ORIGINAL PAPER

Quality of Mental Health Care at a Student-Run Clinic: Care for the Uninsured Exceeds that of Publicly and Privately Insured Populations

Kate M. Liberman · Yasmin S. Meah ·
Andrew Chow · Jeffrey Tornheim ·
Omayra Rolon · David C. Thomas

Abstract Diagnosing and treating depression in a primary care practice is an important, yet difficult task, especially for safety-net practices serving the uninsured. In the United States healthcare system, there is a mismatch between the need for mental health care and access to services. This disparity is most striking among the uninsured. Mental health disorders are more prevalent among the uninsured, and even when diagnosed with mental illness, they are less likely to obtain necessary treatment than insured patients. Given the increasing burden of depression on society, growing numbers of uninsured and negative repercussions of untreated mental illness, improvements in screening and management protocols are becoming more important in primary care practices serving this population. The quality of depression treatment at commercial and public insurance plans in New York City (NYC) and New York State (NYS) were compared to that of the East Harlem Health Outreach Partnership (EHHOP), the student-run clinic of the Mount Sinai School of Medicine. Based on the comparison, the study made recommendations for an integrated, on-site mental health service program at the community health clinic. A cohort of 49 depressed patients were evaluated and treated at the EHHOP clinic. The quality of the mental health care was evaluated according to variables from the Healthcare Effectiveness Data and Information Set (HEDIS). Indicators of quality included demographics, method of diagnosis, type of pharmacological treatment, referral to specialty care, patient adherence to follow-up care and adherence to pharmacologic treatment. When compared to insured patients in NYS, more EHHOP patients had the appropriate number of physician contacts after being diagnosed with depression than patients with commercial health plans ($P = 0.008$) and Medicaid ($P = 0.09$). Similarly, a greater number of EHHOP patients had better acute phase ($P = 0.001$; $P = 0.096$) and continuous phase ($P = 0.049$; $P = 0.88$) pharmacologic treatment than patients with commercial health plans and Medicaid, respectively. EHHOP meets and, in some areas, exceeds the quality of depression treatment when compared to insured populations. Even though EHHOP already surpasses these indicators, the clinic can improve its diagnostic capabilities, prescription medication adherence, and referral care follow-through by creating an on-site mental health clinic.

Keywords Student run free clinic · East Harlem Health Outreach Partnership · EHHOP · Medical students · Uninsured · Immigrant · Depression · Mental health care · Quality of care

K. M. Liberman (✉) · Y. S. Meah · A. Chow · O. Rolon ·
D. C. Thomas
Mount Sinai School of Medicine, Center for Advanced
Medicine, One Gustave Levy Place, Box #1216,
New York, NY 10029, USA
e-mail: Kate.Liberman@mssm.edu

J. Tornheim
Yale-New Haven Hospital Internal Medicine/Pediatrics
Department, 20 York Street, New Haven, CT 06510, USA

Background

Though many patients initially seek treatment for depression from their primary care provider (PCP) [1, 2], there are multiple obstacles to diagnosing and treating depression in a primary care setting [3]. Without expert training, depression is often difficult to diagnose because it lacks easily quantifiable measures [5]. PCPs face low reimbursement rates for providing mental health care [4], which

may directly limit the time spent with patients. Further, the inadequacy of supportive infrastructure within primary care clinics makes it difficult for even highly trained physicians to provide long-term follow-up and adequate education for patients with depression [6].

Depressed patients who have low income, no health insurance and chronic medical conditions constitute especially vulnerable populations to treat in the primary care setting [7–9]. Even if successful in establishing care, limited financial resources often prevent these patients from filling prescription medications and returning for follow-up appointments or referrals [7, 8, 10]. Non-adherence to medications has been shown to lead to more frequent episodes and relapses of depression [11]. The uninsured face more than financial obstacles in obtaining mental health care. Systemic barriers make uninsured patients with depression approximately half as successful at making appointments for urgent psychiatric referral care when compared to those insured [12, 13]. Furthermore, co-morbid chronic ailments in combination with depression may make uninsured patients less functionally able to adhere to physician recommendations [14–16], thereby making them less likely to obtain standard-of-care treatment.

