

MDD Advisory Group Meeting Pre-read

August 2022

Meeting Objectives:

- Update on Model Progress and Current Work
- Discuss Component Research Studies – Early Findings
- Highlight Research Application Studies in Development

Meeting Agenda

- > Welcome and Advisory Group Business 1:00-1:05 pm
- > Updates on Model Development 1:05-1:20 pm
- > Component Studies – Early Findings 1:20-1:40 pm
 - > Patient-Driven Priorities for Management of MDD (PAVE) – Results Preview Below
 - > MDD Treatment Patterns Retrospective Claims Study (HealthCore) – Results Preview Below
- > Looking Ahead: Putting the Model into Practice 1:40 - 2:00 pm

MDD Treatment Patterns Study (HealthCore)

Results Preview

> *Key findings include:*

- > In total, 12,657 patients were included in our study sample (mean age: 36 years; 60% female; 68% urban); 34% received Rx-only treatments, 25% non-Rx-only, 28% both, and 13% neither. MDD severity at diagnosis (26% mild, 54% moderate, 20% severe) was available for 51% of patients.
- > Following the initial diagnosis of MDD, all-cause inpatient hospitalization rates for those with Rx-only, non-Rx-only, both, and neither were 11%, 10%, 16%, and 29%, respectively, while all-cause mean monthly total costs were \$792, \$633, \$786, and \$1,292, respectively.
- > In multinomial logistic regression, age, sex, patient residence, socio-economic status, diagnosing provider specialty, and initial diagnosis location were significant predictors ($p < 0.05$) of treatment modality.
- > In multivariable logistic regression among patients with ≥ 2 severity assessments, those who received Rx-only (odds ratio [OR]: 2.03, $p < 0.01$) and both (OR: 3.26, $p < 0.01$) had higher odds of decreasing MDD severity than those who received neither.

> *Conclusion*

- > In this real-world sample of commercially insured patients, we observed variations in outcomes by treatment modality and an association between modality and disease severity. Further research should explore the relation between treatment modality and patient outcomes.

Patient-Driven Priorities for Management of MDD

Results Preview

- > We have completed recruitment and data collection for the discrete choice experiment for Phase 2 of this project (N=300), where we made a deliberate effort to recruit under-represented patient groups (*refer to slide 9 for additional details*).
- > Initial findings from the survey data indicate:
 - > In evaluating potential treatments, the treatment attribute “relations with others” was nearly as important as “out-of-pocket costs”
 - > Attributes typically used in economic evaluation (e.g., productivity and treatment effect) did not emerge as the most preferred in this sample of adults with MDD
 - > Social and life impact outcomes (e.g., relations with others) are preferred to “time to treatment effect” or “productivity”
 - > To reflect patient value more completely, these attributes should be considered in value assessments as well

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Detailed Study Findings

- MDD Treatment Patterns Study
- Patient-Driven Priorities for Management of MDD

MDD Treatment Patterns Study Results Preview (HealthCore)

We have finalized the statistical analyses for this project and are currently disseminating the key findings.

Below is a research abstract that describes the key study findings (accepted as a poster presentation for AMCP Nexus 2022).

- > **Background:** Treatment guidelines for major depressive disorder (MDD) recommend pharmacologic (Rx) and non-pharmacologic (non-Rx) therapies tailored to the patient's disease severity, level of function, and co-morbid conditions. While several studies have examined real-world Rx treatment patterns and costs among MDD patients, few have examined the use of non-Rx treatments.
- > **Objective:** To describe prevalence and predictors of treatment modality and characterize healthcare resource utilization and costs by treatment modality for newly diagnosed MDD patients.
- > **Methods:** Commercially insured US patients, ages 18-62 years with newly diagnosed MDD between 01/01/2017 and 09/30/2019, were retrospectively identified from the HealthCore Integrated Research Database®. Eligible patients were continuously enrolled in the health plan for one year before and two years after the first MDD diagnosis (index date). Those with co-occurring schizophrenia, bipolar disorder, postpartum depression, substance use disorder, and prior Rx or non-Rx MDD treatments were excluded. Treatment modalities assessed in the 2-year post-index period included Rx-only, non-Rx-only, both, and neither treatment. Regression models identified predictors of treatment modality and the relationship between treatment modality and MDD severity changes.
- > **Results:** In total, 12,657 patients were included (mean age: 36 years; 60% female; 68% urban); 34% received Rx-only, 25% non-Rx-only, 28% both, and 13% neither. MDD severity at diagnosis (26% mild, 54% moderate, 20% severe) was available for 51% of patients. Post-index all-cause inpatient hospitalizations for those with Rx-only, non-Rx-only, both, and neither were 11%, 10%, 16%, and 29%, respectively, while all-cause mean monthly total costs were \$792, \$633, \$786, and \$1,292, respectively. In multinomial logistic regression, age, sex, patient residence, socio-economic status, diagnosing provider specialty, and initial diagnosis location were significant predictors ($p < 0.05$) of treatment modality. In multivariable logistic regression among patients with ≥ 2 severity assessments, those who received Rx-only (Odds Ratio [OR]: 2.03, $p < 0.01$) and both (OR: 3.26, $p < 0.01$) had higher odds of decreasing MDD severity than those who received neither.
- > **Conclusions:** In this real-world sample of commercially insured patients, we observed variations in outcomes by treatment modality and an association between modality and disease severity. Further research should explore the relation between treatment modality and patient outcomes.

