BHC visits per day and the number of on demand/same day visits per day are tracked. Additionally, the number of visits per patient in a 12-month span are also evaluated (although BHC visits are NOT capped). In addition, patient engagement and patient satisfaction data are also tracked.

Other Considerations: Washington state allows PCP and behavioral health visits on the same day and Medicaid covers co-payments which helps facilitate IBH services although some patients with private insurance will still face billing issues due to extra charges billed for IBH care.

Defense Health Agency- Military Medicine

LOCATION: Worldwide

MODEL: Primary Care Behavioral Health Model (main framework for the Integrated Behavioral Health model within military medicine)

YEAR IMPLEMENTED: Pilot testing began in 1997; Started in 2000 in the Air Force; Wide roll out throughout the DoD in 2013.

Payment: Single payer (Tricare Prime)

Workforce: Primary care clinicians, behavioral health consultants (BHC; e.g., psychologists or licensed clinical social workers [LCSW]). May include resident physicians and psychology interns/residents as part of primary care teams located at military graduate medical education training residency programs.

Clinic Flow: There are multiple methods whereby a patient can access behavioral health services within this model. Patients may be referred by their primary care clinician, by another primary care team member, or may self-refer to the BHC. In most cases, patients are seen by their primary care clinician and during the course of the visit a behavioral health need is identified. These patients are then referred to the BHC within the same clinic, many times during that same visit. The primary care clinician communicates their concern to the BHC. The BHC conducts an assessment and makes recommendations for the patient to follow to improve functioning. Often there is only one appointment with the BHC; however, there may be multiple return appointments (e.g., typically less than 3) to help develop skills and improve functioning. The BHC may see patients more often if it helps the primary care team manage a chronic condition. If necessary, the BHC may refer the patient to traditional mental health care (e.g., outpatient or community mental health clinic). Regardless of how the patient was referred to the BHC, the BHC communicates recommendations back to the primary care clinician (e.g., the clinician responsible for managing the patient's health care).

Outcomes: The PCBH model has been shown to improve patient functioning, reduce specialty mental health clinic burden and increase access to behavioral health services. Patient and provider satisfaction in PCBH clinics is higher. Cost savings have also been shown in that clinics that incorporated PCBH by reducing the use of outside of the military behavioral health providers.

Mary's Center

LOCATION: Washington, DC and Maryland

MODEL: Primary Care Behavioral Health Model (adapted)

YEAR IMPLEMENTED: 2012

<https://www.maryscenter.org/>



Payment: Federally Qualified Health Center (mix of Medicare, Medicaid, private insurance, uninsured)

Workforce: Integrated Behavioral Health Consultants (licensed clinical social workers and licensed counselors – some bilingual) and primary care clinicians. Also with psychiatrists and psychiatric nurse practitioners at the separate Behavioral Health Department. No trainees on the integrated behavioral health teams, but some trainees are present in the Behavioral Health Department.

Clinic Flow: Patients who present to the primary care clinic receive behavioral health screenings when they are new patients and during their annual physical exams. If the patients screens positive on the PHQ-2/9, GAD-7 and/or AUDIT-C, the medical assistant informs the PCP, who provides a warm handoff of the patient to the IBH consultant. Patients also referred by their PCP to an IBH consultant if they have uncontrolled chronic illness with a behavioral health component contributing to uncontrolled disease or patients are referred by their IBH consultant to a PCP, facilitated by a nurse triage system, if the IBH consultant thinks the patient needs medical conditions simultaneously addressed. IBH consultants and PCPs are co-located and share an EMR to facilitate integrated care and efforts are made to provide patients with same day access to an IBH consultant. Patients with substance use disorder also access the center's integrated recovery program to receive outpatient substance use treatment.

Outcomes: Previously tracked referral data, exploring which metrics to track to define outcomes.

Other Considerations: Payers have different regulations regarding what can be billed for on the same day, so problems can arise if patients receive services from primary care, psychiatry, therapy, etc. during the same appointment. There are also considerable administrative burdens associated with providing services to undocumented individuals, depending on which state the patient lives in.

SECTION 4

Integrated Behavioral Health by the Numbers

In this section we present analysis of the Integrated Primary Care and Behavioral Health workforce using publicly available data sets and large national surveys. We use standard methods for identifying co-located primary care and behavioral health clinicians as outlined in the appendix.

Workforce and Care Delivery for Mental Illness

What is the spread of integrated primary care and behavioral health in the United States? As found in the literature review and the case studies, there is no national standard for the team members or clinical activities within integrated care. Even within individual models, there is wide variation in team members and clinical activities. For the purpose of this study, we relied on co-location as a proxy measure for integration. It is not perfect, does not account for telehealth or collaborative care that occurs across distance, even one block. It does reflect the principles and values related to informal collaboration, stigma reduction, patient-centered access, and team-based primary care.

