# Depression & Chronic Disease in Northeast Ohio, 2013-14

**With this report, Better Health presents new data on depression and its impact on patients with diabetes, high blood pressure and heart failure.**

**Many depressed people suffer from generally poor health, have limited resources, and, without proper management of their mental and physical conditions, are prime candidates to incur avoidable and expensive health care costs.**

## INTRODUCTION

Since 2012, Better Health has reported on depression diagnosis and testing for patients with diabetes, and, more recently, those living with high blood pressure and with heart failure. By 2020, it appears that depressive disorders will be second only to heart disease in the global burden of disease.

Specifically, we focus on:

- whether each patient had a diagnosis of depression in the electronic health record, and
- at six health systems, whether each patient completed a standard tool for screening, diagnosing, monitoring and measuring the severity of depression, called the Patient Health Questionnaire (PHQ-2/PHQ-9).

Overall, across conditions, roughly one-third of patients with these chronic conditions are identified as depressed using our approach. Across health systems, we see substantial variation in depression rates by this standard, with as few as 18% and as many as 44% of patients with diabetes, for example, identified as "depressed."

> *At Better Health,* our partners use these depression diagnosis and testing results to more effectively care for thousands of patients who are challenged by multiple illnesses. Understanding the relationship between depression and other chronic illnesses is an important step towards better population health and better delivery of health care.
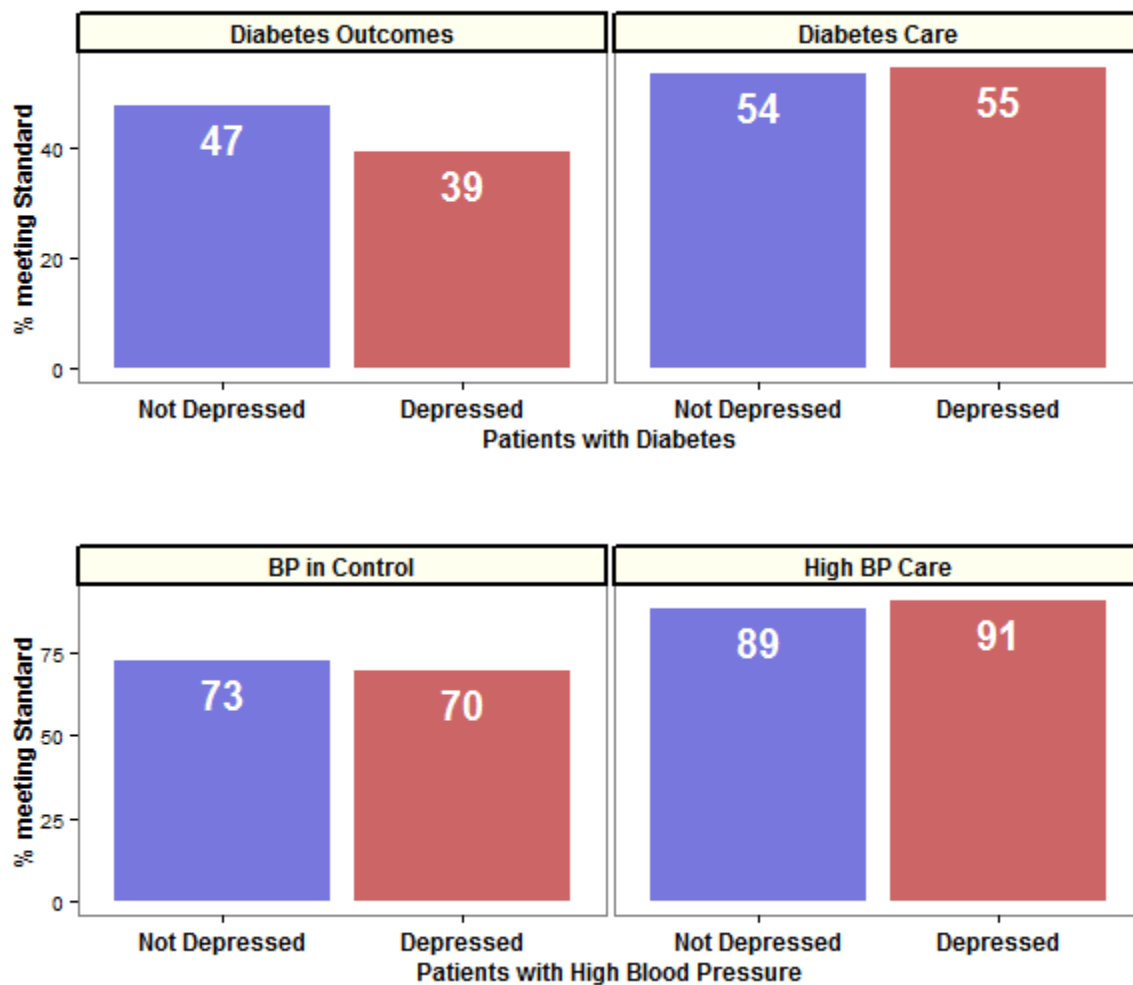
Details on our reporting approach are provided at the end of this data brief.

