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Care Management Processes Used Less Often For Depression Than For Other Chronic Conditions In US Primary Care Practices

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ABSTRACT Primary care physicians play an important role in the diagnosis and management of depression. Yet little is known about their use of care management processes for depression. Using national survey data for the period 2006–13, we assessed the use of five care management processes for depression and other chronic illnesses among primary care practices in the United States. We found significantly less use for depression than for asthma, congestive heart failure, or diabetes in 2012–13. On average, practices used fewer than one care management process for depression, and this level of use has not changed since 2006–07, regardless of practice size. In contrast, use of diabetes care management processes has increased significantly among larger practices. These findings may indicate that US primary care practices are not well equipped to manage depression as a chronic illness, despite the high proportion of depression care they provide. Policies that incentivize depression care management, including additional quality metrics, should be considered.

The Centers for Disease Control and Prevention (CDC) estimates that 6.8–8.7 percent of the US adult population suffers from depression at any given time.^{1,2} There are eight million ambulatory care visits for depression diagnosis and management each year, which collectively cost over \$12 billion.³ The CDC also estimates that depression causes the loss of 200 million workdays annually, which costs employers \$17–\$44 billion a year.⁴ Among patients with chronic diseases, having depression with other conditions is associated with increased risk of morbidity and mortality.^{5–7}

Primary care physicians play an important role in diagnosing and managing depression. Of the eight million ambulatory care visits for depression each year, over half are to a primary care physician.^{2,3} This may be because access to psychiatrists is a problem in the US health care

system, many patients have relatively mild forms of depression that are most appropriately managed by primary care physicians, patients may feel there is a stigma in seeing a psychiatrist, or patients simply do not know which psychiatrist to go to. In any case, primary care physicians are the most common gateway into the health care system for patients with depression.^{8–11}

It is unclear whether primary care practices are well equipped to manage depression as a chronic illness. Well-established chronic care models emphasize proactive population-based care and having patients play an active role in their health care.^{12–14} Key elements of these models are disease registries, nurse care managers, and patient education. The models have been effective not only for the management of chronic medical diseases such as diabetes and hypertension but also for the management of depression.¹³ Specifically, the collaborative care model for depression has

been effective in reducing symptom burden and improving both medication compliance and patient satisfaction.^{15–21}

However, a much lower priority has been assigned to depression than to other medical conditions in primary care. For example, the Healthcare Effectiveness Data and Information Set (HEDIS), which is used by a large proportion of health plans to assess quality of care, has seven measures for diabetes management and only one measure for depression management.²² Also, as a result of the historical separation between mental and physical health care, primary care physicians may still feel that the management of chronic behavioral health conditions is outside their scope of practice.

Little is known about the use of care management processes for depression. Equally unclear is whether their use lags behind the use of similar processes for other chronic conditions. To investigate that issue and to assess whether primary care practices are well equipped to manage depression as a chronic illness, we analyzed data from the three largest national surveys of physician practices. We sought to answer the following four research questions: What care management processes do primary care practices currently use for patients with depression; how do current rates of use of such care management processes compare to those of similar processes for other chronic illnesses; what practice characteristics are associated with high use of care management processes for patients with depression; and have the rates of use of care management processes for depression increased over time—and if they have, what factors were associated with the increase? The answers to these questions may inform policy makers and the medical community about possible deficiencies in the use of care management processes for depression among primary care practices, so that any deficiencies can be addressed at both local and national levels.

Study Data And Methods

CROSS-SECTIONAL ANALYSIS

► **DATA SOURCES:** We used data from the third round of the largest national survey of physician practices in the United States, the National Study of Physician Organizations. The sample, methods, and content have been described previously.^{23,24}

Briefly, the survey was a forty-minute telephone survey of medical directors, presidents, or CEOs of medical groups in the United States. It focused on the use of care management processes for patients with depression, asthma, diabetes, or congestive heart failure. The survey

collected information on the structural characteristics of the medical group (for example, the number of physicians, ownership, and specialty mix), the functionality of the group's health information technology (IT), and external incentives that were in place to improve quality (such as public reporting and payments for achieving desired quality measures).