118,510 primary care physicians and 139,281 behavioral health clinicians practice together in 23,079 practices. (Table 2) Primary care physicians provide over 50 million office visits for patients with depression/anxiety, 72 million visits for patients with any mental illness. Primary care physicians and primary care physicians along with behavioral health clinicians provide the most office visits (46-48%) for patients with mental illness. (Table 3) Primary care physicians, along with non-physician behavioral health clinicians provide 50-66% of prescriptions for patients with mental illness. (Table 4) Most care for people with mental illness (visits and prescriptions) are provided by a combination of primary care physicians and non-physician behavioral health clinicians. A limitation to these and most data is that they do not include the behavioral health providers who do not deliver billable services or encounters.

Table 2: Co-location of Primary Care Physicians and Practices with Behavioral Health Clinicians

	Total Number	IBH – Co-Located	Percent (%)
Primary Care Practices	114,220	23,079	20.2%
Primary Care Physicians	314,170	118,510	37.8%
Behavioral Health Clinicians (Non-physician)	748,257	139,281	18.6%

We use data from the November 2021 Cumulative National Plan and Provider Enumeration System (NPPES) for identifying the primary care and mental health workforce. These data were combined with supplemental information from the American Medical Association (AMA) Master File and the Centers for Medicare and Medicaid (CMS) Medicare Fee-For-Service Provider Utilization & Payment Data Physician and Other Supplier Public Use File to refine and filter the final list of available primary care and mental health providers.

Source: National Plan and Provider Enumeration System <https://nppes.cms.hhs.gov/#/>

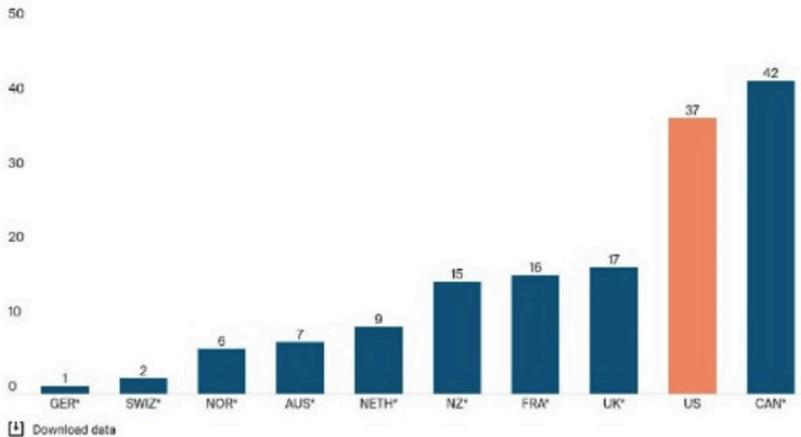
Using a method suggested by Miller (2014), we truncated the geocoded latitude and longitude to five significant digits to determine co-located primary care and mental health providers. Five decimal digits of latitude (or longitude) is accurate to within 1.1 meters, suggesting that any of the providers that share a latitude and longitude with that level of precision are co-located in the same practice office location. We aggregated the count of primary care and mental health providers at each unique combination of latitude and longitude to identify individual practices that have co-location of one or more primary care physician and one or more mental health provider.

Figure 13. How Does the United States Compare to Other High-Income Countries?

EXHIBIT 7

Primary care providers in the U.S. are more likely than those in most other countries to have social workers in their practice.

Percentage of primary care providers who report that social workers work on their team in their main practice to provide care for their patients



Note: * Statistically significant difference from US at p<.05 level.

Data: Commonwealth Fund 2019 International Health Policy Survey of Primary Care Physicians. Data for SWE not available.

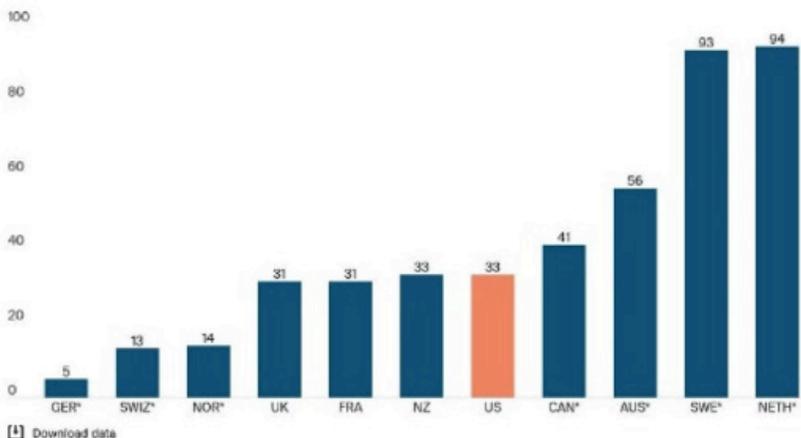
Source: Molly FitzGerald, Munira Z. Gunja, and Roosa Tikkanen, *Primary Care in High-Income Countries: How the U.S. Compares* (Commonwealth Fund, Mar. 2022). <https://doi.org/10.26099/xz8y-3042>

These tables are from a 2022 report from the Commonwealth Fund and are not primary data analysis from the Robert Graham Center. Source: Molly FitzGerald, Munira Z. Gunja, and Roosa Tikkanen, *Primary Care in High-Income Countries: How the U.S. Compares* (Commonwealth Fund, Mar. 2022). <https://doi.org/10.26099/xz8y-3042>

EXHIBIT 8

One-third of U.S. primary care physicians have mental health providers in their practice, compared with nearly all in the Netherlands and Sweden.

