

# Implementing Integrated Behavioral Healthcare in Varied Clinical Settings and

## Associations with Health Equity

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### Background and Methods

#### What is integrated behavioral healthcare?

Integrated behavioral healthcare (IBH) is a health service delivery model whereby behavioral health professionals are incorporated into a previous medical team, often in primary care settings. There are several models of IBH. For the purpose of this study, we utilized the Cross-Model Framework (Stephens et al, 2020), which details the core processes and structures of IBH across all models of IBH.

#### What health disparities exist?

Three major groups which often demonstrate poorer health metrics include **racial/ethnic minorities** (e.g., African Americans, Latinx), people who live in **rural areas**, and people of lower **socioeconomic status** (Agency for Healthcare Research and Quality, 2018). Health disparities that exist for these groups include rates of **depression** and **chronic illnesses** such as diabetes, asthma, and cardiovascular disease (Nelson et al, 2020).

#### Sample

The sample included 102 primary care clinics from across the state of Minnesota. Clinics were part of [the MN Health Collaborative](#). Of the 102 clinics, 83 reported their estimated patient populations, for a total of 1,336,800 (M = 16,106, median = 8,746) patients. Using the median to estimate the missing patient population data, the clinics covered approximately 1,502,974 patients, or about 27% of the population of Minnesota.

#### Measures

Concept	Measure	Description
<b>BH integration</b>	<a href="#">Site Self Assessment (SSA)</a>	18 items; scale ranging 1-10 reflecting integration level
<b>Rurality</b>	<a href="#">USDA Rural-Urban Commuting Area Codes (RUCA)</a>	Scale ranging from 1-10 based on population density and commuting patterns; reference was clinic ZIP code
<b>Patient socioeconomic risk</b>	<a href="#">MNCM</a> composite score, one per measure per clinic	Clinic-level score of patient-level risk factors (i.e., health insurance status and type, patient age, and deprivation index)
<b>Race/ethnicity</b>	<a href="#">2017 American Community Survey</a> percentages	Race/ethnicity percentages for city in which each clinic is located
<b>Adult depression screening</b>	Patient Health Questionnaire (PHQ-9)	Percent of patients in clinic that do not have a current depression diagnosis and completed the PHQ-9
<b>Chronic illness management:</b>		Latent variable of the four below measures
<b>Adult and child optimal asthma control</b>	Patient medical record, see description*	(1) Asthma well-controlled defined by most recent asthma control tool result and (2) Patient not at risk of exacerbation
<b>Adult optimal vascular care</b>	Patient medical record, see description*	Patients with ischemic vascular disease: (1) blood pressure < 140/90, (2) on statins, (3) non-tobacco use, and (4) daily aspirin/anti-platelets
<b>Adult optimal diabetes care</b>	Patient medical record, see description*	Patients with Type I or Type II diabetes: (1) HbA1c < 8.0 mg/dL, (2) blood pressure < 140/90, (3) on statin, (4) non-tobacco use, (5) ischemic vascular disease on daily aspirin/anti-platelets

#### Analytic Plan

To address the first aim, I completed a latent class analysis. To address the second aim, I completed 12 (latent variable) mixture models which each considered one of the social determinants of health and one outcome. In this poster I will present six of the models.

### Key Takeaways

There were two aims for this study:

- 1) **Establish** whether there are clear patterns of IBH implementation across a sample of clinics.
- 2) **Determine** whether IBH implementation patterns are related to health disparities, i.e., For higher-risk clinics, is IBH class membership associated with improved outcomes?

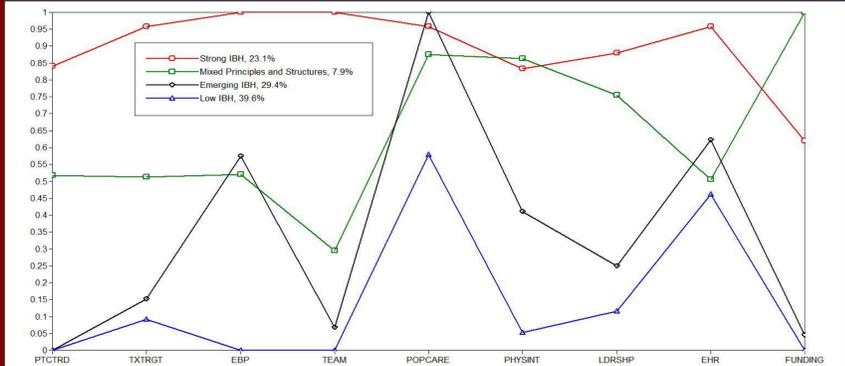
Primary care clinics can be categorized into groups based on their level of IBH implementation.