The survey sample was derived from respondents to previous similar surveys and an additional stratified random sample of national medical groups.^{23,24} Data were collected in 2012 and 2013. Practices with fewer than twenty physicians were eligible to participate as long as 40 percent or more of their physicians were in the fields of primary care, cardiology, endocrinology, or pulmonology. Practices with twenty or more physicians were eligible if 30 percent or more of their physicians were in these specialties. Academic faculty practices were excluded. The adjusted response rate was 49.7 percent.²⁵

► **SAMPLE:** From the 1,398 practices that responded to the third round of the National Study of Physician Organizations, we selected practices that were all primary care (100 percent of the physicians were primary care—that is, general internists, family practitioners, and general practitioners) or multispecialty (33–99 percent of the physicians were primary care), which yielded 1,070 practices for analysis. (A subset of 802 of these practices were used in our longitudinal analysis.) We excluded practices that had fewer than 33 percent primary care physicians. Given the complex sampling structures of the study, population ratio-adjusted weights were determined based on sampling probabilities with poststratification adjustments.²⁶

► **VARIABLES:** Following the Chronic Care Model developed by Edward Wagner and colleagues,^{12,14} we used as our main outcome variable the use of care management processes for patients with depression. Respondents in the third round of the National Study of Physician Organizations were asked if they used each of the following five care management processes: disease registries, nurse care managers, feedback of quality data to physicians, reminders to patients, and nonphysician staff for patient education (for details on the care management process index, see online Appendix A).²⁷

We calculated an index ranging from 0 to 5 for the use of care management processes for each of four conditions—depression, asthma, congestive heart failure, and diabetes—and an aggregated score ranging from 0 to 20 for all of the conditions combined.²⁸ We treated all of the elements of the index equally because we were unable to identify evidence to establish which elements should be weighted higher or lower

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than the others.²⁹

We examined a number of practice characteristics for their potential association with scores on the index. The characteristics were the number of physicians in the practice; the specialty mix (primary care only or multispecialty); ownership (by a physician or physician group, hospital, or other); years in existence; location (Northeast, Midwest, South, or West); and scores on health IT, pay-for-performance, and public reporting indexes.

The pay-for-performance index is a measure (range: 0–3) of the external incentives received by a practice for its performance on clinical quality measures, patient experience, and efficient use of resources. A higher pay-for-performance score indicates more external incentives for quality in general. The public reporting index is a measure (range: 0–2) of the extent to which patient satisfaction and clinical quality for the practice are reported by external entities (for details on the pay-for-performance index, see Appendix A).²⁷

The health IT index (range: 0–14) is based on the following capabilities of a practice's electronic health record: documentation, clinical decision support, quality measurement, order entry, access to data, and connectivity with patients. A higher health IT score indicates more health IT capabilities.

► **ANALYSIS:** We calculated the mean scores for the use of care management processes for patients with depression, asthma, congestive heart failure, or diabetes and used the student *t*-test to compare the scores. We calculated the percentage of practices that used each of the care management processes listed above (registries, nurse care managers, quality feedback, patient reminders, and nonphysician patient educators) for patients with depression, asthma, diabetes, and congestive heart failure and used analysis of variance to compare these percentages.

We used multivariable linear regression to identify which of the practice characteristics listed above were correlated with scores for the use of care management processes for depression. We considered a *p* value of <0.05 to be significant for two-sided tests. All analyses were performed with SAS software, version 9.3.

This study was approved by the Institutional Review Boards of the University of California, Berkeley, and Weill Cornell Medical College.

LONGITUDINAL ANALYSIS

► **DATA SOURCES:** For the longitudinal analysis, we used data from the second and third rounds of the National Study of Physician Organizations combined with data from the National Study of Small and Medium-Sized Physician Practices (for details on the characteristics of

the surveys, see Appendix B).²⁷ The second round of the National Study of Physician Organizations collected data in the period 2006–07, focused on large practices (those with twenty or more physicians), and had an adjusted response rate of 60.3 percent. The National Study of Small and Medium-Sized Physician Practices collected data in the period 2007–10, focused on small and medium-size practices (those with 1–19 physicians), and had an adjusted response rate of 63.6 percent.²⁵

Our longitudinal analysis focused on two comparison groups. The first comparison group consisted of the eighty-three large primary care practices that responded to both the second and third rounds of the National Study of Physician Organizations. The second comparison group consisted of the 719 small or medium-size primary care practices that responded to both the third round and the National Study of Small and Medium-Sized Physician Practices.