Percentage of primary care providers who report that psychologists or other mental health workers work on their team in their main practice to provide care for their patients



Note: * Statistically significant difference from US at p<.05 level.

Data: Commonwealth Fund 2019 International Health Policy Survey of Primary Care Physicians. Data for SWE not available.

Source: Molly FitzGerald, Munira Z. Gunja, and Roosa Tikkanen, *Primary Care in High-Income Countries: How the U.S. Compares* (Commonwealth Fund, Mar. 2022). <https://doi.org/10.26099/xz8y-3042>

Mental Illness	Primary Care Physicians	Primary Care and Behavioral Health [^]	Psychiatrists (MD/DO)	Behavioral Health (non-MD/DO)	Subspecialists	Total
Depression/Anxiety	54.1 (12%)	142.8 (33%)	41.1 (10%)	137.9 (32%)	56.7 (13%)	432.7
	*Primary care (45%)					
Any Mental Illness	72.0 (13%)	177.1 (33%)	52.3 (10%)	171.2 (32%)	66.6 (12%)	539.3
	*Primary care (46%)					
Severe Mental Illness	22.6 (11%)	72.3 (37%)	27.5 (14%)	61.2 (31%)	14.6 (7%)	198.1
	*Primary care (48%)					

Mental Illness	Primary Care Physicians	Primary Care and Behavioral Health [^]	Psychiatrists (MD/DO)	Behavioral Health (non-MD/DO)	Subspecialists	Total
Depression/Anxiety	18.5 (36%)	15.4 (30%)	8.9 (17%)	2.6 (5%)	5.3 (10%)	50.8
	*Primary care (66%)					
Any Mental Illness	19.8 (34%)	18.7 (31%)	11.0 (19%)	3.6 (6%)	5.6 (10%)	58.7
	*Primary care (65%)					
Severe Mental Illness	1.2 (17%)	3.1 (41%)	2.0 (26%)	0.9 (12%)	0.3 (4%)	7.6
	*Primary care (58%)					

Data Source: Analyses of Medical Expenditure Panel Survey (2018-2019)

Notes: Clinician types included (1) primary care (family medicine, general practice, internal medicine, pediatrics, and geriatrics), (2) primary care and non-physician behavioral health clinicians (3) psychiatry, (4) behavioral health clinicians' (non-physicians), and (5) subspecialty physicians. The diagnosis of depression or anxiety, any mental illness (AMI), and severe persistent mental illness (SMI) was based on ICD-10 codes. Prescription medications used in managing depression and anxiety, AMI, and SMI were examined. These data do not include behavioral health and other providers that support integrated primary care but do not deliver billable services or encounters.

[^]Office-based visits for primary care and behavioral health is defined as at least one visit to a primary care physician for a mental health diagnosis and at least one visit to a non-physician behavioral health clinician for a mental health diagnosis.

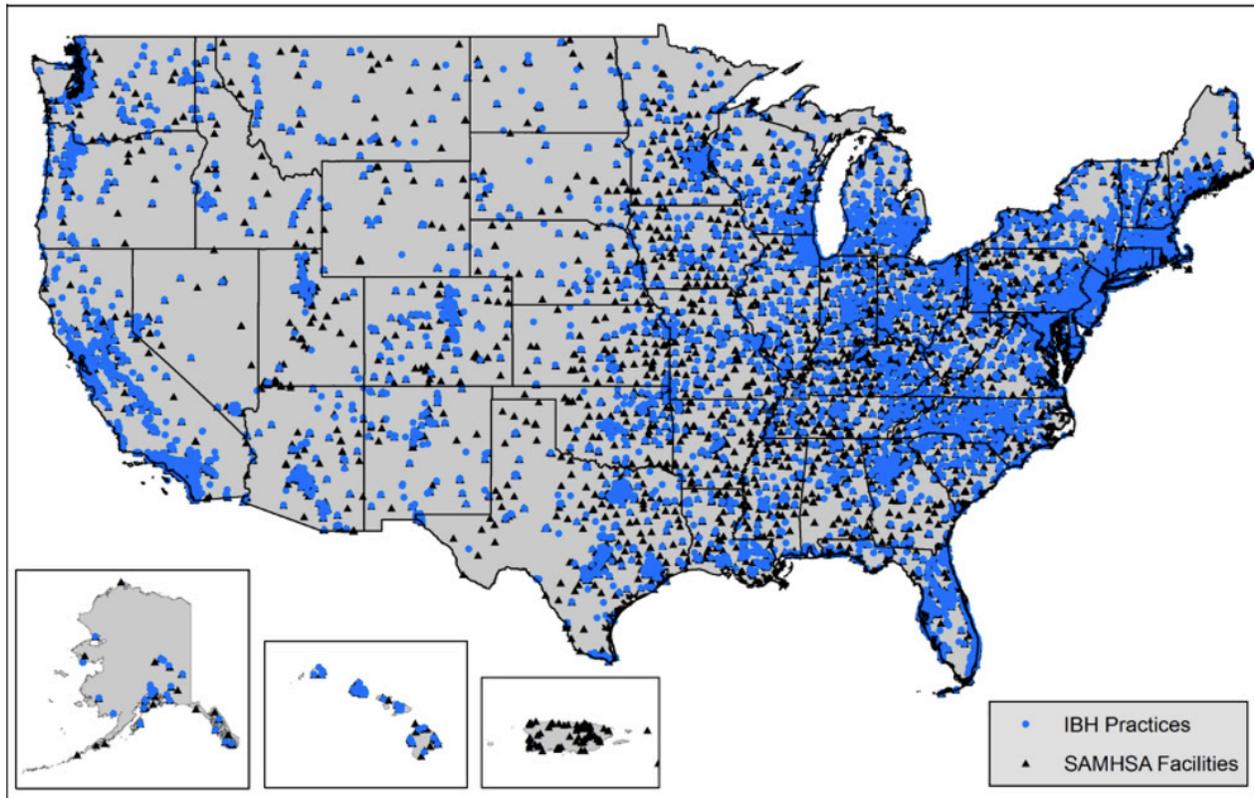
#Prescription Medications for primary care and behavioral health is defined as a prescription written by a licensed primary care physician and/or a non-physician behavioral health clinician prescriber and at least one visit to a primary care physician for a mental health diagnosis and at least one visit to a non-physician behavioral health clinician for a mental health diagnosis, as noted in the Table above.

