Introduction

Integrated behavioral health or primary care behavioral health, is "*care that results from 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 [sic] 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.*"[1]

HealthLandscape is developing an Integrated Behavioral Health visualization and mapping tool to compare behavioral health need and behavioral health assets. This visualization includes data and measures from a variety of sources such as serious mental illness from the National Survey on Drug Use and Health (NSDUH), frequent mental health distress from the Behavioral Risk Factor Surveillance System (BRFSS), depression from BRFSS, substance use disorder from NSDUH, mental health services utilization from NSDUH, mental health provider rate per population from the National Plan and Provider Enumeration System (NPPES), primary care physician rate per population from the NPPES, and integrative primary care facilities per population from the Substance Abuse and Mental Health Services Administration (SAMHSA).

This tool would benefit from the locations of primary practices that are performing primary care behavioral health or have the potential to do so. While limited data sources (such as the SAMHSA facilities locator) have that information for certain practice types, there is no accurate data source of primary care integrated behavioral health (IBH) for all primary care provider locations.

Determining whether a primary care setting employs an IBH approach usually requires staff interviews, surveys, or detailed data on referrals and collaborations.[2] These measures might be available in some electronic health records (EHRs) or health information exchanges but are not currently accessible to researchers and other stakeholders for the vast majority of practices throughout the country. There is a need for an IBH potential measure that provides insights into the potential capacity of primary care practice locations to do IBH. This brief describes the development of an IBH Potential Score that attempts to fill that knowledge gap.

The Problem

Given this, how do we quantify IBH for all primary practices, absent of EHRs or in-depth practice configuration details? At the simplest level, we can determine whether a health care setting offers both primary medical care and behavioral health services. While this may be a straight-forward approach, it does yield detailed information. Another option would be to analyze EHR data to quantify patient flows within and between primary care and behavioral health service providers. Unfortunately, these data are not collected uniformly or available nationally.

Our Innovation

We propose the creation of an integrated behavior health *Potential* score, requiring only the number of primary care physicians and the number of behavioral health providers within each practice location. This IBH Potential Score is a combination of the *probable* – meaning the likelihood of collaboration, and the *possible* – referring to available collaborations within a practice.

Let's illustrate the concept using a hypothetical practice with five providers: four primary care physicians (PC) and one behavioral health provider (BH). While an IBH measure using the BH to PC ratio (1 / 4 = .25) is simple and easy to calculate, such an approach implies a uni-directional flow of patients and information (from PC to BH), not the bi-directional flow seen in IBH practices. To account for this, our more innovative approach capitalizes on what is known or can be inferred based on the number and type of providers in a practice. Let's look at a hypothetical example.

Table 1. Springfield Family Practice

	PC1	PC2	PC3	PC4	BH1
PC1		0	0	0	1
PC2	0		0	0	1
PC3	0	0		0	1
PC4	0	0	0		1
BH1	1	1	1	1	

Springfield Family Practice is a small practice with four primary care (PC) physicians and one behavioral health (BH) clinician. We see in Table 1 that there is one BH for every PC physician, and four PC for every BH provider. If we imagine patient flow (provider interactions) as moving from the left side of the table to the top of the table, we see that within this practice, there are 20 possible interactions. These are noted as 0 (same provider-type interactions) or 1 (collaborative interactions). Table 1 illustrates that eight of the 20 possible interactions, or 40 percent, are PC & BH collaborative interactions.

While this is an informative starting point, there are two flaws. First, this measure assumes all interactions or patient flows (cells) are equally *probable*. Second, the model assumes all interactions (margins) are equally *possible*. We propose adjusting this collaborative measure through cell (the probable) and marginal (the possible) weighting as discussed below.

The Probable

Table 1 implies that the probability of the collaborative patient flow between BH1 and PC4 is identical to the probability of the patient flow between PC4 and BH1. In other words, it assumes that between any PC/BH pair, patients are initially referred in either direction at the same rate or with the same probability. While the actual probability is unknowable without detailed EHR or billing records, this assumption is likely to be invalid.

Therefore, <u>we assume unequal probability of patient flow between PC and BH providers and propose using the cell weights in Table 2 to adjust for *probable* interactions</u>.

Table 2. Springfield Family Practice, Weighting for the Probable (Unequal Probability)

	PC1	PC2	PC3	PC4	BH1
PC1		0	0	0	.1
PC2	0		0	0	.1
PC3	0	0		0	.1
PC4	0	0	0		.1
BH1	.05	.05	.05	.05	

Without national or multi-state data, we cannot create an empirically informed rate, though we did explore data on the prevalence of behavioral health issues and co-morbidities and health center behavioral health service utilization to derive an estimate.[3-5] Therefore, we assume that about 10 percent of patients who first see a primary care provider will ultimately be referred to the behavioral health supports within the practice. Conversely, we will assume that five percent of patients who start with a behavioral health visit will ultimately require attention from a primary care provider within the practice.