As a subset of these patients, Hispanic and immigrant patients face additional independent barriers to receiving adequate mental health care. Underutilization of mental health care resources by Hispanic patients is well-described in the literature [17, 18]. Geographical isolation from adequate mental health services, the cultural stigma of mental health care and the lack of culturally competent providers all contribute to the profound vulnerability of Hispanic patients with mental illness [18, 19]. Additionally, adult immigrants are twice as likely to be uninsured than US-born patients secondary to language barriers, low socioeconomic status and lack of familiarity with the health care system [20].

As a student-run, attending-directed, free clinic, EHHOP provides primary health care and mental health care for East Harlem's highly disadvantaged uninsured residents, who are predominantly indigent, immigrant, Hispanic, and uninsured. Eight percent of East Harlem residents experience psychological distress, including depression, which is twice the rate seen in Manhattan overall [21]. More East Harlem residents live below the poverty line and are uninsured than in all five boroughs of NYC combined [21]. EHHOP patients are predominantly Hispanic immigrants from Central and South America—83% of the clinic's patients are Hispanic, 35% emigrated from Mexico and smaller percentages from Equador, Puerto Rico, Dominican Republic, El Salvador, Brazil and Argentina [29]. This population experiences many psychosocial stressors and is at high risk for inadequate treatment for depression.

EHHOP is one of many growing additions to the fabric of safety-net providers nationally serving the uninsured in urban and rural communities [30]. EHHOP is open Saturdays by appointment and is staffed by medical students, physician volunteers and paid social workers. Spanish-speaking patients are seen by Spanish-speaking clinicians or with the use of interpreter telephones. In addition to providing primary care, the clinic ensures access to prescription medications via pharmaceutical company charity programs, private donations and through a discount program with the Mount Sinai Hospital pharmacy. Basic laboratory tests are processed through the hospital's laboratory services. The clinic makes referrals to specialists, such as psychiatrists, within the Mount Sinai Hospital. While it pays for all initial specialty care visits, future visits are paid for out-of-pocket based on a sliding scale assessment made by the Mount Sinai Resource Entitlement and Advocacy Program [31].

This study evaluated the quality of mental health care that EHHOP provides for its depressed patients compared to depressed patients insured by NYS Medicaid and commercial health plans. Student-run free clinics, like other free clinics, face severe resource limitations that make meeting standards-of-care exponentially more challenging. As the number of these clinics grow, they simultaneously face scrutiny as quality health providers for vulnerable medically isolated populations [30]. No existing literature describes the quality of mental healthcare for uninsured populations in student-run free clinics. This study, therefore, represents a unique contribution to the fields of mental health, public health and medical education.

Methods

Screening

The EHHOP patient electronic data base was searched for the terms 'depression,' 'dysthymia,' 'anxiety,' 'adjustment,' 'domestic violence,' 'major depressive disorder,' 'psychiatrist' and 'psychologist.' Patients whose database entries included such terms had their paper charts reviewed in order to indentify EHHOP patients with depression. Patients were included in the study if their charts indicated an International Statistical Classification of Diseases and Related Health Problems (ICD-9) code for depression, a prescription for antidepressants, or a referral to a mental health specialist for treatment of depression. Because of clinic inclusion criteria, all patients were 22 years and older and resided in East Harlem. The dates of their initial diagnosis and treatment were determined to range from 5/4/2004 to 6/30/2008.

The patients with depression were subsequently divided into acute versus chronic cases of depression based on guidelines set by the Healthcare Effectiveness Data and Information Set (HEDIS) parameters. HEDIS parameters are commonly used to evaluate the quality of healthcare

provided by Medicaid and commercial health plans. Patients with a 120-day (4-month) negative diagnosis history on or before the date of presentation to clinic and a 90-day (3-month) negative medication history on or before the date of presentation to clinic were considered to have an acute diagnosis of depression.

Data Collection

Clinical data regarding patient treatment was abstracted into an encrypted electronic database developed for this study in Microsoft Access. In addition to the HEDIS variables, demographic data including race, gender, primary language, and age at the patient's first visit were collected. The HEDIS parameters include the number of patient visits after being diagnosed with depression and the number of days a patient is adherent to the antidepressant medication regimen. According to HEDIS, patients who have an optimal number of practitioner contacts make three follow-up visits within the first 12 weeks following diagnosis, at least one of which is with the prescribing clinician. In this study, 'optimal practitioner contact' was measured by recording the date of diagnosis, also called the index visit, and the dates of the three subsequent visits as documented in the chart. According to HEDIS, patients who have 'effective acute phase treatment' with pharmacotherapy adhere to 84 days (3 months) of continuous prescription therapy. Patients who adhere to 180 days (6 months) of continuous prescription therapy are considered to have 'effective continuation phase treatment' with pharmacotherapy. Patients were assumed to have consumed all of the medications prescribed because over 90% of prescribed medications at EHHOP are successfully filled at the hospital pharmacy.