# Depression and Chronic Disease in Northeast Ohio, 2013-14

**DEPRESSED PATIENTS WITH DIABETES OR HIGH BLOOD PRESSURE FARE WORSE THAN NON-DEPRESSED PATIENTS ON OUTCOMES, A LITTLE BETTER ON PROCESSES OF CARE**

Depressed Patients are in poorer control of their diabetes (particularly with regard to weight and smoking) and also high blood pressure, but fare slightly better than non-depressed patients in the care they receive from their providers for diabetes and high blood pressure. For example, only 39% of depressed (47% of non-depressed) patients met our Diabetes Outcome standard, which requires substantially more engagement and self-management by the patient than our Care standard, where depressed and non-depressed patients show comparable results.

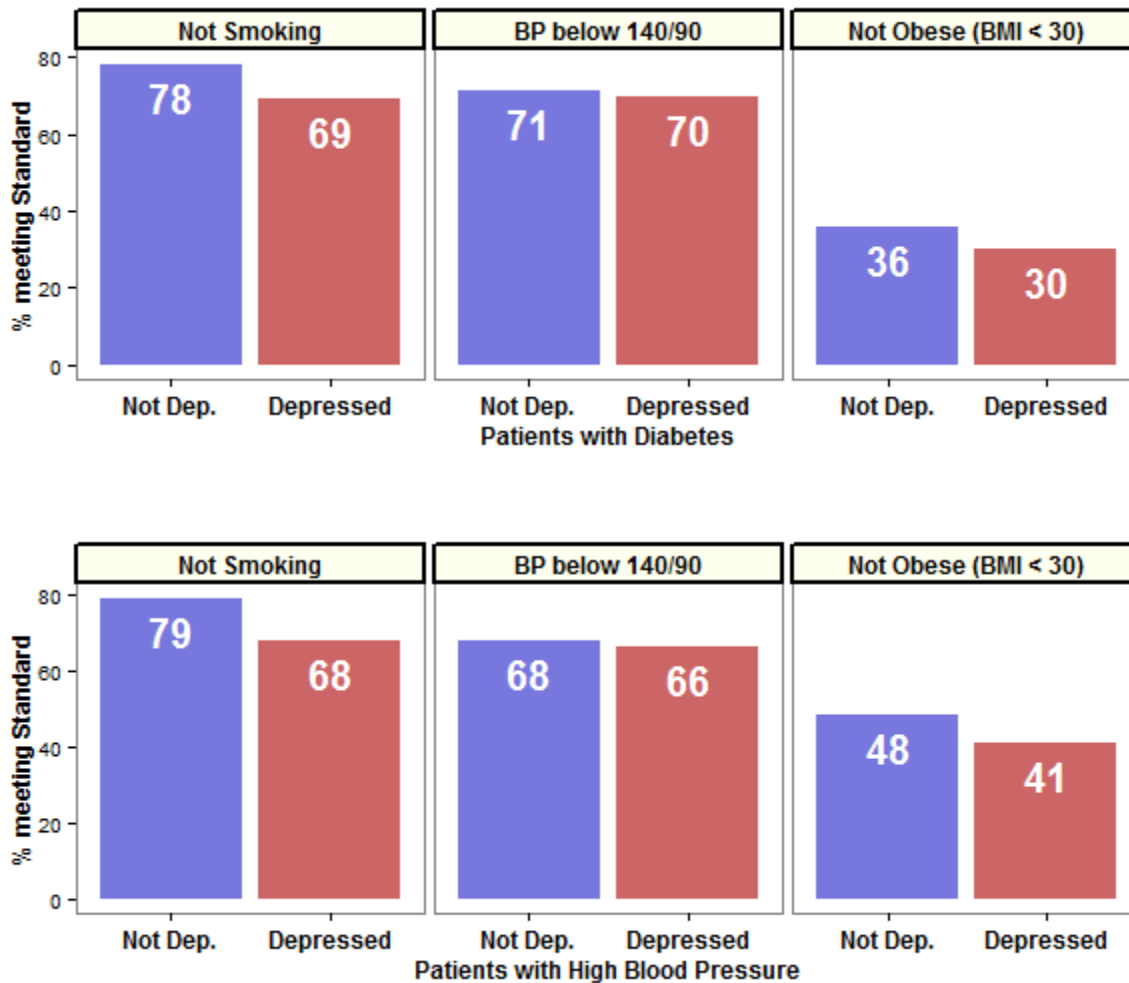**Figure 1. Diabetes and High BP standards, by Depression Status, 2013-14 Reporting**

