### Chronic Illness Treatment: An Integrated Approach

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#### Objectives

Dose comprehensiveness, fully integrated health care delivered by a multi-disciplinary team helps patients with multiple chronic health problems, including serious psychiatric disorders, manage their health and improve their lives.

#### Design/Methods

The study is an Institutional Review Board approved quasi-experimental time series with a comparison group. Data are collected at enrollment and every six months for up to 36 months. Standardized instruments to assess chronic illness, health status, patient activation, pain and impact of illness. Claims data is used to measure impact on costs and service utilization.

#### Principal Findings & Results

In the first year, the integrated team approach produced a statistically significant improvement in diastolic blood pressure, anxiety, body mass index, depression, substance use, patient activation to manage their illness, and health status. There was a 41% reduction in psychiatric inpatient admissions and a 47% reduction in inpatient days as compared to the prior year for the team’s patients who had a serious psychiatric condition. Estimated savings were $157,200.

What we found. People who had symptoms of high blood pressure, obesity, depression, anxiety, and substance use showed statistically significant improvement. Those who did not have these problems stayed well. People who reported health status on the EQ-5D that was below the median for the group, reported improved health. Those above the median did not have a significant change, which means that their higher perceived health stayed that way. People who had low motivation improved while those who started with higher motivation remained motivated. In the case of patient’s report of health status, there was a statistically significant movement toward the mean for both those initially above and below the median.

#### Conclusions/Impact on Health Centers

The study is the first to present a data based approach to treatment of multiple co-occurring chronic health conditions, including serious psychiatric conditions and substance use disorders, results in better health and patient self-management. There was also a large reduction in psychiatric hospital admissions.

Typical episodic outpatient care of chronic illnesses and fragmented care due to traditional health care silos does not work for patients with multiple serious psychiatric conditions and substance use disorders.

Does comprehensive, fully integrated health care delivered by a multi-disciplinary team help patients with multiple chronic health problems, including serious psychiatric disorders, manage their health and improve their lives?

#### Health Outcomes

#### References


#### Health Status

Health status was measured using the single index of the EQ-5D-3L.

- **n = 30, treatment probability was less, matched p = 0.801**
- **n = 25, treatment probability was less, matched p = 0.801**

#### Depression

Depression was measured using the PHQ-9 (Patient Health Questionnaire).

- **n = 35, treatment probability was less, matched p = 0.002**
- **n = 30, treatment probability was less, matched p = 0.801**

#### Anxiety

Anxiety was measured using the GAD-7 (General Anxiety Disorder).

- **n = 37, treatment probability was less, matched p = 0.002**
- **n = 32, treatment probability was less, matched p = 0.801**

#### Substance Use

Substance use was measured using the CAGE-AID (C Eaglin, G Allen, D Goldsmith, S I. Davis, 1965). A score of 2 or more indicates a possible alcohol problem, while a score of 3 or more indicates a possible problem with drug use.

- **n = 29, treatment probability was less, matched p = 0.161**
- **n = 35, treatment probability was less, matched p = 0.001**

#### CAGE-AID

- **n = 22, treatment probability was less, matched p = 0.188, not significant**
- **n = 36, treatment probability was less, matched p = 0.355, not significant**

#### PHQ9 score

A score of 15 or higher indicates moderately severe to severe depression.

#### Anxiety

Anxiety was measured using the GAD-7 (General Anxiety Disorder).

- **n = 37, treatment probability was less, matched p = 0.002**
- **n = 32, treatment probability was less, matched p = 0.801**

#### Depression

Depression was measured using the PHQ-9 (Patient Health Questionnaire).

- **n = 35, treatment probability was less, matched p = 0.002**
- **n = 30, treatment probability was less, matched p = 0.801**

#### Blood Pressure

Blood pressure was measured using the Dime (Dime (Scalp and Artificial Intelligence). A score of 130/80 mm Hg is considered to be elevated.

- **n = 64, treatment probability was less, matched p = 0.001**
- **n = 63, treatment probability was less, matched p = 0.801**

#### Blood Sugar

Blood sugar was measured using the HbA1c (Hemoglobin A1c). A score of 6.5% or above is considered to be elevated.

- **n = 64, treatment probability was less, matched p = 0.001**
- **n = 63, treatment probability was less, matched p = 0.801**

#### Body Mass Index

Body mass index was measured using the BMI (Body Mass Index).

- **n = 30, treatment probability was less, matched p = 0.161**
- **n = 35, treatment probability was less, matched p = 0.001**

#### Patient Activation

Patient activation was measured using the PAM-13 (Patient Activation Measure).

- **n = 43, treatment probability was less, matched p = 0.001**
- **n = 37, treatment probability was less, matched p = 0.001**

- **n = 22, treatment probability was less, matched p = 0.188, not significant**
- **n = 36, treatment probability was less, matched p = 0.355, not significant**

#### Admissions

Admissions was measured using the 2013 (2013). A score of 2 or more indicates a possible alcohol problem, while a score of 3 or more indicates a possible problem with drug use.

- **n = 43, treatment probability was less, matched p = 0.001**
- **n = 37, treatment probability was less, matched p = 0.001**

#### 1 Year Psychiatric Facility Reductions

- **n = 140 patients**

The following graphs show the health outcomes of the Chronic Illness Treatment: An Integrated Approach. The graphs display the improvements in various health outcomes such as blood pressure, depression, anxiety, substance use, patient activation, and health status. The data shows a significant reduction in psychiatric inpatient admissions and inpatient days, as well as improvements in physical and mental health metrics.