The Possible

Table 3 highlights all possible interactions between PC and BH providers. It shows that one behavioral health provider can interact with up to four primary care providers in the practice, while each primary care provider

Table 3. Springfield Family Practice

	PC1	PC2	PC3	PC4	BH1
PC1					
PC2					
PC3					
PC4					
BH1					

can only interact with a single behavioral health provider. This is an obvious imbalance in the *possible* intra-provider interactions. <u>We propose using both the BH/PC ratio and the PC/BH ratio as margin weights to adjust for *possible* collaborations</u>. To apply this to the Springfield Family Practice example, the BH/PC ratio of 1/4 (0.25) and PC to BH ratio of 4/1 (4.0) are used as additional weights to adjust for the possibility of collaboration.

Putting the Probable and the Possible Together: The Potential

Table 4 illustrates the *probable* and *possible* interactions for Springfield Family Practice.

Table 4. Springfield Family Practice

	PC1	PC2	PC3	PC4	BH1
PC1		0	0	0	0.1
PC2	0		0	0	0.1
PC3	0	0		0	0.1
PC4	0	0	0		0.1
BH1	0.05	0.05	0.05	0.05	

Table 5 illustrates the calculation of the IBH Potential score.

Table 5. Calculating the IBH Potential Score for Table 2

20	Possible Dyads/Collaborations	
0.4	Sum of PC Weights (cells)	"Probable" Weights
0.2	Sum of BH Weights (cells)	
0.25	1/4 = BH / PC Ratio (margins)	"Possible" Weights
4	4/1 = PC / BH ratio (margins)	
0.1	Probable PC Weights * Possible BH/PC Ratio	
0.8	Probable BH Weights * Possible PC/BH Ratio	
0.9	Sum of Weights	
0.045	IBH Score	Sum of Weights/ Dyads

Limitations

There are several limitations to the IBH Potential Score. First, the IBH Potential Score assumes a closed system or practice, and does not account for telehealth, multi-group practices, ownership by regional hospital systems, or other non-traditional settings. Second, the calculations do not account for the typical amount of time spent on primary care visits (10 to 15 minutes) compared to behavioral health counseling sessions (potentially 45 minutes to an hour, including group visits). Third, the model treats providers as identical, meaning that all primary providers and all behavioral health counselors work and interact with patients and with other providers in the same way and at the same rate. Relaxing this assumption would require unequal

cell (probable) weighting, which we cannot calculate with the limited data available. Finally, due to the lack of data on patient flow between PC and BH providers, we had to make assumptions about the probability of primary care patients being referred to behavioral health services within the practice and vice versa.

Next Steps

While the IBH Potential Score is a logical initial approximation of potential IBH collaboration, wide-spread utilization is not possible (or recommended) without validation or comparison of the IBH Potential Score to other practice-level measures such as the Integrated Practice Assessment Tool (IPAT)[6] or the Practice Integration Profile (PIP).[7] Attempts are underway to secure such data from research collaborators.

Authors and Acknowledgements

Authors

Mark Carrozza, MA, Jennifer Rankin, PhD, Michael Topmiller, PhD, Jessica McCann, MA, Jene Grandmont, MA, and Morgan Walker, MS

Contact Us

To learn more about HealthLandscape, visit www.HealthLandscape.org.

To send inquiries, email info@healthlandscape.org.

References

1. Peek CJ. *Lexicon for Behavioral Health and Primary Care Integration: Concepts and Definitions Developed by Expert Consensus*. Agency for Healthcare Research and Quality (AHRQ). 2013; AHRQ Publication No. AHRQ 13-IP001-EF. https://integrationacademy.ahrq.gov/sites/default/files/2020-06/Lexicon.pdf.

2. The Academy: Integrating Behavioral Health & Primary Care. Agency for Healthcare Research and Quality (AHRQ). https://integrationacademy.ahrq.gov/products/behavioral-health-measures-atlas/integration-framework. Accessed May 1, 2022.

3. Terlizzi EP, Zablotsky B. *Mental Health Treatment Among Adults: United States, 2019*. Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. 2020; NCHS Data Brief no. 380. https://www.cdc.gov/nchs/products/databriefs/db380.htm.

4. Chronic Diseases in America, 2020. Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm. Accessed May 1, 2022.

5. Health Resources and Services Administration (HRSA). 2020 Uniform Data System [data set]. https://data.hrsa.gov/tools/data-reporting/program-data/national. Accessed May 1, 2022.

6. Waxmonsky J, Auxier A, Romero PW, Heath B. *IPAT: Integrated Practice Assessment Tool*. 2014; Colorado Access. https://www.cpaawa.org/wp-content/uploads/2017/11/IPAT_v_2.0_FINAL.pdf.

7. Kessler RS, Auxier A, Hitt JR, et al. Development and Validation of a Measure of Primary Care Behavioral Health Integration. *Family, Systems & Health*. 2016;34(4):342-356. doi:10.1037/fsh0000227.