# Depression and Chronic Disease in Northeast Ohio, 2013-14

**Better Health Greater Cleveland** — *An Alliance for Improved Health Care*

## DEPRESSED PATIENTS ARE HEAVIER, MORE LIKELY TO SMOKE, AND LESS LIKELY TO BE IN CONTROL OF THEIR BLOOD PRESSURE

Next, we focus on depression and achievement of three crucial population health measures among our patients with diabetes (Figure 2, top), and then high blood pressure (Figure 2, bottom). Across conditions, patients who are not depressed have results which are slightly higher (better) than those who are depressed in terms of tobacco use, improved blood pressure and weight control.

**Figure 2. Population Health Standards, by Depression Status, 2013-14 Reporting**

# Depression and Chronic Disease in Northeast Ohio, 2013-14

**Better Health Greater Cleveland** — An Alliance for Improved Health Care

## DEPRESSION STATUS AND PATIENT DEMOGRAPHICS / SOCIO-ECONOMIC MEASURES

Table 1 compares our depressed and non-depressed patients with diabetes, or with high blood pressure, in terms of insurance type, race and ethnicity, language preference, age, gender, place of residence, estimated income and education. **Patients with depression are far more likely to be female or to have Medicaid insurance**, and are substantially more likely to be White, to be of Hispanic ethnicity, and to live in poorer neighborhoods in Cleveland.

### TABLE 1. DEPRESSED AND NON-DEPRESSED PATIENTS IN 6 HEALTH SYSTEMS - 2013-14 REPORTING

| | Patients with Diabetes | | Patients with High BP | |
|---|---|---|---|---|
| **Depression Status** | "Not Depressed" | Depressed | "Not Depressed" | Depressed |
| **# of Patients** | 12,382 | 6,572 | 43,900 | 18,149 |
| **By Insurance** | | | | |
| % Medicare | 37 | 38 | 45 | 40 |
| % Commercial | 38 | 26 | 35 | 27 |
| % Medicaid | 21 | 32 | 16 | 29 |
| % Uninsured | 5 | 4 | 4 | 4 |
| **By Race** | | | | |
| % White | 41 | 48 | 45 | 51 |
| % African-Am. | 55 | 49 | 51 | 47 |
| % Other | 4 | 3 | 4 | 2 |
| **% Hispanic Ethnicity** | 7 | 12 | 4 | 8 |
| **% preferring to speak English** | 89 | 90 | 90 | 92 |
| **Average Age** | 58.3 | 55.6 | 62.7 | 58.2 |
| **% Female** | 43 | 60 | 48 | 62 |
| **By Residence** | | | | |
| % City of Cleveland | 53 | 59 | 47 | 54 |
| % Cuyahoga Suburbs | 36 | 32 | 40 | 36 |
| % Outside Cuyahoga | 11 | 9 | 13 | 10 |
| **Est. Median Income** | $40,100 | $37,100 | $42,400 | $39,000 |
| **Est. High School Graduation Rate** | 82.1 | 80.2 | 83.3 | 81.2 |

# Depression and Chronic Disease in Northeast Ohio, 2013-14

To provide a basis for comparison between patients with and without depression, we used a combination of results. We define depressed patients in this report to include patients who either had a diagnosis of depression in their medical record in our reporting period (July 2013 through June 2014), or who had a PHQ-9 score of 10 or higher in that period. All other patients are reported as "not depressed".

All 8 reporting health systems provided information on depression diagnosis for patients with diabetes and high blood pressure, and information about PHQ assessment is available for those conditions from the 42 practices affiliated with Care Alliance, HealthSpan, Louis Stokes Cleveland VA, the MetroHealth System, Neighborhood Family Practice, and St. Vincent's / Sisters of Charity. For patients with heart failure, we have diagnosis data for all three systems which report heart failure data, and additional PHQ data for 30 practices in two health systems (HealthSpan and MetroHealth.)