Data Analysis

HEDIS values for NYS Medicaid and commercially insured populations were obtained from the NYS Managed Care Plan Performance 2007 [22]. Data were entered into a Microsoft Access database, then analyzed in Statistical Package for the Social Sciences (SPSS) [23] with additional statistical analysis run on PEPI [24].

Protocol: This study was approved by the Mount Sinai School of Medicine Institutional Review Board (HSD08-00303).

Results

Of the 465 patients in the electronic data base, 55 patients were found through the search and 49 patients met at least one of the three inclusion criteria to qualify for the study.

29 patients of the original 49 were found to have had an acute diagnosis. The remaining 20 patients were considered to have chronic diagnoses of depression (Fig. 1).

The demographics collected by the Quality Assurance Reporting Requirements (QARR) from 2006 for patients covered by Medicaid in New York City and New York State closely mirror the demographics of the EHHOP population. The age distribution from this dataset, however, includes persons aged 18 to 22, while EHHOP only serves patients 22 years and older (Table 1).

49 patients were identified as having depression yielding 10.5% of patients out of 465 EHHOP patients carrying the diagnosis of depression. Of these depressed patient, almost three quarters were prescribed medication. Over half of these patients were prescribed selective serotonin reuptake inhibitors (SSRIs) with a smaller number receiving antipsychotics and atypical antidepressants (Table 2). There is no similar quantitative data collected from insurance companies in New York State. However, there is qualitative information about the names and classes of antidepressants prescribed by managed care organizations in New York State and compiled by the National Committee for Quality Assurances and used in the HEDIS criteria (data not shown). These drugs include not only SSRI's, but also include tricyclic antidepressants, selective serotonin norepinephrine reuptake inhibitors (SSNRI's), monoamine oxidase inhibitors (MAOI's), phenylpiperazine antidepressants, antipsychotic-antidepressant combination, and atypical antidepressants (Table 3).

All patients seen at EHHOP with depression, whether they had an acute or chronic diagnosis, were referred by their primary care team for specialist care. The recommended referrals were different for every patient depending on the clinical need. The specialists that EHHOP clinicians recommended were social workers, psychologists, psychiatrists, or a combination of these. All patients were referred for one form of specialist care. A formal social work referral for an on-site social worker was documented in almost half of the patients' charts. But, more than were officially referred ultimately saw a social worker. In contrast, no patients who were recommended to see an off-site psychologist followed-up. Patients with other referrals had varying degrees of adherence (Table 4).

The treatment of depression at EHHOP was compared to that of NYS commercial health plans and NYS Medicaid Insurance data that was compiled by the New York Department of Health (Table 5). The commercial health plan data is an aggregate number drawn from 18 insurance companies.[1] The NYS Medicaid data

---

[1] Aetna, BSNENY, Blue Choice, CDPHP, CIGNA, Community Blue, Empire, GHI HMO Select, HIP, Health Net, Independent Health, MDNY, MVP, Oxford, Preferred Care, UnitedHealthCare of New York, Univera HealthCare, Upstate HMO.

Table 1 Demographics of EHHOP and medicaid patients with depression

Demographics	EHHOP (N = 49) No. (%)	New York City (N = 4161) No. (%)	New York State (N = 7272) No. (%)
Gender of patients			
Male	11 (22)	963 (23)	1479 (20)
Female	38 (78)	3198 (77)	5774 (80)
Patients' age in years at index visit			
EHHOP: 22–44			
NYC and NYS: 18–44	30 (61)	2370 (57)	4781 (66)
45–64	14 (29)	1761 (42)	2438 (34)
>64	2 (4)	30 (1)	34 (0)
Unknown	3 (6)	–	–
Ethnicity of patient			
Hispanic	40 (82)	1952 (47)	2348 (32)
African–American	4 (8)	701 (17)	1159 (16)
Caucasian	2 (4)	709 (17)	2825 (39)
Other	2 (4)	303 (7)	377 (5)
Unknown	1 (2)	–	–
Primary language			
Spanish	38 (78)	–	–
English	9 (18)	–	–
Other	2 (4)	–	–

is an aggregate number compiled from 23 insurance companies.[2]

A χ^2 test was done to compare EHHOP's rate of adherence to HEDIS criteria with the commercial and Medicaid rates. The χ^2 value and the P value were corrected for continuity using Yates correction for continuity. The statistical analysis was set with one degree of freedom, an α-value of 0.05, and a critical value of 3.84.