► **ANALYSIS:** In each of the two comparison groups, we examined the mean use of care management processes for depression as well as their use for the other three conditions studied (asthma, congestive heart failure, and diabetes) at each of the two study time points (2007–10 and 2012–13 for small or medium-size practices, and 2006–07 and 2012–13 for large practices). We performed survey-weighted multivariable linear regressions with practice fixed effects to assess the change in the use of care management processes for depression among large practices (using data from the second and third rounds of the National Study of Physician Organizations) and small or medium-size practices (using data from the third round and the National Study of Small and Medium-Sized Physician Practices).

This model accounted for changes over time in the number of physicians; specialty mix; ownership status; and scores on the pay-for-performance, public reporting, and health IT indexes. Time-invariant characteristics were accounted for in the fixed-effects model.

LIMITATIONS There were a few limitations to our study. First, the response rates for the three surveys ranged from almost 50 percent to over 63 percent. Although these are robust response rates—particularly for physician groups—there may be unobservable differences between respondents and nonrespondents.

Second, the data were based on the responses of a single informant in each group. The survey was intended for the person at each group who was the most knowledgeable to respond to the questions asked, but it was beyond the scope of our research to validate the responses.

Third, our measure of care management processes included five elements that are common to

the Chronic Care Model but not all of the elements of that model. In addition, we did not ask about other elements that are part of other depression care models, such as the use of a psychiatrist for remote consultations or having a mental health specialist embedded in the practice.

Study Results

CROSS-SECTIONAL ANALYSIS The mean size of the practices was 21.1 physicians (standard error: 11.2). The majority of the practices (80.6 percent) were all primary care, and the majority (82.6 percent) were owned by physicians (for details on the characteristics of the cross-sectional sample, see Appendix C).²⁷ The mean number of years in existence for the practices was 21.1 (SE: 0.4). Practices were from all regions of the country. The mean pay-for-performance score was 0.85 (SE: 0.05), the mean health IT score was 7.22 (SE: 0.28), and the mean score for public reporting was 0.87 (SE: 0.03) (Appendix C).²⁷

The mean care management process score for all conditions was 4.8 (SE: 0.3) on a 0–20 scale. For depression, the mean score was 0.8 (SE: 0.02)—that is, fewer than one care management process—which was significantly lower ($p < 0.001$) than the mean scores for asthma (1.1; SE: 0.07), congestive heart failure (1.1; SE: 1.13), and diabetes (1.7; SE: 0.13) (Appendix C).²⁷

Registries were the most frequently used care management process for three of the four conditions, but their use was lower for depression (30 percent) than for the other conditions (33–52 percent; $p < 0.0001$) (Exhibit 1). Similarly, the use of patient educators and patient reminders was lower for depression than the other conditions ($p < 0.0001$).

In multivariable regression, depression care management process scores were negatively correlated with a practice's being multispecialty versus primary care only (coefficient: -0.22) and being in the Midwest versus the Northeast (coefficient: -0.33) (Exhibit 2). The scores were positively correlated with a practice's having been in existence longer, being in the South versus the Northeast, and having a higher score on the health IT index.

LONGITUDINAL ANALYSIS The characteristics of the 83 large practices that responded to both the second and third rounds of the National Study of Physician Organizations and of the 719 small and medium-size practices that responded to the third round and the National Study of Small and Medium-Sized Physician Practices are outlined in Appendix D.²⁷ Among large practices,

when other organizational characteristics and practice fixed effects were controlled for, the diabetes care management process score was the only one that increased significantly, from 2.57 in 2006–07 to 3.22 in 2012–13 ($p = 0.04$) (Exhibit 3). Among small and medium-size practices, there were no significant changes in the scores for any of the four conditions and limited use of care management processes (Appendix E).²⁷

Among large practices in the longitudinal cohort, higher scores on the pay-for-performance index were associated with a higher score on the use of depression care management processes (coefficient: 0.30), when other organizational characteristics were controlled for (Exhibit 4). The same was true among small and medium-size practices. Among these smaller practices, being multispecialty practices, being hospital owned, and having higher scores on the health IT index were also associated with lower depression care management process scores.