In this sample, four groups emerged: Low IBH (39.6%), Emerging IBH (29.4%), Mixed Principles & Structures (MPS; 7.9%), and Strong IBH (23.1%). This analysis should be replicated with additional samples for confirmation.

IBH has a complex and nuanced relationship with health disparities. Some aspects of IBH may be more critical than others in facilitating health equity.

It is possible that integrated funding is uniquely important for follow-up on positive depression screens, as the class Mixed Principles & Structures (MPS) outperformed the other classes in both rural settings and clinics with a higher-risk patients based on their SES. MPS has the highest rate of integrated funding. This class moderated the relationship between rurality and depression screening follow-up, as well as SES risk and depression screening follow-up. MPS demonstrated a significantly weaker relationship, and in the case of rural clinics, an actual positive relationship, between the risk setting and the outcome of depression screening follow-up. Regarding chronic illness management, the results were surprising. It appears that the Low IBH and Emerging IBH clinics performed better than the Strong IBH clinics. More analysis needs to be performed to understand and explain this unexpected result.

### Results



Four-class latent class solution. Note: PtCtrd = Patient-centric care, TxTrgt = Treatment to target, EBP = Use evidence-based behavioral treatments, Team = Conduct efficient team care, PopCare = population based care, PhysInt = physical integration, Ldrshp = organizational leadership support for integrated care, EHR = shared EHR system, and Funding = sustainable fiscal strategies.

#### Moderation Results

Chronic illness management						Follow-up on positive adult PHQ-9 12 months later					
IV	N	Wald test	p	Class b	SE p	IV	N	Wald test	p	Class b	SE p
Percent white patients	100	0.43	0.93	None significant		Percent white patients	90	2.38	0.50	None significant	
Rurality	102	4.39	0.22	1 -0.13 0.17 0.42		Rurality	102	6.54	0.09	1 -0.08 0.05 0.07	
				2 1.43 0.75 0.06						2 0.04 0.01 0.00	
				3 3.01 3.81 0.43						3 -0.51 1.14 0.66	
				4 0.03 0.29 0.91						4 -0.17 0.08 0.04	
				1-2 -1.56 0.89 0.08						1-2 -0.12 0.05 0.02	
				1-3 -3.14 3.81 0.41						1-3 0.43 1.12 0.70	
				1-4 -0.17 0.19 0.37						1-4 0.08 0.06 0.14	
				2-3 -1.58 3.93 0.69						2-3 0.55 1.14 0.63	
				2-4 1.40 0.92 0.13						2-4 0.20 0.08 0.02	
				3-4 2.97 3.76 0.43						3-4 -0.34 1.13 0.76	
SES risk	90	9.24	0.03	1 -0.33 0.18 0.06		SES risk	89	207.04	0	1 -0.29 0.17 0.09	
				2 -0.69 0.27 0.01						2 0.00 0.03 0.91	
				3 -0.40 0.10 0.00						3 -0.24 0.18 0.18	
				4 -0.90 0.23 0.00						4 -0.37 0.06 0.00	
				1-2 0.35 0.27 0.19						1-2 -0.30 0.19 0.12	
				1-3 0.07 0.21 0.75						1-3 -0.05 0.27 0.86	
				1-4 0.57 0.24 0.02						1-4 0.08 0.15 0.60	
				2-3 -0.29 0.28 0.30						2-3 0.25 0.20 0.21	
				2-4 0.21 0.26 0.42						2-4 0.38 0.08 0.00	
				3-4 0.50 0.18 0.00						3-4 0.13 0.14 0.36	

#### References

Agency for Healthcare Research and Quality. (2019). 2018 National Healthcare Disparities Report. Rockville, MD: Agency for Healthcare Research and Quality.

Minnesota Community Measurement. (2018b). Quality of care for chronic conditions in 2018 report.

Nelson, H. D., Cantor, A., Wagner, J., Jungbauer, R., Quiñones, A., Stillman, L., & Kondo, K. (2020). Achieving health equity in preventive services: A systematic review for a national institutes of health pathways to prevention workshop. *Annals of Internal Medicine*, 172(4), 258–271. <https://doi.org/10.7326/M19-3199>

Scheirer, M. A., Leonard, B. A., Ronan, L., & Boober, B. H. (2010). *Site Self Assessment tool for the Maine Health Access Foundation Integration Initiative*. Augusta, ME.

Stephens, K. A., van Eeghen, C., Mollis, B., Au, M., Brennhof, S. A., Martin, M., ... Kessler, R. (2020). Defining and measuring core processes and structures in integrated behavioral health in primary care: a cross-model framework. *Translational Behavioral Medicine*, 10(3), 527–538. <https://doi.org/10.1093/tbm/ibz163>