The number of EHHOP patients evaluated for pharmacological adherence was 18 out of the 29 patients with acute diagnoses. The 11 EHHOP patients who did not adhere to their prescribed pharmacological regimen did so because they were lost to follow-up or left EHHOP clinic after gaining health insurance (data not shown) (Fig. 2).

Discussion

Demographics

The demographics of depressed patients at EHHOP and in NYC and NYS Medicaid are similar in terms of socioeconomic status, race, gender and age. The NYC Medicaid population lives below the federal poverty line (FPL) in order to qualify for coverage. While EHHOP does not have data on patients' annual income, they come from an impoverished neighborhood, lack employment with benefits, and cannot afford insurance. Therefore, it can be assumed that they also live below the FPL. EHHOP and Medicaid patient populations are predominately Hispanic; hence, race can be eliminated as a confounding factor when comparing the two groups. Despite the similarity in race, there is no published data about the primary language of Medicaid patients. Thus, this study does not control for language barriers. Gender distribution is comparable between EHHOP and Medicaid patients. Though adult women are twice as likely to be depressed as men [25], the demographics in this study show a fourfold increased prevalence. This may represent an inherent vulnerability or a bias, in that more women than men among the EHHOP population seek help for depression. Overall, EHHOP's patient population can be considered a microcosm of New York's larger, statistically powerful, Medicaid population. However, EHHOP's free mental health care model makes its population representative of care with reduced financial barriers to access.

Prevalence of Depression

While the national rate of depression annually for adults has been approximated at 7.65% [26] and the rate in East Harlem is 8% [21], the rate of depression at EHHOP is 10.5%. EHHOP's higher rate can be attributed to the

Fig. 1 Patient inclusion
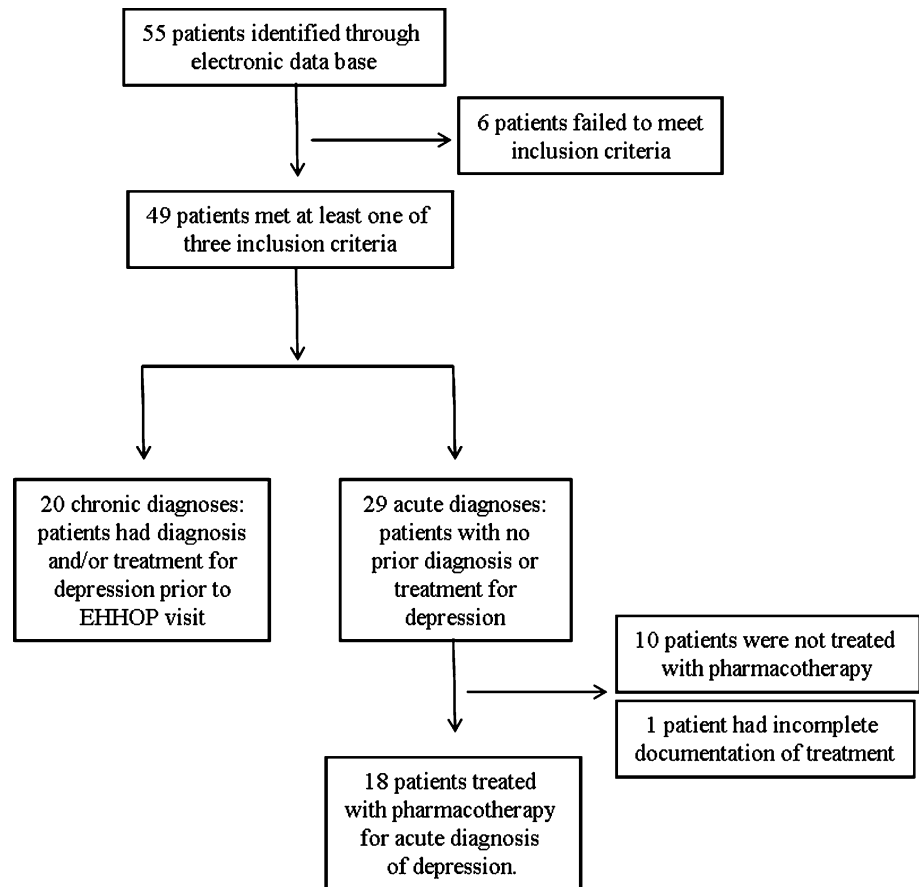
particularly vulnerable population the clinic serves. With poverty, minority status, immigration hardships, language barriers, family stressors, and occupational challenges, the East Harlem community is at increased risk of psychological distress, including depression [21]. However, the percentage of depressed patients seen at EHHOP is surprisingly only about 3% above the national and East Harlem rates. EHHOP's patient population may be skewed. The clinic treats many uninsured immigrants. As only the healthiest people survive migration and thus tend to be the healthiest subset within a population, EHHOP may see fewer depressed patients than exist in the community at large. Alternatively, the clinic may not identify all patients in its service with depression.