## TABLE 2. IDENTIFYING DEPRESSED PATIENTS – SYSTEMS WITH FULL PHQ ASSESSMENT DATA - 2013-14 REPORTING

| Condition | Depression Diagnosis in EHR | No Diagnosis but PHQ9 > 10 | Depressed Patients | % Depressed | Range by System |
|---|---|---|---|---|---|
| Diabetes | 6,180 | 392 | 6,572 | 34.7% | 18% to 44% |
| High Blood Pressure | 17,139 | 1,010 | 18,149 | 29.2% | 16% to 38% |
| Heart Failure | 1,184 | 51 | 1,235 | 36.1% | 22% to 45% |

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## DEPRESSION DIAGNOSIS FROM ELECTRONIC HEALTH RECORD

At a regional level, across all 8 reporting health systems, between 14 and 19 percent of patients have a diagnosis for depression in the electronic health record, within each of our chronic conditions (Table 3a). Rates of depression diagnosis for patients with chronic conditions range from a low of 3% to a high of 44% across these eight health systems.

### TABLE 3A. DEPRESSION DIAGNOSIS RATES FROM ELECTRONIC HEALTH RECORDS, REGION-WIDE – 2013-14 REPORTING

| Condition | Patients with Depression Diagnosis | % of All Patients |
|---|---|---|
| Diabetes | 6,767 | 19.2 |
| High Blood Pressure | 19,198 | 14.0 |
| Heart Failure | 1,300 | 18.4 |

## FOCUS ON SIX HEALTH SYSTEMS

As noted, in most of this data brief, we focus on the six health systems that provided complete data on PHQ assessment, as well as depression diagnosis. As we see in Table 3b, looking just at these systems, depression diagnosis rates are substantially higher.

### TABLE 3B. DEPRESSION DIAGNOSIS RATES FROM HEALTH SYSTEMS WITH COMPLETE PHQ DATA, 2013-14 REPORTING

| Condition | Patients with Depression Diagnosis | % of All Patients | Range, by System |
|---|---|---|---|
| Diabetes | 18,954 | 32.6 | 18% to 42% |
| High Blood Pressure | 17,139 | 27.6 | 15% to 37% |
| Heart Failure | 1,184 | 34.6 | 21% to 44% |

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## ASSESSMENT OF DEPRESSION STATUS AND SEVERITY

For each patient completing a PHQ assessment, we collected the result (on a scale from 0 to 27, with scores of 10 or higher indicating at least moderate depression.) Table 4 shows the rate of assessment across the six reporting health systems. Just under half of all patients were assessed for depression in 2013-14.

### TABLE 4. PHQ DEPRESSION ASSESSMENT RATES FROM HEALTH SYSTEMS REPORTING PHQ INFORMATION, 2013-14 REPORTING

| Condition | Patients with PHQ Assessment | % of All Patients | Range, by System |
|---|---|---|---|
| Diabetes | 9,897 | 52.2% | 23% to 98% |
| High Blood Pressure | 27,892 | 45.0% | 22% to 97% |
| Heart Failure | 1,642 | 47.9% | 36% to 67% |

The PHQ result can be divided into five categories, which describe the severity of depression. About 85% of patients who completed the PHQ in 2013-14 had results indicating negligible depression, as shown in Table 5.

### TABLE 5. PHQ SCORES AND IMPLIED DEPRESSION SEVERITY, BY CONDITION, AMONG SITES REPORTING PHQ DATA, 2013-14 REPORTING

| Depression Severity PHQ Score | Negligible 0 to 4 | Mild 5-9 | Moderate 10-14 | Mod-Severe 15-19 | Severe 20+ |
|---|---|---|---|---|---|
| Diabetes, % | 83.8 | 5.4 | 4.3 | 3.6 | 2.9 |
| High Blood Pressure, % | 85.6 | 5.1 | 3.9 | 3.2 | 2.3 |
| Heart Failure, % | 85.8 | 5.5 | 4.1 | 2.6 | 1.9 |

23% of patients who completed a PHQ in 2013-14 had a prior diagnosis of depression. PHQ assessments were done both to screen for depression in patients without a prior diagnosis for depression, and also for tracking patients who did already have such a diagnosis.

**This data brief was prepared by Thomas E. Love, PhD - Director, Data Center**