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Evaluation of a Multidisciplinary Care Coordination Program for Frequent Users of the Emergency Department

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ABSTRACT

Purpose of Study: The purpose of this study was to evaluate the impact of a quality improvement multidisciplinary care coordination program designed to reduce frequent emergency department (ED) utilization and hospital admissions.

Primary Practice Setting: The single hospital ED is part of a large, integrated, managed care delivery system in Northern California serving the city of Oakland, California.

Methodology and Sample: A retrospective cohort study design was used to analyze a multidisciplinary care coordination program on 58 patients during January 2015 and August 2018. Patients were identified from a high-utilization report when they had 10 or more ED visits in a 6-month period, were 18 years of age or older, and members of the integrated delivery system's health plan. Data were collected at initiation and 6 months postintervention. The pre-/postanalysis consisted of descriptive statistics, Wilcoxon signed ranks test, and binary logistic regression.

Results: There was a statistically significant pre-/postdifference of 7.7 ED visits (95% confidence interval [CI] = 4.44–10.97, $p < .001$). The program did not result in statistically significant reduced hospital admissions (95% CI = −1.24 to 1.45, $p = .875$). Prior frequent use, number of pre-ED visits, age, sex, complex medical history, and mental health disorder had a significant effect on frequent ED use ($\chi^2[6] = 17.62$, $p = .007$, McFadden $R^2 = .32$]. Sex (odds ratio [OR] = 5.13, $p = .070$), prior frequent use (OR = 2.87, $p = .252$), and complex medical history (OR = 2.52, $p = .412$) had the greatest odds of ongoing frequent ED use.

Implications for Case Management Practice: We demonstrated reductions in ED use among frequent users with a low-cost care management intervention. Our multidisciplinary care coordination program confirms the positive impact case management has on utilization and health outcomes. We established that a care coordination program can optimize the overall quality of care and control hospital costs incurred by this vulnerable population. The effectiveness of this program contributes to the advancement of case management efforts in undertaking the challenging health care issue of reducing repeated visits by frequent users, a practice that strains emergency medical services.

Key words: *case management, frequent emergency department users, multidisciplinary care coordination*

Hospital emergency departments (EDs) continue to receive attention as a focus area for potential cost cutting to combat the United States' overly expensive health care. Emergency departments are known to be one of the most costly places to get medical care (Gonzalez-Morganti et al., 2013; Government Accountability Office, 2011; Simonet, 2008; Soril, Leggett, Lorenzetti, Noseworthy, & Clement, 2015). In addition to delivering emergency services, it is believed to be a place where a disproportionate amount of uninsured and underinsured Americans receive primary health care services (Institute of Medicine, 2007; Pitts, Carrier, Rich, & Kellermann, 2010; Tang, Stein, Hsia, Maselli, & Gonzales, 2010).

It is unclear what impact the Patient Protection and Affordable Care Act and the estimated 7.9 million more Americans with health care coverage have had on ED use (Centers for Medicare & Medicaid Services [CMS.gov], 2017). There are still more

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than 20 million uninsured Americans and a subset of 32 million Americans with first-time health insurance who face access barriers causing them to turn to EDs for care (Bodenheimer & Grumbach, 2016; Coughlin, Holahan, Caswell, & McGrath, 2014; Estes, Chapman, Dodd, Hollister, & Harrington, 2013). Emergency departments cannot refuse patients as manifested by the 1986 Emergency Medical Treatment and Labor Act (EMTALA). Medical screening and stabilization are required before discharging or transferring a patient regardless of ability to pay (CMS.gov, 2012; Institute of Medicine, 2007).

External factors such as EMTALA, frequent ED users, and an aging and sick population will continue to challenge the health care system (Institute of Medicine, 2007; McDonnell, Gee, Mecham, Dahl-Olsen, & Guenther, 2013). These factors make it difficult to reduce avoidable ED visits. Case managers are particularly challenged to find ways to decrease hospital readmissions and hospital days, lessen hospital care costs, and improve patient and staff satisfaction (Boyle, Beniuk, Higginson, & Atkinson, 2012; Simonet, 2008; Smulowitz, Honigman, & Landon, 2012; Tricco et al., 2014).