The disparity in depression rates at EHHOP may be an artifact of the subjectivity inherent in diagnosing patients through the medical interview. Table 2 shows that EHHOP clinicians use clinical judgment to diagnose depression far more frequently than using objective measures such as a questionnaire. Without the expertise of a trained physician, this may have allowed patients to go undiagnosed. Therefore, the clinic may benefit from implementing a more consistently objective screening tool for recognizing depression, such as a survey like the patient healthcare questionnaire—PHQ2 or PHQ9 [27, 28]. Once diagnosed,

Table 2 Disease burden

	EHHOP (N = 49) No. (%)
Method of diagnosis	
Clinical judgment	48 (98)
Patient healthcare questionnaire	1 (2)
Diagnosis	
Dysthymic disorder	47 (96)
Adjustment reaction	1 (2)
Other specified transient mental disorders due to conditions classified elsewhere	1 (2)
Medication	
Fluoxetine	12 (25)
Citalopram	6 (13)
Paroxetine	10 (20)
Buproprion	2 (4)
Sertraline	4 (8)
Venlafaxine	1 (2)
Risperidone	5 (10)
No pharmacologic treatment	9 (18)

the vast majority of patients were diagnosed with dysthymic disorder. Based on internal discussions, it appears that this occurred not because most patients DSMIV criteria for

Table 3 Disease risk and severity predictors

	Family history no. (%)	Prior hosp. no. (%)	Suicidal ideation no. (%)	Homicidal ideation no. (%)
Depressed cohort N = 49	5 (10)	1 (2)	13 (27)	2 (4)

Table 4 Disease treatment

Type of referral care	EHHOP patients prescribed referral therapy (N = 49) No. (%)	EHHOP patients who obtained referral therapy (N = 49) No. (%)
Social work	20 (41)	37 (74)
Psychologist	22 (45)	0 (0)
Psychiatrist	1 (2)	1 (2)
Social work and psychologist	1 (2)	7 (14)
Social work and psychiatrist	5 (10)	0 (0)
Prescribing doctor	0 (0)	4 (8)

dysthymia, but because it was the generic choice of diagnostic codes provided to clinical teams. EHHOP clinic may benefit from a more extensive psychiatric ICD9 coding sheet, or in the future, electronic medical records with a comprehensive list of diagnoses.

Quality Care Comparison

EHHOP clinic surpasses the NYC and NYS antidepressant medication management and non-pharmacological therapy across all three quality care HEDIS standards. When compared to commercial health plans, EHHOP patients had significantly more physician contacts than those patients who were privately insured. When compared to Medicaid health plans, EHHOP patients had significantly better acute and continuous phase pharmacological treatment. The reasons for these differences likely lie in the fragmented United States health care system that is riddled with obstacles for patients to receive care. The free clinic does not place restrictions on necessary care that insurance companies often deem costly, like visits for mental health

disorders. At EHHOP, there are no administrative or bureaucratic requirements that patients must undertake to attain pre-authorization for services or post-care reimbursement. Further, as the clinic does not push user charges directly on the patient for visits or medications, cost does not prohibit them from obtaining or refilling their prescriptions. EHHOP's health care delivery model, which eliminates barriers to accessing mental health care, is conducive to patient adherence along pharmacological and non-pharmacological lines of treatment.