*Primary care, in this instance, is defined as a primary care physician provided care or prescription solely or with non-physician behavioral health clinician. A patient might have had 1 or more visit for mental health diagnosis with a primary care physician and 1 or more visits with a non-physician behavioral health clinician, often more than 1 visit with a non-physician behavioral health clinician (counselor, etc).

Primary Care and Behavioral Health

In this section we present analysis of the Integrated Primary Care and Behavioral Health workforce using publicly available data sets and large national surveys. We use standard methods for identifying co-located primary care and behavioral health clinicians as outlined in the appendix.

Figure 14. IBH Practices and SAMHSA Facilities in the United States



Total SAMHSA facilities in the United States – 21,213

Total IBH practices in the United States – 23,079

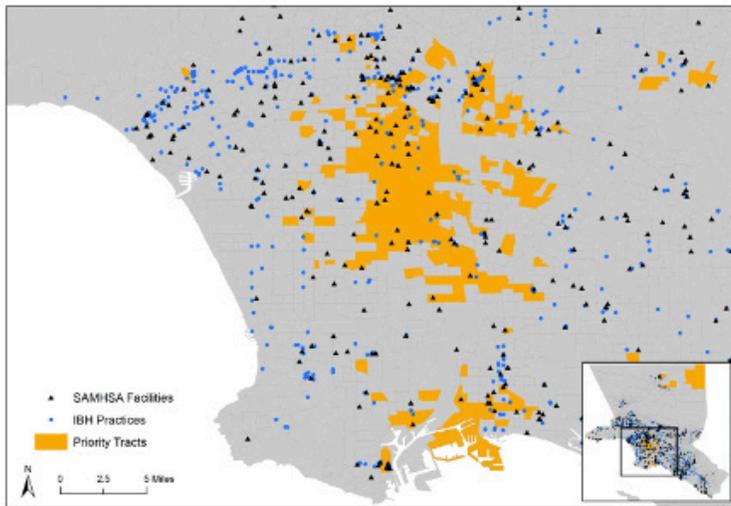
¹ Gun violence and mass shootings are not due to lack of mental health care.
Gun violence and mass shootings are due to too many guns.

Figure 15. High Need Communities and Location of SAMHSA Behavioral Health Clinics and Integrated (co-located) Primary Care Behavioral Health Clinics

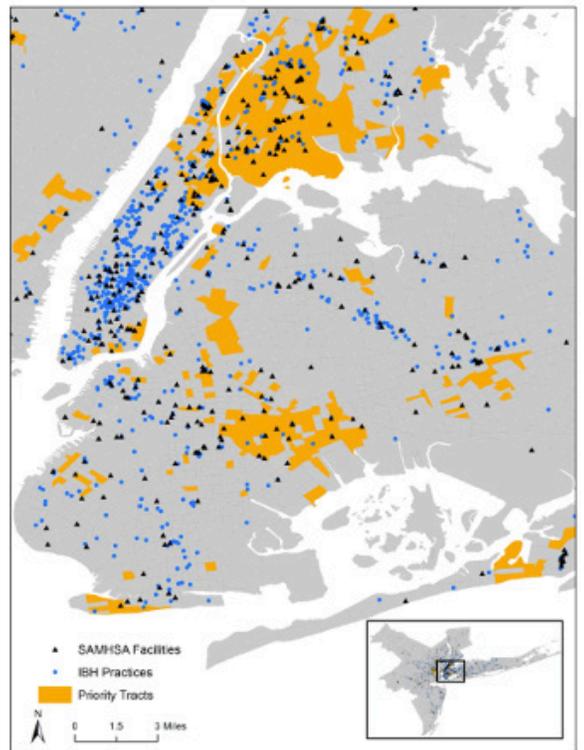
Priority tracts are defined as those in the top quintile for mental health distress (BRFSS) AND top quintile for concentrated spatial social polarization (affluence and race). Yellow areas are high need. Dark blue triangles are SAMHSA sites. Light blue circles are co-located PC-BH.