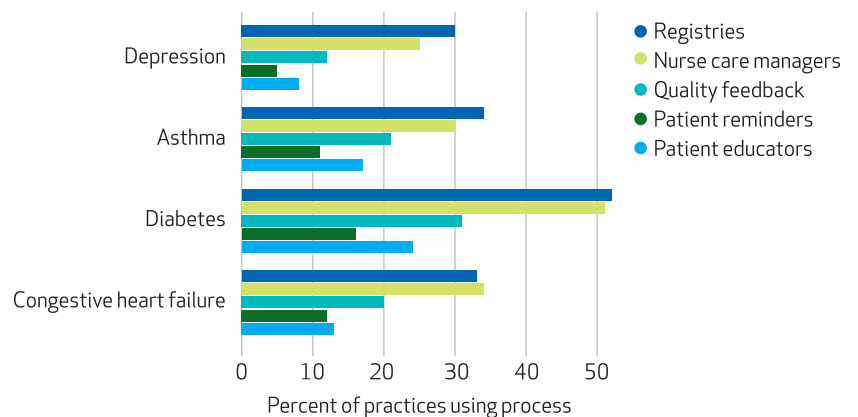
Discussion

In this study using data from the largest survey of physician practices in the United States, we found significantly less use of care management processes by primary care practices for depression, compared to their use for asthma, congestive heart failure, and diabetes. On average, US physician practices that were all or largely (that is, 33 percent or more) primary care used less than one of the five depression care management processes examined, with patient registries being the most commonly used process.

These findings demonstrate that care manage-

EXHIBIT 1

Percentage of US primary care practices using care management processes for four chronic conditions, 2012–13



SOURCE Authors' analysis of data from the third round of the National Study of Physician Organizations, 2012–13. **NOTES** The five processes are described in detail in the text. $N = 802$.

EXHIBIT 2

Estimated correlations between practice characteristics and use of depression care management processes, 2012-13

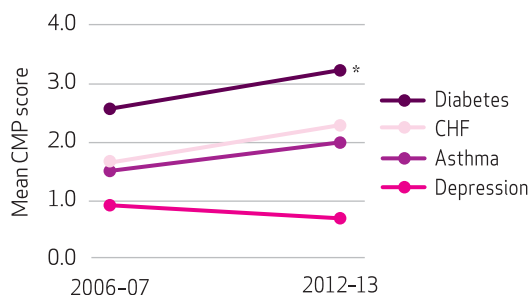
Practice characteristic	Estimated coefficient	p value
Number of physicians	-0.00005	0.90
Specialty mix ^a		
Primary care only	Ref	
Multispecialty	-0.22	<0.001
Owned by:		
Physicians	Ref	
Hospital	0.01	0.88
Other	-0.08	0.62
Age of practice		
Years in existence	0.01	<0.001
Location		
Northeast	Ref	
West	0.12	0.16
South	0.16	0.01
Midwest	-0.33	<0.001
Score on index for:		
Pay for performance	0.06	0.11
Public reporting	0.05	0.29
Health information technology	0.07	<0.001

SOURCE Authors' analysis of data from the third round of the National Study of Physician Organizations, 2012-13. **NOTES** The coefficients are from multivariable regression. All analyses are weighted. The indexes are described in the text. ^aPrimary care only practices are those with 100 percent primary care physicians (general internists, family practitioners, or general practitioners). ^bMultispecialty care practices are those with 33-99 primary care physicians.

ment for depression in primary care lags behind that for other chronic illnesses, particularly diabetes. These findings may signify that US primary care practices are better equipped to use evidence-based processes of care to manage the chronic care of medical than that of behavioral health conditions. This may be particularly true for large practices, which tended to have higher

EXHIBIT 3

Changes in the use of care management processes for four conditions in large primary care practices



SOURCE Authors' analysis of data from the second and third rounds of the National Study of Physician Organizations, 2006-07 and 2012-13, respectively. **NOTES** Large practices (n = 83) are those with at least twenty physicians. The mean care management process (CMP) scores are described in the text. CHF is congestive heart failure. *p < 0.10

care management process scores for asthma, congestive heart failure, and diabetes than for depression. In comparison, small and medium-size practices appear to be using few care management processes overall.

