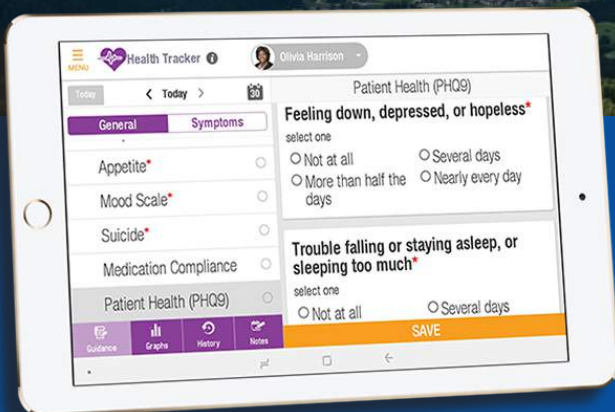# Case Study
Improving Behavioral Health Outcomes
Utilizing Enterprise Virtual Care Technology

Carter Health Psychiatry demonstrates measurable improvement in patients with anxiety and depression when using Medocity's Virtual Care Platform as part of an outpatient treatment regimen.

In May 2018, Carter Health Psychiatry & Wellness, a Texas-based medical practice, initiated a real-world study of virtual care technology utilization in an outpatient psychiatric patient population (n=40). Carter Health selected Medocity's virtual care platform which can be easily configured for multiple behavioral health use cases.

Study design

Patients were enrolled and stratified into one of two cohorts – one with a primary diagnosis of a depressive disorder and another for anxiety disorders. Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) scales were sent out weekly with daily medication reminders and ad hoc engagement with clinic staff utilizing secure messaging and video chats for non-emergent needs. For patients with depressive disorders, the system enabled clinic staff to track patient-reported non-compliance, chronic suicidality, and changes in symptoms over time including medication non-compliance, insomnia/hypersomnia (sleep), hypo/hyperphagia (appetite), lack of behavioral activation (energy) or thoughts of death/self-harm (suicide). These were also compared with PHQ-9 data collected weekly. Similarly, for those with anxiety, medication compliance, sleep, somatic complaints, and suicidality were tracked with GAD-7 data. Patient-reported values outside of set parameters triggered real-time contacts by clinic staff, and increased focus was given to these symptoms during subsequent visits.

Goal
Engage a psychiatric outpatient population with remote care technology to improve symptom tracking and management, therapy and medication compliance, early detection, and crisis management intervention capabilities.

Solution
The Medocity Virtual Care Platform configured for depression and anxiety including clinical protocols, remote monitoring, reminders, alerts, patient support resources, and secure communications (televisits/messaging).

Study Design (n=40, 90 days)
Two patient cohorts (depression and anxiety) tracking symptoms (PHQ-9 and GAD-7 scales), compliance, utilization and engagement.

Results/Benefits
Improved outcomes
Greater symptom reporting accuracy
Prevention of self-harm and suicide
Strong medication compliance
High platform utilization
Reduction in appointment time

Key findings
Overall, the study successfully demonstrated positive impact on patient health, engagement, and satisfaction (see data on following pages):

Better outcomes and improved symptom reporting accuracy
Patients showed notable improvements in mood and anxiety, and patients from both cohorts benefited from greater engagement and support. In addition, the platform drove increased utilization of clinically-valid, evidence-based scales to track patient symptoms providing staff with high quality data to continue or adjust treatment in real time.

Consistently high medication compliance
Patients exhibited high levels of compliance with prescribed medications averaging 90-95% during the 90-day study period. In addition to medication tracking and reminders, the Medocity platform offered patients a new medium to discuss side effects, inefficacy, or success providing useful clinical information between visits and for scheduling appointments.

Patient satisfaction and engagement
Overwhelmingly, respondents indicated that the platform was easy to use, positively impacted their care, and improved access to their clinical team. More than 90% of respondents felt engaged with their own care and treatment, and 88% felt Medocity's solution helped in their care and recovery. Patient usage ranged from 85%-100% during the study period, with 90% of compliant patients utilizing the platform 3 or more times per week.

