

# Evaluating Patient Adherence to Antidepressant Therapy among Uninsured Working Adults Diagnosed with Major Depression: 12-Month Results from the Texas Demonstration to Maintain Independence and Employment Study

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## INTRODUCTION

The Texas Demonstration to Maintain Independence and Employment (DMIE) program is a federal and state funded study designed to examine whether low-income working adults with potentially disabling mental health and physical conditions can remain employed and independent if provided health and vocational support benefits services through Texas Harris County Hospital District (HCHD).

DMIE participants randomized to the intervention group received enhanced program services (i.e., expedited medical and psychiatric services, case management support and elimination of drug co-pays) compared to the participants randomized to the control group who received "usual standard of care".

## OBJECTIVE

To better understand how patients' antidepressant utilization may be affected by the services provided under the DMIE, this study examined antidepressant adherence and persistence rates between intervention and control cohorts during the first 12-months of enrollment in the DMIE study.

## METHODS

**Population:** Texas DMIE participants were aged 21-60; working a minimum average of 40 hours per month; diagnosed with serious mental illness or behavioral health and physical health conditions; and who were not currently receiving disability. This study selected 166 of 1616 total DMIE participants with a major depression diagnosis and who were prescribed antidepressant medication 12-months prior and 12-months post enrollment.

**Data Collection:** Data for this analysis were collected from administrative claims for pharmacy, inpatient, and outpatient services provided to patients in the HCHD between May 2006 and May 2009.

**Statistical Analysis:** Drug adherence was measured using proportion of days covered (PDC) for each patient during the 365-day pre- and post-enrollment observation periods. Medication persistence measured the duration of time from initiation to discontinuation of antidepressants based on a  $\geq 35$ -day refill supply gap. Covariates included overall health morbidity, age, race/ethnicity, gender, occupation, serious mental illness status, and recruitment method (mail/phone versus in-clinic). Findings were based on analysis of covariance for adherence and survival analysis for persistence.

## RESULTS

Table 1: Participant Demographics/ Characteristics (n=166)

	Intervention n = 101	Control n = 65
<b>Demographics</b>		
<b>Gender</b>	<b>n (%)</b>	<b>n (%)</b>
Male	9 (9%)	10 (15%)
Female	92 (91%)	55 (83%)
<b>Age, mean (SD)</b>	47.1 (9.3)	48.9 (7.6)
<b>Race/Ethnicity</b>	<b>n (%)</b>	<b>n (%)</b>
White	38 (38%)	25 (40%)
African American	36 (36%)	19 (29%)
Hispanic/Latino	26 (26%)	18 (28%)
Asian/Pacific Islander	0 (0%)	1 (2%)
Other/Mixed	1 (1%)	1 (2%)
<b>Education</b>	<b>n (%)</b>	<b>n (%)</b>
8th grade or less	10 (10%)	6 (9%)
Some high school	18 (18%)	12 (19%)
High school diploma/GED	28 (28%)	14 (22%)
2-year associates degree	35 (35%)	22 (34%)
4-year bachelor degree	8 (8%)	7 (11%)
More than 4-year degree	2 (2%)	4 (6%)
<b>Income*, mean (SD)</b>	13.7 (6.7)	13.2 (5.7%)
<b>Patient characteristics</b>		
<b>Recruitment/Enrollment method</b>	<b>n (%)</b>	<b>n (%)</b>
In-clinic	42 (41.6%)	25 (38.5%)
Telephone/Mail	59 (58.4%)	40 (61.5%)
<b>Health morbidity (ACG score)**</b>	1.33 (.72)	1.32 (.72)
<b>Alcohol or drug abuse diagnosis</b>	<b>n (%)</b>	<b>n (%)</b>
No substance abuse	94 (93%)	60 (92%)
Substance abuse	7 (7%)	5 (8%)
<b>Follow-up with a Psychiatrist</b>	<b>n (%)</b>	<b>n (%)</b>
Number of visits		
0	47 (47%)	43 (66%)
1-2	27 (27%)	11 (17%)
3-4	15 (15%)	5 (8%)
$\geq 5$	12 (12%)	6 (9%)

\*Income transformed into ordinal variable. Actual mean value for both groups corresponds to \$12,000 - \$12,999 range.

\*\*Health morbidity based on Johns Hopkins Adjusted Clinical Groups (ACG) Case-Mix System (Rat. 2001)

Figure 1. Antidepressant Prescriptions

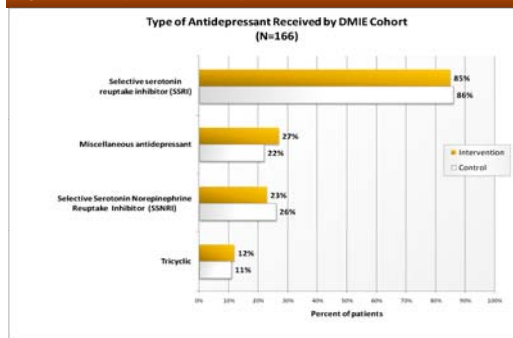
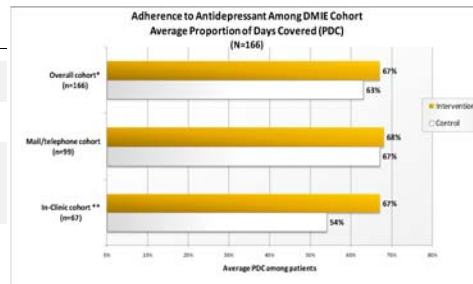


