General Hospital Psychiatry 35 (2013) 66–70

Contents lists available at SciVerse ScienceDirect

General Hospital Psychiatry

journal homepage: http://www.ghpjournal.com

Continuation of care following an initial primary care visit with a mental health diagnosis: differences by receipt of VHA Primary Care–Mental Health Integration services

Kipling M. Bohnert, Ph.D. [a,b,*], Paul N. Pfeiffer, M.D. [a,b], Benjamin R. Szymanski, M.P.H. [a], John F. McCarthy, Ph.D., M.P.H. [a,b]

[a] Department of Veterans Affairs, Serious Mental Illness Treatment Resource and Evaluation Center, Ann Arbor, Michigan
[b] Department of Psychiatry, University of Michigan, Ann Arbor, Michigan

ARTICLE INFO

Article history:
Received 15 June 2012
Revised 16 August 2012
Accepted 3 September 2012

Keywords:
Primary care mental health
Veterans Health Administration
Continuation of mental health care

ABSTRACT

Objective: For patients with an initial primary care (PC) encounter in the Veterans Health Administration (VHA) that included a mental health diagnosis, we evaluate whether same-day receipt of Primary Care–Mental Health Integration (PC-MHI) services is associated with the likelihood of receiving a subsequent mental-health-related encounter in the following 90 days.
Method: Using VHA administrative data, we identified 9046 patients who received VHA care for the first time in fiscal year 2009, received a PC encounter that included a mental health diagnosis on the first day of their VHA services and initiated care at a VHA facility that provided PC-MHI services. Using multivariable generalized estimating equations logistic regression, we examined whether receipt of same-day PC-MHI was associated with receipt of a subsequent encounter with a mental health diagnosis within 90 days. Analyses adjusted for Operation Enduring Freedom/Operation Iraqi Freedom Veteran status, demographic characteristics, service-connected disability, psychiatric and non-psychiatric diagnoses, and psychotropic medication initiation on the index day of service use.
Results: Receipt of same-day PC-MHI services was positively associated with having a mental-health-related encounter in the following 90 days (adjusted odds ratio=2.05; 95% confidence interval=1.66–2.54).
Conclusions: PC-MHI services may enhance mental health continuation of care among PC patients with mental health conditions who initiate VHA services.

Published by Elsevier Inc.

1. Introduction

The Veterans Health Administration (VHA) is implementing integrated mental health care in primary care (PC) settings to improve identification and management of common mental health conditions, including depression, alcohol use problems and post-traumatic stress disorder (PTSD) [1–3]. As has been described previously, the integrated care program, i.e., Primary Care–Mental Health Integration (PC-MHI), commenced at some VHA facilities during the 2007 fiscal year (FY) with pilot funding from the Mental Health Enhancement Initiative [1,2]. In FY2008, VHA policy expanded PC-MHI implementation to include the entire health system [4]. VHA medical centers and community-based outreach clinics serving at least 5000 patients are mandated to have PC-MHI programs that include two types of integrated care services: colocated collaborative care and care management[1,4–6]. Colocated collaborative care consists of at least one mental health professional, often a psychologist, who is physically colocated within the PC clinic and provides mental health assessment, diagnosis, brief treatment (e.g., psychotherapy) and/or appropriate referral when needed [3,7]. Ideally, patients are seen by the integrated mental health provider the same day as their PC appointment, and the two providers work together to assess and provide appropriate mental health services for the patients. For the care management component of PC-MHI, a care manager, who is often a registered nurse, supports patients by coordinating services and appointments, providing patient education and self-management support, providing decision support to prescribers regarding guideline-based pharmacotherapy and monitoring psychotropic medication adherence, side effects and treatment response [3,7].

Although facilities are mandated to include both colocated collaborative care and care management components, the exact nature of PC-MHI services varies across facilities [7,8]. Despite this variation, core goals of all PC-MHI programs include identifying PC patients with mental health problems; providing mental health services in a potentially less-stigmatized, patient-preferred setting;

* Corresponding author. NCRC, Ann Arbor, MI 48109. Tel.: +1 734 232 0211; fax: +1 734 222 7514.
E-mail address: kiplingb@med.umich.edu (K.M. Bohnert).

0163-8343/$ – see front matter. Published by Elsevier Inc.
http://dx.doi.org/10.1016/j.genhosppsych.2012.09.002

increasing access and delivery of treatment for mental health conditions; and increasing continuity of mental health care [2,3,7,8]. Moreover, PC-MHI services are meant to work in tandem with, rather than replace, the VHA's specialty mental health (SMH) clinics, which provide more intensive mental health treatments [2,9]. In particular, PC-MHI services are intended to increase access to SMH for patients with more severe and/or complex mental illnesses.

Several recent studies have examined outcomes related to these PC-MHI program objectives. For example, a facility-level assessment indicated that, between 2007 and 2008, the prevalence of mental health diagnoses among PC patients increased significantly in sites with documented PC-MHI activity [10]. Pfeiffer and colleagues compared facilities with PC-MHI services versus those without PC-MHI and did not observe differences in referrals to SMH clinics among PC patients [11]. Recent analyses have documented differences in patient subpopulations receiving PC-MHI services versus SMH, with PC-MHI patients tending to be older, be female and have fewer comorbid mental health disorders than SMH patients [12,13]. In addition, among PC patients who have a subsequent SMH encounter, prior receipt of PC-MHI services has been associated with greater likelihood of continuation in SMH services [7].