Over time, we found no significant increase in the use of depression care management processes in any of the practice sizes. This lack of change was also seen in the use of similar processes for asthma and congestive heart failure in all practices and for diabetes in small and medium-size practices.

Given shortages of and limitations of access to psychiatrists and other providers of mental health care, as well as comorbidities between depression and other chronic medical conditions, much attention has been given to the integration of behavioral health care into primary care.^{30,31} Integrated models such as the Collaborative Care Model have been shown to improve depression outcomes while patients remain under the care of primary care providers. There are a number of cases in which this model and other models for depression care management have been disseminated through training and coaching in motivational interviewing and recognizing signs of depression.³²⁻³⁴

It remains unclear why these and other interventions have failed to be integrated broadly across primary care practices—particularly small and medium-size practices, which make up the majority of practices in the United States. It may be that US primary care practices are unaware of these approaches, lack the resources and incentives to implement them, or feel better prepared to address the needs of patients with chronic medical illnesses than the needs of those with chronic behavioral illnesses.³⁵⁻³⁹

There may be lessons from diabetes for incentivizing increased depression and other chronic illness care management. We found that diabetes care management scores were higher than scores for other illnesses, including asthma and congestive heart failure. We also found that the use of diabetes care management processes increased to a greater extent over time, compared to the use of processes for congestive heart failure, asthma, and depression. This difference may stem from payment incentives and reporting requirements specific to diabetes care. A larger number of HEDIS measures are for diabetes care than for depression care, and it is likely that incentives are attached to performance on diabetes metrics.²²

Even with incentives to increase depression care management, the resources for chronic disease management in general may be limited in small and medium-size practices. Our study found substantial baseline use of and growth

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EXHIBIT 4

Estimated correlations between practice characteristics and use of depression care management processes in primary care practices, 2006–07 and 2012–13

Practice characteristic	Large practices (n = 83)		Small and medium-size practices (n = 719)	
	Estimated coefficient	p value	Estimated coefficient	p value
Number of physicians	0.0007	0.52	−0.005	0.002
Specialty mix ^a				
Primary care only	Ref		Ref	
Multispecialty	−0.25	0.39	−0.33	<0.001
Owned by:				
Physicians	Ref		Ref	
Hospital	−0.03	0.93	−0.67	<0.001
Other	−0.18	0.41	−0.23	0.09
Score on index for:				
Pay for performance	0.30	0.01	0.13	<0.001
Public reporting	— ^b	— ^b	0.006	0.81
Health information technology	−0.06	0.31	0.07	<0.001
Survey period				
2006–07	Ref		Ref	
2012–13	−0.05	0.86	−0.05	0.18

SOURCE Authors' analysis of data from the second and third rounds of the National Study of Physician Organizations (2006–07 and 2012–13, respectively) and from the National Study of Small and Medium-Sized Physician Practices (2007–10). **NOTES** The coefficients are from multivariable regression. All analyses are weighted. Large practices are those with at least twenty physicians; small and medium-size practices are those with nineteen or fewer physicians. The indexes are described in the text. ^a“Primary care only” practices are those with 100 percent primary care physicians (general internists, family practitioners, or general practitioners). ^b“Multispecialty care” practices are those with 33–99 primary care physicians. ^bNot available for large practices in 2006–07.

in diabetes care management among large practices, in contrast to low baseline use for diabetes and other chronic conditions among small and medium-size practices and no significant growth over time.

Conclusion

We found low use of depression care management processes among primary care practices across the United States. Use of such processes

was lower for depression than for other chronic illnesses, particularly among large practices. This may signify that primary care practices are not well equipped to manage depression as a chronic illness despite the increasing proportion of depression care they deliver. Greater attention needs to be given to developing policies and incentives to increase the use of care management processes for depression in primary care. ■

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