EHHOP provides effective mental health care to patients who would otherwise not receive it. As a result of the most recent healthcare reform, patients eligible for benefits cannot be denied coverage by insurance companies due to pre-existing chronic disease, such as depression. Patients with severe depression, however, may be rendered unable to work. In an employer-based insurance system, unemployed patients therefore may be unable to obtain health insurance. Due to impairment from disease, it may be difficult to access social services in order to join a public insurance pool. Without a steady income, the direct and indirect costs of buying commercial or public insurances may be prohibitive. Furthermore, even if patients become successfully insured, companies do not cover the cost of mental health care as fully or readily as they do for medical care. This often forces patients to pay out of pocket in order to receive care and then file for partial reimbursement, an arduous and lengthy process. Eventually, the sickest and disabled patients, who have suffered with mental health disorders for years, may find it impossible to obtain mental health care.

Referral Services

While referrals to mental health specialists at EHHOP reflect the needs of the patients, the actual follow-up care

Table 5 Quality of treatment by HEDIS criteria

	EHHOP clinic no. (%)	New York State commercial plans no. (%) P value	New York State medicaid no. (%) P value
Optimal practitioner contacts	13/29 (45)	2617/11595 (26) P = 0.008	2112/7358 (29) P = 0.09
Effective acute phase pharmacological treatment	15/18 (83)	7121/11595 (61) P = 0.096	3079/7358 (42) P = 0.001
Effective continuous phase pharmacological treatment	9/18 (50)	5269/11595 (45) P = 0.88	1963/7358 (27) P = 0.049
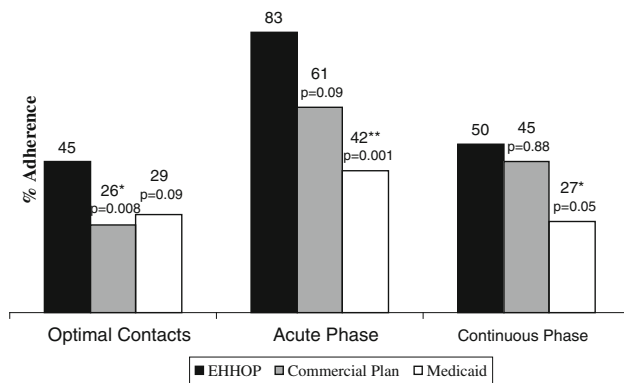
Fig. 2 Quality of treatment by HEDIS criteria

represents the accessibility and affordability of care to the patients. The pattern of referrals and follow-up at EHHOP is therefore very telling. No patients followed up with a psychologist, although nearly half were recommended to do so. In contrast, more patients saw a social worker than were officially recommended in their clinic note.

The proximity of specialists to EHHOP clinic could account for the difference in the follow-up care obtained. As there was no on-site psychologist at the clinic, patients had to travel elsewhere for services on a day after their referral was made. In contrast, a dedicated social worker is present at EHHOP when the clinic is open, making it convenient for patients to obtain social services in the same building following their medical appointments. The opportunity cost of missing a day of work to attend an extra mental health appointment is high for those living in poverty. It would mean not only losing a pay check, but also paying for the required child care and costly transportation. For financially burdened patients, attending a workday appointment may be prohibitive. Therefore, the logistics of referral care may have prevented more patients from receiving recommended specialty care.

Evidence suggests that integrated primary care based mental health services, rather than enhanced specialty referrals to mental health providers, may improve depression outcomes particularly among those with major depression [32–34]. By integrating on-site mental health providers, such as psychiatrists, with on-site primary care providers, clinics enhance patient communication, compliance with follow-up visits, adherence to medication, and coordinated visits for serious mental disorders. This infrastructure also seems to improve depression outcomes and reduce the stigma associated with seeking mental healthcare. Further, with the convenience of on-site mental health specialists, patients would be saved from navigating the healthcare system outside the clinic. The implementation of dedicated mental health clinic at EHHOP that runs at the same time as the medical clinic would facilitate the improvement of mental health care.

Limitations

This study was based on a small population. Due to incomplete paper medical records, the number of depressed patients analyzed for pharmacological treatment was small, which gave the study low statistical power. The recent transition to electronic medical records will improve the number of charts with complete records documenting clinic visits and pharmacological treatment. Moreover, the development of a dedicated psychiatric clinic will increase the number of patients recruited and treated for depression.