Figure 2. Adherence to Antidepressants



\*Difference in PDC between the overall cohort, significance,  $p = .25$

\*\*Difference in PDC within the "in-clinic" cohort, significance,  $p = .01$

Table 2. Multivariate Predictors of Adherence with Antidepressants

Parameter	Estimate	95% Lower Confidence	95% Upper Confidence	Pr >  t
Pre-enrollment Adherence Days	.35	.20	.49	.001
Health Morbidity Score*	.01	-.04	.06	.707
Intervention	.07	.00	.14	.054
Male	.07	-.04	.18	.237
African American(1)	-.06	-.15	.02	.150
Hispanic(1)	.05	-.04	.14	.275
Age	.01	.00	.01	.009
Mail Recruitment Cohort(2)	.04	-.03	.11	.307
Education	.05	.02	.08	.002
Alcohol or Drug Diagnosis Within 12 Months After Enrollment	-.01	-.15	.13	.892
Number of Outpatient Visits with Psychiatrist After Enrollment	.00	-.01	.01	.685

\*Based on Johns Hopkins Adjusted Clinical Groups (ACG) Case-Mix System

(1) Reference group is white, (2) Reference group is In-person recruitment cohort

Table 3. Multivariate Predictors of Persistence with Antidepressants

Parameter	Parameter Estimate	Hazard Ratio	95% Lower Confidence	95% Upper Confidence	Pr > ChiSq
Pre-enrollment Persistence Days*	-.002	1.00	1.00	1.00	.011
Health Morbidity Score**	-.12	.89	.59	1.33	.560
Intervention	.25	.78	.46	1.32	.353
Male	-.29	.75	.31	1.83	.521
African American(1)	.62	1.86	1.02	3.40	.043
Hispanic(1)	-.44	.65	.31	1.36	.248
Age	-.03	.97	.94	1.00	.034
Mail Recruitment Cohort(2)	-.03	.97	.57	1.65	.907
Education	-.35	.71	.57	.88	.002
Alcohol or Drug Diagnosis Within 12 Months After Enrollment	-.37	.69	.26	1.81	.453
Number of Outpatient Visits with Psychiatrist After Enrollment	-.01	.99	.91	1.09	.875

\*Pre-enrollment persistence days estimate and hazard ratio reflect a 30-day visit of time

\*\*Based on Johns Hopkins Adjusted Clinical Groups (ACG) Case-Mix System

(1) Reference group is white, (2) Reference group is In-person recruitment cohort

## DISCUSSION

Overall, demographic and baseline participant characteristics did not significantly differ between the intervention and control cohorts (Table 1). The majority of patients receiving an antidepressant drug for major depression were female (89%), middle aged (mean = 47.8 years), non-white (61%), had a high-school diploma or greater (59%), and low-income (mean pay range \$12,000 – 12,999). A majority of patients received a selective serotonin reuptake inhibitor for their major depression (Figure 1).

The mean antidepressant drug adherence rate (i.e., PDC) observed among participants during the post-enrollment period was  $67 \pm 24$  percent in the intervention group vs.  $63 \pm 27$  percent in the control (Figure 2). Subgroup analyses of participants recruited in-clinic ( $n=67$ ) showed significant differences in mean PDC between the intervention ( $67\% \pm 24$ ) and control ( $54\% \pm 24$ ) groups. No significant differences in PDC were observed in cohorts recruited by mail/phone( $n=99$ ).

Predictors of drug adherence included patients with previous adherence, who were older and with higher education to have higher PDC rates (Table 2). Predictors of drug persistence were similar to adherence with the inclusion of race/ethnicity; African-Americans were more likely to have a gap in anti-depressant refills compared to whites participants (Table 3).

Study limitations include inability to determine if patients actually took medication from claims data, sample size, did not assess patient drug switching, titration, or reason for discontinuation.

## CONCLUSION

This study examined trends in antidepressant adherence and persistence among uninsured working adults diagnosed with major depression receiving care through the Texas DMIE program. Intervention participants enrolled in the program had marginally higher antidepressant adherence compared to control. However, higher adherence rates were observed in the intervention group vs. control among participants recruited in-clinic rather than by mail/phone, reflecting the program's potential to improve medication taking behaviors among this particular patient subgroup. This analysis is a first step in assessing the influence of these types of interventions. Follow-up investigation is planned to assess the longer-term impact of the DMIE program on antidepressant adherence and persistence. Findings from this and future analyses can be useful in helping guide ongoing efforts to optimize antidepressant management programs targeted toward uninsured working adults with depression.