These figures represent four metropolitan and one non-metropolitan example and collectively demonstrate the incongruity between the need for mental health services and geographic availability of practices.

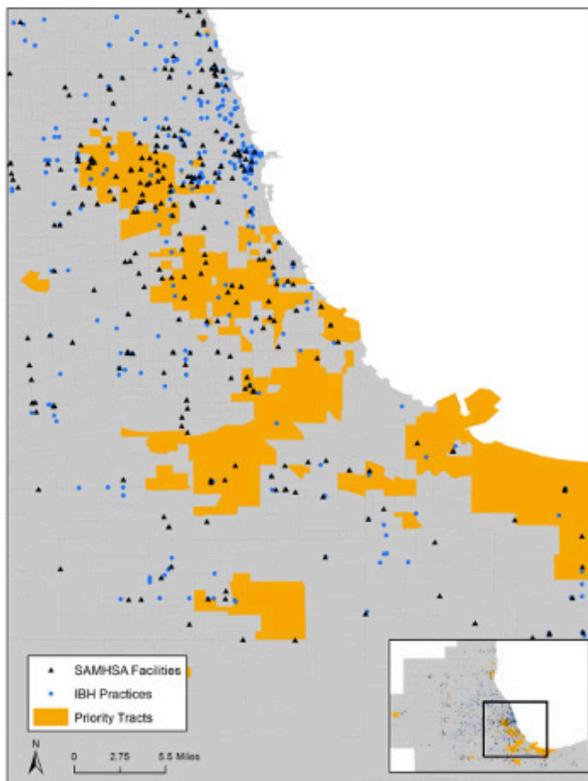
Los Angeles, California



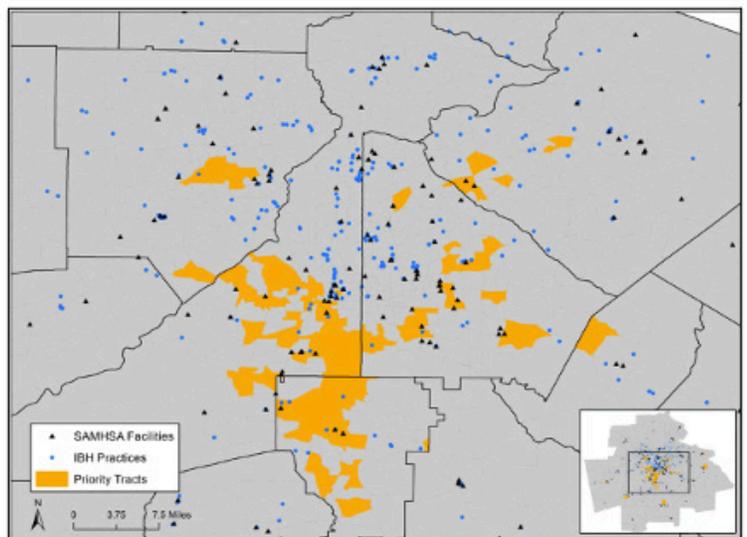
New York City, New York



Chicago, Illinois



Atlanta, Georgia



South Carolina – Nonmetropolitan areas.