Measuring patient adherence is a difficult task. Existing literature uses pharmacy billing records as a surrogate for patient adherence [35, 36]. As medications are provided at no cost to patients, alternative tracking methods are necessary to measure adherence at EHHOP. Although our pick-up rate for medications at the hospital pharmacy is close to 100%, our current tracking methods were unable to correct for those patients who never picked-up prescriptions or despite picking it up, never took the prescribed medication.

Selection bias was introduced by the clinicians because EHHOP's ICD9 diagnosis quick-list did not include mood disorders other than dysthymia. While there was a space on the quick-list for clinicians to write the correct diagnosis code, this extra step was not clear. It may have impeded recording a patient's correct diagnosis. With full coding lists available, future studies will be able to differentiate diagnosis and treatment of various types of depression.

Future Analysis

Due to methodological complexity, this study did not look at the success of depression treatment. EHHOP clearly did initiate treatment and execute follow-up care by HEDIS standards more frequently than commercial and Medicaid health plans. Future analysis should assess the clinical impact of disease treatment. Further, after the advent of a dedicated psychiatric clinic at EHHOP, this study will also be conducted to assess whether the quality of mental health care further exceeds that of insured patients.

Conclusions

By HEDIS criteria, EHHOP meets and in some areas, exceeds the quality of care standards for treating depression of patients with health insurance. EHHOP patients more frequently adhered to non-pharmacological care than privately insured patients. EHHOP patients also received a significantly longer duration pharmacological treatment than Medicaid patients. Even though EHHOP already surpasses

these indicators, the clinic will improve its diagnostic capability as well as prescription and referral adherence by creating a dedicated psychiatric clinic that runs in an integrated fashion with the medical clinic. Further, by using a screening questionnaire, fewer patients escape diagnosis of a serious or under-treated mental illness.