Depression Improvement
(based on PHQ-9)

In a general psychiatric population with a depressive disorder, the PHQ-9 is a validated self-report questionnaire that tracks depression symptoms on a scale of 0-27. Patients exhibited trending depression improvement based on PHQ-9 data collection; however, in this population, there tended to be more fluctuations in depression level in subsequent self-reports. For the majority, these numbers trended down, indicating improving mood and reduction in depression symptoms. Remote patient data was incorporated into subsequent visits which aided in showing patients visual representations of their improvement. This data was supplemented by daily questionnaires, and across all study participants, PHQ-9 scores decreased 3.0 points on average, or 27%.

PHQ-9 Scores (0-27)
Per User Per Day

Anxiety Improvement
(based on GAD-7)

In a general psychiatric population with anxiety, the GAD-7 is a standard, validated self-report questionnaire that captures level of anxiety for a given patient using a 0-21 scale. This score tends to increase or remain consistent score over time in untreated patients. Across study participants, GAD-7 scores decreased 3.6 points on average, or 32%. With remote monitoring, Carter Health was able to track and identify a majority of patients, in treatment, experiencing down-trending (improving anxiety) with one outlier remaining consistent over the duration of the study. This remotely captured data represents the use of an evidence-based clinical scale that was completed pre-visit and incorporated into patient appointments to discuss progress, identify clinically significant changes, and provide ongoing treatment decisions. When reviewed, these scales are also billable.

GAD-7 Scores (0-21)
Per User Per Day

"This truly incredible tool has so many utilizations in crisis management (the toughest part of psychiatry) and for timelier interventions to increase engagement (by simply letting patients know we care especially in their moment of need), prevent hospitalization, and potentially stop loss of life." — R. Dakota Carter, MD, Ed.D

Overwhelmingly, respondents indicated that the system was easy to use and positively impacted the clinician-patient connection. Nearly all of the respondents felt more engaged with their own care and treatment, and 88% felt the application helped in their care and recovery. Patient utilization averaged 93% throughout the study period.

Patients also exhibited high levels of compliance with prescribed treatments averaging 90-95% during the study time frame. In addition to medication tracking and reminders, the Medocity platform offered patients a new medium to discuss side effects, inefficacy, or success, providing useful clinical information between visits and for scheduling appointments.

The application was easy to use.	100% strongly agree or agree
I had a better connection with the provider.	100% strongly agree or agree
Completing the sessions was straightforward and easy.	100% strongly agree or agree
Using the Medocity app was a benefit in my care and recovery.	88% strongly agree or agree, 12% neutral
Carter psychiatry monitoring my responses gives me greater piece of mind.	100% strongly agree or agree
I feel more engaged with my care and treatment utilizing the Medocity app.	91% strongly agree or agree, 9% neutral
I am more satisfied with Carter psychiatry because they use the Medocity app.	78% strongly agree or agree, 22% neutral
I would recommend the Medocity app to friends and other HCPs.	84% strongly agree or agree, 16% neutral

Using the Medocity app was a benefit in my care and recovery.

- 65.63% Agree
- 21.88% Strongly Agree
- 12.5% Neutral

I feel more engaged with my care and treatment utilizing the Medocity app

- 34.38% Strongly Agree
- 56.25% Agree
- 9.38% Neutral
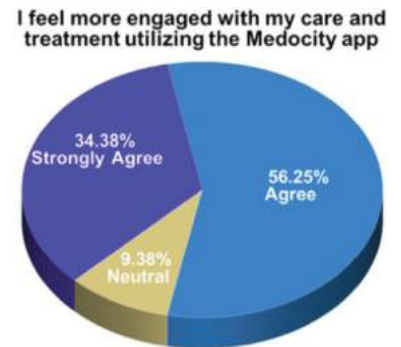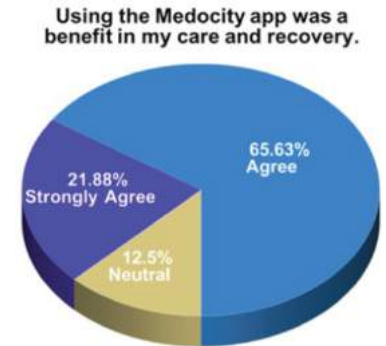
"I love using the Medocity application - the system is very easy to use, and I feel like I have a better connection to my doctor." – Patient Quote

Gartner Cool Vendor 2018

Gartner designates Medocity as a "Cool Vendor" in Health Value Delivery (2018)

MEDTECH BREAKTHROUGH AWARD 2018

BEST VIRTUAL CARE SOLUTION award winner (2018)

BECKER'S HOSPITAL REVIEW

Top Population Health Companies to know in 2017

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