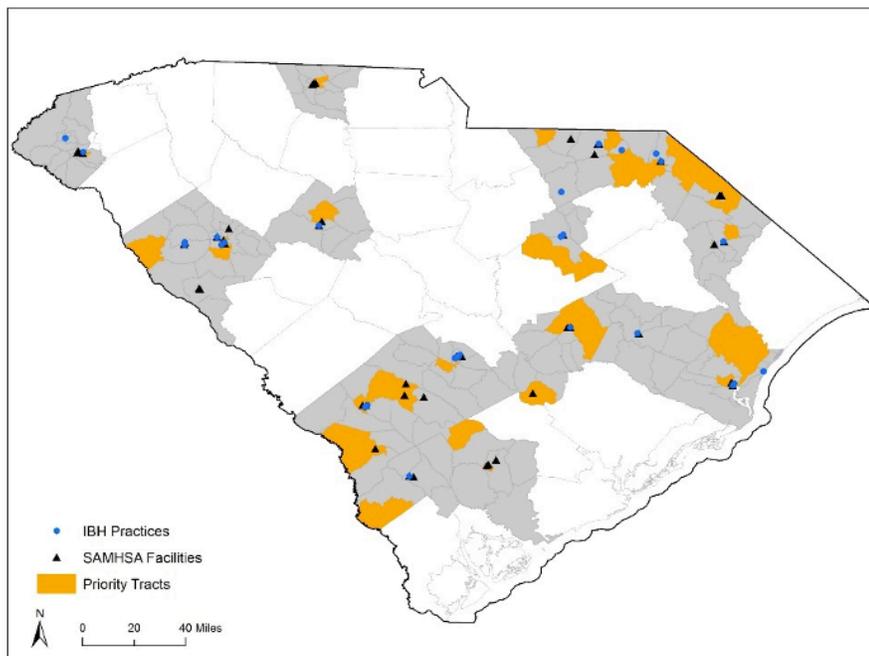


Table 5: SAMHSA Facilities and IBH Practice in Priority Tracts					
	Non-Metro South Carolina	Chicago	Los Angeles	NYC	Atlanta
Total Tracts	181	2,202	2,903	4,478	951
Priority Tracts (%)	38 (21%)	303 (14%)	381 (15%)	636 (14%)	107 (11%)
IBH Practices	87	796	970	1,736	325
IBH Practices in Priority Areas (%)	5 (6%)	49 (6%)	88 (9%)	173 (10%)	18 (6%)
SAMHSA Facilities	216	597	729	1,057	201
SAMHSA Facilities in Priority Areas (%)	14 (7%)	88 (15%)	92 (13%)	216 (20%)	26 (13%)

IBH = Co-located Primary Care and Behavioral Health

While many IBH and SAMHSA clinics are located near high need communities, just 6-10% of integrated, co-located primary care practices are located in the highest need communities and 7-20% of SAMHSA facilities are located in the highest need communities.

CONCLUSION

There is a mental health crisis in the United States; a long-term disconnect between mental health and physical health, punctuated by the mental, emotional, and behavioral health problems of the COVID-19 pandemic. This mental health crisis is widespread, impacting old and young, employed, students, incarcerated, and the unhoused. While not the primary focus of this report, substance use disorder, as part of mental health, is also part of integrated primary care and behavioral health.

There is a solution that addresses the centuries long disconnect between mind and body, physical and mental health, and addresses the widespread and inequitable impact of COVID-19. Integrated primary care and behavioral health has been around for many years. There are numerous models of integrated primary care and behavioral health. Their common threads include increasing access to mental, emotional, and behavioral health care, circumventing the stigma of mental illness, overcoming health inequity, and supporting people to thrive in their local communities. Integrated primary care and behavioral health provides the opportunity to address substance use disorders in our patients, practices, and communities as well.

There are a number of successful models of integrated primary care and behavioral health, from the formal collaborative care model that supports care across sites to the co-located model where patients may see primary care or behavioral health clinicians in the same practices, to the community model where behavioral health is part of the clinic, extending out into the community through professional and para-professional lay counselors and community health workers. Because healthcare is hindered by business and profit, policies are too often guided by financial concerns rather than patient-clinician insight. Rather than focus on any single specific model of integration, successful policies will provide the opportunity for local expression and implementation of integrated care that is responsive to local community values and needs. We need more integrated primary care and behavioral health, and we need local communities to put integrated care into practice.

The data demonstrate that over 118,000 (38%) primary care physicians currently work with nearly 140,000 behavioral health clinicians in 23,000 practices. Most care for patients with mental illness is provided by a combination of a primary care physician and a non-physician behavioral health care clinician. Integrated care is undergoing a reawakening and enjoying increased support among health care clinicians, payers, and policy makers. There are also local communities that have high needs due to dis-integrated social determinants of health that may not have access to integrated care. These high need areas provide an opportunity for local, state, and federal policies to incentivize, and support expanded integrated care. Investments in local primary care and expansion of integrated care models may improve access, overcome stigma, and support better health for more people. We focused on data collected prior to the pandemic to avoid any potential for dismissing the current behavioral health problems as simply due to COVID-19. The mental, emotional, and behavioral health crisis we are experiencing has been around awhile, predated the pandemic, was exacerbated by COVID-19, and requires immediate and long-term solutions. Integrated primary care and behavioral health is both immediate and long-term and includes many variations amenable to local community assets and needs.

- Integrated primary and behavioral health care is effective and evidence-based.
- Integrated care will improve access.
- Integrated care supports health equity.

APPENDIX

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Integrated Primary Care and Behavioral Health Definitions

Milbank Memorial Fund Report “Evolving Models of Behavioral Health Integration in Primary Care,” describes eight specific models of integrated behavioral health.¹⁹

- (1) *Providers practice separately with different administrative and reimbursement systems*
- (2) *Only medical providers provide behavioral health care to patients, but may have consultative support from behavioral health professionals and often use behavioral health screening tools such as the PHQ-9 or GAD-7 to establish a behavioral health diagnosis and use the screening tool results to determine a brief intervention algorithm for treatment (similar to SAMSHA and the Office of National Drug Control Policy’s Screening, Brief Intervention, Referral, and Treatment (SBIRT) programs*
- (3) *Primary care and behavioral health professionals are located at the same clinical site, but are considered separate services*
- (4) *A model prioritizing early identification of patients at greatest risk for developing a costly chronic disease and having care manager coordinate patients’ care and monitor patients’ response and adherence to treatment*
- (5) *For patients with serious mental illness primarily receiving care at a behavioral health facility, primary care professionals are placed at the behavioral health site to provide medical care in a behavioral health care setting*
- (6) *Integration of primary care and behavioral health services with integration of administration and financing*
- (7) *Behavioral health is considered a routine part of primary care and the behavioral health professional is considered a member of the primary care team, rather than specialty care*
- (8) *Considered a hybrid model, since services may be partially or fully integrated depending on level of collaboration and “seeks to develop individualized plans of care for high-risk patients across multiple service agencies.”¹⁹ (EvolvingCare.pdf (milbank.org))*