Although prior studies have shed light on PC-MHI implementation within the VHA and added to the integrated care evidence base, important questions remain. In particular, little is known about receipt of same-day PC-MHI services and the influence it may have on mental health continuation of care, a core objective of PC-MHI. Therefore, the present investigation uses VHA national administrative data to estimate the association between receipt of same-day PC-MHI services and the likelihood of having a mental health visit within the following 90 days among a sample of new VHA patients who present and are diagnosed with a mental health problem in PC on their first day of VHA service use. Same-day PC-MHI encounters typically result from “warm hand-offs” by PC providers to PC-MHI providers working in PC settings (e.g., a PC provider identifies a mental health problem and walks the patient down the hall to a PC-MHI provider for additional mental health services; see Ref. [14]). Such contact with PC-MHI providers soon after diagnosis may reduce stigma associated with receiving mental health treatment, may initiate outreach and care management services, and may facilitate contacts for the range of patients' health care needs [3]. Consequently, we hypothesized that receipt of same-day PC-MHI services would be associated with an increased likelihood of timely continuation of mental health care, as assessed via a mental-health-related visit in PC, PC-MHI or SMH in the following 90 days, adjusting for patient characteristics, psychiatric and physical comorbidity, and psychotropic medication prescription.

2. Methods

2.1. Data and sample

Study data were drawn from the VHA National Patient Care Database (NPCD) for a 30% random sample of PC patients in FY2009. The NPCD includes information on VHA healthcare services and diagnoses, as well as information regarding patient demographic characteristics. These records were matched to the Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Roster and the VHA Decision Support Services (DSS) pharmacy data sets. The OEF/OIF Roster identifies and contains additional information on Veterans who served in the recent Afghanistan and Iraq conflicts (i.e., OEF and OIF, respectively). The DSS data set contains information on medications dispensed by VHA pharmacies.

For the present study, we identified a cohort of patients (n= 9046) who (a) were new VHA users in FY2009 [i.e., a new user was identified as one with no VHA use in the previous five years (FY2004–FY2008)], (b) initiated VHA care in PC at a VHA location that provided PC-MHI services and (c) received a mental health diagnosis in PC on their first day of VHA service use. This study was approved by the institutional review board at VHA Ann Arbor Health System.

2.2. Measures

The outcome of interest was timely receipt of a subsequent encounter for a mental health condition, which was defined as a PC, PC-MHI or SMH visit with a recorded mental health diagnosis within 90 days of the index encounter. PC return visits were included as the outcome only when a mental health diagnosis was the primary diagnosis recorded for the encounter.

The main predictor of interest was the receipt of PC-MHI services on the day of the initial PC encounter.

Other covariates that might confound the hypothesized relationship between same-day PC-MHI and continuation of mental health care were examined and included in analyses. Specifically, mental health diagnoses were those recorded in the NPCD on the index day in PC. These were identified using *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes, classified as any depressive disorder (296.2, 296.3, 293.83, 296.30, 296.33, 298.0, 300.4, 301.12, 309.0, 309.1, 311), any anxiety disorder (300.0, 300.10, 300.2,), PTSD (309.81), alcohol use disorder (303.00, 303.01, 303.02, 303.03, 305.0), substance use disorder (304. 305.2, 305.3, 305.4, 305.5, 305.6, 305.7, 305.8, 305.9), bipolar disorder (296.0, 296.1, 296.4, 296.5, 296.6, 296.7, 296.8), schizophrenia (295.1, 295.2, 295.3, 295.4, 295.6, 295.7, 295.9) and other mental health diagnosis (all other ICD-9-CM codes 290–319, except 305.1). OEF/OIF Veteran status was assessed based on inclusion in the OEF/OIF Roster. Demographic characteristics were obtained from NPCD records for the index day and included age, sex, race, ethnicity and marital status. Service connected disability status was the highest recorded level from first day of VHA care, categorized as $<70\%$ or $\geq 70\%$. Charlson comorbidity index scores were based on diagnoses recorded in the electronic medical record on the first day of VHA care and calculated for all patients [15]. Information on psychotropic medications prescribed on the first day of VHA service utilization comes from DSS pharmacy data and included stimulants, opioids, synthetic opioids, alcohol dependence medications, methadone, mood stabilizers, anxiolytics, antidepressants and antipsychotics.

2.3. Statistical analysis

Basic descriptive statistics were used to calculate the 90-day return visit rate for each independent variable of interest. Next, multivariable generalized estimating equations (GEE) logistic regression modeling was used to estimate the association between receipt of PC-MHI services on the first day of VHA utilization and the odds of returning to PC, PC-MHI and/or SMH within 90 days of the initial visit [16]. The GEE logistic regression model took into account possible clustering at the facility level. We specified an independent working correlation structure and used robust variance estimators that produce valid estimates of the standard errors even when the correlation structure is incorrectly specified. In the GEE logistic regression model, we also adjusted for OEF/OIF Veteran status, demographic characteristics, service connected disability, psychiatric diagnoses, Charlson comorbidity index and any psychotropic medication. Due to potential differences in patient access to same-day PC-MHI services across sites, in a sensitivity analysis, we ran GEE models stratified by a facility-level measure of high versus low access to PC-MHI services. This measure is an established metric for tracking PC-MHI program operations (i.e., in VHA nomenclature, “penetration rate”) [8]. Specifically, for each of the sites, the total number of PC-