The high utilizers of EDs are often blamed for over- or misusing ED services and disproportionately raising health care costs (Althaus et al., 2011; Doupe et al., 2012; Kumar & Klein, 2013; LaCalle & Rabin, 2010; National Center for Health Statistics, 2013; Soril et al., 2015; Tricco et al., 2014). Those at risk for frequent ED use are the underinsured, chronically ill, mentally disordered, substance abusers, marginally housed, and poor among the population (Bodenmann et al., 2015; Doupe et al., 2012; LaCalle & Rabin, 2010; Lyons et al., 2017; National Center for Health Statistics, 2013; Nelson et al., 2011; Peppe, Mays, Chang, Becker, & DiJulio, 2007). They present with a wide range of health conditions and require a variety of treatments.

Frequent ED visits are associated with disjointed and discontinuous care that may compromise a patient's quality of care, health care experience, and health outcomes (Althaus et al., 2011; Institute of Medicine, 2007; National Center for Health Statistics, 2013). Continuity of health care is compromised even within the ED from encounter to encounter because of the episodic contact. Patients often see different clinicians at each encounter, attend a different ED, or present with different problems at each visit (Lyons et al., 2017; Nelson et al., 2011; Shapiro et al., 2013). Lack of coordination, communication, and continuity between EDs and primary care providers often leads to redundant testing, complicates follow-up care, and increases the risk of medical errors (Katz, Carrier, Umscheid, & Pines, 2012; National Center for Health Statistics, 2013; Pitts et al., 2010). Researchers agree that frequent ED users tend to be in poor health and to disproportionately utilize all types of health services (Doupe et al., 2012; LaCalle & Rabin, 2010; Nelson et al., 2011; Peppe et al., 2007; Soril et al., 2015; Vinton, Capp, Rooks, Abbott, & Ginde, 2014). These same studies varied in how frequent use was defined; however, management of frequent ED use is thought to be a gateway to improved quality of care and cost control.

A variety of cost containment strategies have been tested to reduce avoidable ED usage and costs, with mixed results. Among several systematic reviews, case management was the most studied care coordination intervention aimed at reducing excess ED utilization (Althaus et al., 2011; Kumar & Klein, 2013; Soril et al., 2015; Tricco et al., 2014). Many hospitals already recognize the importance of providing ED case managers. The case managers can assess the needs of high-risk ED patients at discharge, initiate development of appropriate and safe discharge plans, determine the need for alternate settings of care, and steer patients into the most appropriate health care setting (Sharieff et al., 2014). In spite of this, frequent users continue to account for a disproportionate share of ED use (LaCalle & Rabin, 2010).

Those who inappropriately use emergency services generally face access barriers causing them to turn to EDs with inappropriate care needs (Bodenheimer & Grumbach, 2016; Gonzalez-Morganti et al., 2013; LaCalle & Rabin, 2010). Others without access barriers to primary care still present to the ED for exacerbations of chronic diseases or acute presentations of complex medical illnesses. A systematic approach to identifying and addressing frequent ED use can advance case management efforts, thereby improving the health of this vulnerable population and reducing their consumption of emergency medical services (Nelson et al., 2011; Shapiro et al., 2013).

Lack of coordination, communication, and continuity between EDs and primary care providers often leads to redundant testing, complicates follow-up care, and increases the risk of medical errors.

The purpose of this quality improvement (QI) study was to evaluate the impact of a multidisciplinary care coordination program designed to reduce frequent ED utilization at a single ED. This ED is part of a large, integrated, managed care delivery system in Northern California; positive findings can support the expansion of the program to additional sites throughout the health care system.

MATERIALS AND METHODS

This QI project was conducted at a general medical and surgical hospital with 349 inpatient beds and 52 private ED treatment bays. The hospital is part of a large nonprofit, integrated health care system and one of four urban hospitals serving the city of Oakland, CA, with approximately 60,000 yearly ED visits. Frequent users (10 or more visits in 6 months) have accounted for about 3,500 (6%) of those visits. The health care system's office of research and Samuel Merritt University's institutional review board approved evaluation of the multidisciplinary care coordination program to reduce frequent use of the ED.