METHODOLOGY

This methodological section outlines reproducible steps to complete the four primary analyses: prevalence, behavioral health capacity, health service utilization, and additional costs.

Estimating the Prevalence of Mental Illness Across the Lifespan (Adults, Youth, Children)

We extracted data from the National Survey of Drug Use and Health (2015-2018) Online Restricted Data Analysis System (RDAS) to assess the prevalence of mental illness among adults and youth. We estimated the prevalence of any mental illness, depression, and severe psychological distress (non-specific symptoms of stress, depression, and anxiety) among all adults and adults in each of the racial groups separately. For youth, we assessed the prevalence of any mental illness, depression, and feelings of sadness in the total sample and for each of the racial groups. Youth (12-17 years), Children (<12 years), Adult (18 and older).

We used the National Survey of Children's Health (2016-2019) to calculate the prevalence of depression or anxiety, behavior, or conduct problems among children in the total sample and for each of the racial groups separately. Seven-race categories were used (1) Non-Hispanic White, (2) Non-Hispanic Black, (3) Non-Hispanic American Indian or Alaskan Native (4) Non-Hispanic Other Pacific Islander (5) Non-Hispanic Asian, (6) Non-Hispanic Multi-race, and (7) Hispanic. However, wherever the data were inadequate or unavailable, fewer than seven groups were used.

Estimating the Behavioral Health Capacity in Primary Care

We used the Medical Expenditure Panel Survey (MEPS, 2019) to estimate the behavioral health capacity of primary care. We created a five-nominal categorical variable indicating the type of clinician seen - 1) primary care physicians (family medicine, general practice, internal medicine, pediatrics, and geriatrics), (2) primary care and behavioral health physicians (psychiatrist) /non-physicians (clinical psychologists, social workers, counselors, or family/marriage therapists) (3) psychiatrists, (4) non-physician behavioral health clinicians (clinical psychologists, social workers, counselors, or family/marriage therapist) and (5)

subspecialists (non-primary care physicians). The office-based medical provider visit is a patient-provider encounter that occurred in the past year. Using ICD-10 codes, we determined the diagnosis of depression or anxiety (F32-34, F41-F43), any mental illness (AMI) (F10-69, F60-69, F90-99), and severe persistent mental illness (SMI) (F30, F31, F34, F38, F39, F25, F20, F21, F22, F23, F24, F28, F29, F60). We also examined prescription medications used in managing depression or anxiety, AMI, and SMI.

We computed the total number and percentage of office-based visits among adults experiencing mental health problems (depression or anxiety, AMI or SMI) by clinician type. We also calculated the total number and the proportion of prescriptions written for depression or anxiety, AMI, and SMI by clinician type.

Estimating the Healthcare Service Utilization and Expenditures

We used the Medical Expenditure Panel Survey (MEPS 2016-2019) data to estimate the healthcare services use and expenditures. Based on the self-reported race-ethnicity of the respondent we constructed a five-category race measure - (1) Non-Hispanic White, (2) Non-Hispanic Black, (3) Non-Hispanic Asian, (4) Non-Hispanic Other (American Indian or Alaskan Native, and Non-Hawaiian or Other Pacific Islander, multiracial), and (5) Hispanic. Most of the data available for analysis does not provide adequate collection or sampling to allow for race disaggregation. That is, most data are collected using a very limited set of race data. Other datasets truncate public use files to a smaller set of race categories. When available, we have attempted to disaggregate race. The Robert Graham Center joins others in efforts to increase race disaggregation in national datasets to allow for more precise and meaningful analysis.

Depending on the presence or absence of severe psychological distress and mental illness, the MEPS respondents were grouped into four groups – (1) no severe psychological distress and no mental illness (NDNMID) diagnosis, (2) severe psychological distress and no mental illness diagnosis (DNMID), (3) no severe psychological distress and mental illness diagnosis (NDMID), and (4) both severe psychological distress and mental illness diagnosis (DMID).

Two-by-Two Table: Severe Psychological distress and Mental Illness Diagnosis

Severe Psychological Distress	Mental Illness Diagnosis	
	Yes	No
Yes	DMID (n (%))	DNMID (n (%))
No	NDMID (n (%))	NDNMID (n (%))

We first, calculated the number and percentage of adults in each of the four severe psychological distress groups for the total and each of the separate racial groups. Then we calculated the mean number of office-based visits, ED visits, and hospitalizations among adults for the total and each of the racial groups across the four severe psychological distress categories. Finally, we combined expenditures for office-based care, prescription medications, ED use, and hospitalizations separately for the total and each of the racial categories to obtain total expenditures across four severe psychological distress categories.