References

1. Regier, A. D., et al. (1993). The de facto US mental and addictive disorder service system: Epidemiologic catchment area prospective 1-year prevalence rates of disorders and services. *Archives of General Psychiatry, 50*, 85–94.
2. Regier, A. D., et al. (1982). Specialist/generalist division of responsibility for patients with mental disorders. *Archives of General Psychiatry, 39*(2), 219–224.
3. Young, S. A., et al. (2001). The quality of care for depressive and anxiety disorders in the United States. *Archives of General Psychiatry, 58*(1), 55–61.
4. Kathol, G. R., et al. (2010). Barriers to physical and mental condition integrated service delivery. *Psychosomatic Medicine: Journal of Biobehavioral Medicine, 72*(6), 511–518.
5. Henke, M. R., et al. (2008). Physician attitude toward depression care interventions: implications for implementation of quality improvement initiatives. *Implementation Science, 3*(1), 40.
6. Henke, M. R., et al. (2008). Clinician- and organization-level factors in the adoption of evidence-based care for depression in primary care. *Health Care Management Review, 33*(4), 289–299.
7. Felland, L., & Reschovsky, J. (2009). More nonelderly Americans face problems affording prescription drugs. *Tracking Report/Center for Studying Health System Change, 22*, 1–4.
8. Ayanian, Z. J., et al. (2000). Unmet health needs of uninsured adults in the United States. *Journal of the American Medical Association, 284*(16), 2061–2069.
9. Hadley, J. (2007). Insurance coverage, medical care use, and short-term health changes following an unintentional injury or the onset of a chronic condition. *Journal of the American Medical Association, 297*(10), 1073–1084.
10. Wang, S. P., et al. (2005). Twelve-month use of mental health services in the United States: Results from the national comorbidity survey replication. *Archives of General Psychiatry, 62*(6), 629–640.
11. Melartin, T., et al. (2005). Continuity is the main challenge in treating major depressive disorder in psychiatric care. *Journal of Clinical Psychiatry, 66*(2), 220–227.
12. Rhodes, V. K., et al. (2009). Referral without access: For psychiatric services, wait for the beep. *Annals of Emergency Medicine, 54*(2), 272–278.
13. Cunningham, J. P. (2009). Beyond parity: primary care physicians' perspectives on access to mental health care. *Health Affairs, 28*(3), 490–501.
14. Dirmaiera, J., et al. (2010). Diabetes in primary care: prospective associations between depression, nonadherence and glycemic control. *Psychotherapy and Psychosomatics, 79*(3), 172–178.
15. Egede, E. L., & Ellis, C. (2010). Diabetes and depression: Global perspectives. *Diabetes Research and Clinical Practice, 87*(3), 302–312.
16. The World Health Organization (2004). *Table 3: Burden of disease in DALYs by cause, sex, and mortality stratum in WHO regions, estimates for 2002*, in *TheWorld Health Report 2004: Changing history*, WHO: Geneva.
17. Chun-Chung Chow, J., Jaffee, K., & Snowden, L. (2003). Racial/ethnic disparities in the use of mental health services in poverty areas. *American Journal of Public Health, 93*(5), 792–797.
18. Manoleas, P. (2008). Integrated primary care and behavioral health srvices for latinos: A blueprint and research agenda. *Social Work in Health Care, 47*(4), 438–454.
19. LaVeist, A. T. (1993). Segregation, poverty, and empowerment: health consequences for African Americans. *The Milbank Quarterly, 71*(1), 41–64.
20. Cunningham, P. & Artiga, S. (2009) *How does health coverage and access to care for immigrants vary by length of time in the U.S.?* Kaiser Commission on Medicaid and the Uninsured.
21. Olson, E. C., et al. (2006). *Take care east Harlem, in NYC Community health profiles*. New York City Department of Health and Mental Hygiene: New York.
22. Daines, F. R. (2007). *New York State managed care plan performance 2007: A Report on quality, access to care, and consumer satisfaction*. New York: New York State Department of Health.
23. SPSS for Windows. (2008). *SPSS*. Chicago: SPSS Inc.
24. Abramson, J., & Gahlinger, P. (2001). *Computer programs for epidemiologists: PEPI*. Salt Lake City: Sagebrush Press.
25. Kesslera, C. R., et al. (1993). Sex and depression in the National comorbidity survey. I: Lifetime prevalence, chronicity and recurrence. *Journal of Affective Disorders, 29*(2-3), 85–96.
26. Office of Applied Studies, SAMHSA, and R.I.i.R.T. Park. (2006). *State estimates of depression: 2004 and 2005, in The national survey on drug use and health*. Rockville, MD: Substance Abuse and Mental Health Services Administration.
27. Kroenke, K., Spitzer, L. R., & Williams, B. J. (2003). The patient health questionnaire-2: validity of a two-item depression screener. *Medical Care, 41*(11), 1284–1292.
28. Kroenke, K., Spitzer, L. R., & Williams, B. J. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), 606–613.
29. Chow, A., Ryskina, K., et al. (2007). *East Harlem Health Outreach Partnership FY 2007–2008 Annual Report*. A. Chow. New York: Mount Sinai Medical Center.
30. Meah, Y., Smith, E., & Thomas, D. (2009). Student-run health clinic: Novel arena to educate medical students on systems-based practice. *Mount Sinai Journal of Medicine, 76*, 344–356.
31. Ryskina, K., Meah, Y., & Thomas, D. (2009). Quality of diabetes care at a Student-run free clinic. *Journal of Health Care for the Poor and Underserved, 20*, 969–981.
32. Unützer, J., Katon, W., Callahan, C. M., et al. (2002). Collaborative care management of late-life depression in the primary care setting: A randomized controlled trial. *JAMA, 288*, 2836–2845.
33. Bruce, M. L., Ten Have, T. R., Reynolds, C. F., I. I. I., et al. (2004). Reducing suicidal ideation and depressive symptoms in depressed older primary care patients: A randomized controlled trial. *JAMA, 291*, 1081–1091.
34. Krahn, D. D., Bartels, S. J., Coakley, E., Oslin, D. W., Chen, H., McIntyre, J., et al. (2006). PRISM-E: comparison of integrated care and enhanced specialty referral models in depression outcomes. *Psychiatric Services, 57*(7), 946–953.
35. Busch, S. H., Leslie, D., & Rosenheck, R. (2004). Measuring quality of pharmacotherapy for depression in a national health care system. *Medical Care, 42*(6), 532–542.
36. Akincigil, A., Bowblis, J. R., Levin, C., Walkup, J. T., Jan, S., & Crystal, S. (2007). Adherence to antidepressant treatment among privately insured patients diagnosed with depression. *Medical Care, 45*(4), 363–369.