- > Among 12,657 patients, 7,820 patients have used at least one pharmacologic treatment.
- > The table to the right describes the most commonly observed treatment sequences (observed in at least 0.5% of the patients in the sample).

Post-index (2 years) treatment sequences among MDD patients

Treatment Sequences	MDD Patients
Number of patients with ≥1 line of therapy, N	7,820
Treatment sequences¹	
[SSRI]	3,134 (40.1%)
[SSRI] => [SSRI]	886 (11.3%)
[Bupropion]	561 (7.2%)
[SNRI]	263 (3.4%)
[SSRI] => [SSRI] => [SSRI]	188 (2.4%)
[SSRI] => [Bupropion]	128 (1.6%)
[Bupropion] => [Bupropion]	113 (1.5%)
[SSRI] => [SNRI]	113 (1.5%)
[SSRI] => [Bupropion + SSRI]	103 (1.3%)
[SSRI] => [Bupropion + SSRI] => [SSRI]	85 (1.1%)
[SMS]	74 (1.0%)
[SMS + SSRI] => [SSRI]	64 (0.8%)
[TCA]	63 (0.8%)
[Bupropion] => [SSRI]	55 (0.7%)
[SSRI] => [Bupropion + SSRI] => [Bupropion]	49 (0.6%)
[SSRI] => [SMS + SSRI] => [SSRI]	49 (0.6%)
[SNRI] => [SNRI]	46 (0.6%)
[SMS + SSRI]	42 (0.5%)
[SSRI] => [SMS]	37 (0.5%)

> Among 12,657 patients in the sample, 6,675 have used non-pharmacologic treatments in the two-year follow-up period after their initial diagnosis of MDD.

> The Table to the right summarizes the use of these procedures.

Non-pharmacologic treatment for MDD (Total number of patients = 12,657)	
Any non-pharmacologic treatment	
≥1 visit, n (%)	6,675 (52.7%)
Number of visits per patient, mean (SD)	9.1 (18.1)
Days to first non-pharmacologic treatment	
Mean (SD)	50.4 (132.4)
Median (IQR)	0.0 (0.0-17.0)
Individual/family/group psychotherapy	
≥1 visit, n (%)	6,033 (47.7%)
Number of visits per patient, mean (SD)	8.4 (17.5)
Psychotherapy in crisis visits	
≥1 visit, n (%)	101 (0.8%)
Number of visits per patient, mean (SD)	0.0 (0.2)
Psychiatric diagnostic evaluation visits	
≥1 visit, n (%)	5,628 (44.5%)
Number of visits per patient, mean (SD)	0.7 (1.1)
Medication management visits for psychotherapy	
≥1 visit, n (%)	≤10
Number of visits per patient, mean (SD)	--
Electroconvulsive therapy	
≥1 visit, n (%)	≤10
Number of visits per patient, mean (SD)	--
Transcranial magnetic stimulation	
≥1 visit, n (%)	≤10
Number of visits per patient, mean (SD)	--
Vagus nerve stimulation	
≥1 visit, n (%)	0 (0.0%)
Number of visits per patient, mean (SD)	0.0 (0.0)



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Demographic Characteristics				n	%	n	%
Age Group	18-29	96	32	Education	High School	13	4
	30-49	122	41		Some College	68	23
	50-64	82	27		College Degree	137	46
Race	White/Caucasian	185	62	Graduate Degree	82	27	
	Black/African-American	47	16	Household Income	< \$25,000	82	27
	Asian	26	8		\$25,000 - \$74,999	110	37
	Biracial/Mixed	38	13		\$75,000 - >\$100,000	108	36
	Other	4	1	Health Insurance	Private insurance	150	50
Hispanic	39	13	Public insurance		102	34	
Sex	Female	203	68		Public and private insurance	25	8
	Male	77	26	Other	15	5	
	Transgender/non-binary	20	6	No Insurance	8	3	
Marital Status	Single	147	49	Community	Rural	34	11
	Married/Domestic Partnership	98	33		Suburban	147	49
	Widowed/Separated	12	4		Urban	119	40
	Divorced	34	11				

Preferences for Attributes of MDD Treatment (n = 300)