Estimating the Additional Costs Attributable to Mental Health Inequities

Using MEPS data (2016-2019) we applied a practice-based estimate for additional costs attributable to mental health inequities. We did this in a six-step process. First, using tabular data structured to the person level, to obtain actual total expenditures we summed annual expenditures from office-based care, prescription medications, ED use, and hospitalizations for all adults and adults in each of the racial groups across the four severe psychological distress and mental illness categories (NDNMID, DNMID, NDMID, DMID). Second, we calculated the mean total expenditure for all adults and adults in each of the racial groups separately across the four distress/diagnosis categories. Third, the mean expenditure for all adults in the NDNMID (“no psychological distress and no mental illness”) category was then multiplied by the number of adults in each of the racial groups in the remaining distress/diagnosis categories (DNMID, NDMID, DMID) to obtain expected population-level expenditures. Fourth, the difference between actual and expected

expenditures was calculated to estimate additional expenses that could be attributed to mental health inequities for all adults and adults in each of the separate race groups across the three distress/diagnosis categories (DNMID, NDMID, DMID). Fifth, the additional costs were then summed across each of the three distress/diagnosis categories (DNMID, NDMID, DMID) to obtain aggregated excess expenditures for the three distress/diagnosis categories separately. Finally, the additional costs from the three categories that included distress/diagnosis (DNMID, NDMID, DMID) were aggregated to obtain the total excess burden from healthcare services attributable to mental health inequities.

Estimating the Number and Costs of Premature Deaths

We used the Centers for Disease Control and Prevention, National Center for Health Statistics. Mortality Multiple Cause Files (2016-2020), available at https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm to identify the underlying cause of death using ICD-codes for any mental illness (F10-69, F60-69, F90-99), for suicide (X60-X64, X65-X66, X68-X69, X70, X72-X74, U03, X71, X75-X79, X80, X81-X84, X87.0) and for *Substance overdose* category includes F10, F11-19, X40-X44, Y10-Y14, G31.2, G62.1 I42.6 K29.2, K70, R78.0, X45, and Y15.

Following LaVeist et al. (2009) methodology, the number of premature deaths for each racial-ethnic group was calculated by taking the difference between the actual number of deaths and the “expected” number of deaths based on the lowest death rate across the racial-ethnic group (Non-Hispanic Asian or other Pacific islanders) within the ten-year age group. Then, the number of premature deaths was summed up across age groups. The ten-year age groups were ages 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, and 85 and over. We used \$64,000 as the value of life lost to calculate the excess burden due to premature deaths from the underlying cause of death (mental illness). Costs were adjusted and in current dollar amounts.

High Need Areas.

Self-Rated Mental Health measured as the number of survey respondents aged ≥ 18 years who report 14 or more days during the past 30 days during which their mental health was not good (Behavioral Risk Factor Surveillance System (BRFSS))

Spatial Social Polarization measures extreme concentrations of income and race/ethnicity, comparing affluence and race.

Data Sources

We used multiple data sources to populate the report with data visualizations.

- The National Survey of Drug Use and Health (2015-2018) restricted data through the Restricted Data Analysis System (RDAS) available online at <https://rdas.samhsa.gov/#/survey/NSDUH-2015-2018-RD04YR>
- The NSDUH provides national estimates on mental health, tobacco, alcohol, and drug use of the civilian and non-institutionalized populations. The data are self-reported, or model-based. The model-based estimates were derived using clinical interview data from a subset of the NSDUH adult respondents from 2008 to 2012.
- The National Survey of Children's Health (2016-2019). The survey is fielded by the Maternal and Child Bureau and is available for free at the Children's Data Resource Center. <https://www.childhealthdata.org/learn-about-the-nsch/NSCH>
- The NSCH provides national estimates of the physical and mental health of children (0-17 years) and the factors that influence their health and well-being. Data are based on parents or guardians reporting about their child's health.
- The Medical Expenditure Survey (MEPS) 2016-2019. The MEPS is a survey of US civilian non-institutionalized populations. The survey provides national estimates of health care use in the US. Details are described elsewhere. www.meps.ahrq.gov. The data were derived from the consolidated, office-based, and medical conditions file. The data are self-reported.
- The Centers for Disease Control and Prevention, National Center for Health Statistics. Mortality Multiple Cause Files 2016-2020, available at https://www.cdc.gov/nchs/data_access/vitalstatsonline.html to identify the underlying cause of death using ICD-codes for any mental illness. The national registry includes data on vital events (births, deaths, marriages, divorces, and fetal deaths).
- Centers for Medicare and Medicaid Services. National Plan and Provider Enumeration System (NPPES). https://download.cms.gov/nppes/NPI_Files.html
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- Medicare Fee-For-Service Provider Utilization & Payment Data Physician and Other Practitioners Dataset. Published online 2021. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/Physician-and-Other-Supplier>

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