The multidisciplinary care coordination program was initially piloted from May 2011 to May 2015. Patients were identified from a high-utilization report when they had 10 or more ED visits 6 months before the baseline review. They were included under the program if they were 18 years of age or older. Patients were excluded if they were not members of the integrated delivery system's health plan. Before managing the patient under the program, the multidisciplinary team reviewed the frequent users' visit notes to identify the reasons for presenting to the ED; information about medical and mental health history, other health services utilization, and pertinent psychosocial factors was obtained to make a determination if the patients' pattern of ED over- or misuse suggested that they would benefit from additional care coordination. This pre-/postanalysis is a 6-month retrospective evaluation for those patients who received multidisciplinary care coordination in addition to usual care between January 2015 and August 2018.

The basis of the program was development of an individualized care plan for each patient identified by the multidisciplinary team as a frequent ED user. The interdisciplinary committee consisted of the lead ED physician, nurse case manager, high-risk case manager, medical social worker, complex chronic condition social worker, psychiatric intensive case manager, chemical dependency recovery program case manager, and a primary care physician champion. The multidisciplinary team members voluntarily took part in the care coordination project without any change in their previous role or responsibilities. Each month, the multidisciplinary team met to review cases that were identified on the high-utilization report as frequenting the ED on 10 or more occasions during the prior 6 months.

After a root-cause analysis discussion, the team formulated an individual care plan focusing on specific issues that appeared to cause the individual to repeatedly return to the ED. The team problem-solved to overcome identified barriers that prevented patients from using appropriate levels of care. Examples of solutions included addressing pain management, alcohol or other drug abuse, outpatient follow-up, transportation difficulties, housing, and social support systems. The lead ED physician summarized the group's discussion and made a note in the patient's medical record. The record was flagged and the individual care plan was entered into the electronic health record system to facilitate care coordination during any subsequent patient contacts. Non-ED–specific care coordination interventions were assigned to designated health professionals to be worked through normal business channels and to maintain continuity of services.

The primary outcome of interest was ED utilization and hospital admissions. The first author collected data from the hospital's electronic health record system about ED visits and hospitalizations for each patient 6 months prior to and 6 months after the development of the patient's individual care plan. Other baseline data were captured including age, sex, race/ethnicity, insurance status, medical and mental health history, use of tobacco and other substances of abuse, homelessness, and any prior frequent ED use patterns. Data were also obtained about any patient deaths.

Data were collected, cleaned, secured, and stored in an Excel file. Descriptive statistics were analyzed to determine characteristics of frequent users in the sample. Frequencies and/or percentages were calculated for all categorical variables and means with standard deviations for all continuous variables. We compared the number of ED visits and hospital admissions for 6 months prior to intervention and 6 months postintervention and used the nonparametric Wilcoxon signed rank test to examine whether the mean number of ED visits and/or hospital admissions significantly differed from pre to post. Binary logistic regression was used to examine whether several risk factors identified in the literature predicted ongoing frequent use patterns. Data were analyzed using Intellectus Statistics (Version 1.14.12.29; Intellectus Statistics, LLC, Clearwater, FL) computer software.

RESULTS

Between January 2015 and August 2018, 58 unique patients were assessed as part of the multidisciplinary

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care coordination program. The average age of all program participants was 57 years with a range from 23 to 93 years. Baseline characteristics are presented in Table 1. Of note, the most frequently observed category of sex was female ($n = 36$; 62%) and the most frequently observed category of race was Black ($n = 34$; 59%). Exactly half the patients had a complex medical history defined as having heart failure, two or more chronic health conditions (i.e., hypertension, diabetes, coronary artery disease, stroke history, chronic obstructive pulmonary disease, end-stage renal disease, human immunodeficiency virus/acquired immunodeficiency syndrome), or heart failure and multiple chronic health conditions. In addition, a number of participants had at least one mental health disorder ($n = 38$, 66%), most commonly major depressive disorder ($n = 12$, 21%). All participants were members of the managed care organization's health plan with the majority contracted for care through Medicare and/or Medicaid ($n = 46$, 79.3%). A small proportion of participants were observed at baseline to be homeless ($n = 3$, 5.2%), use tobacco ($n = 9$, 15.5%), have a chemical dependency disorder ($n = 17$, 29.3%), and/or exhibit drug-seeking behavior in the ED ($n = 3$, 5.2%).

TABLE 1

Baseline Characteristics of Participants ($n = 58$)[a]

	Number	Percentage of Total
Sex		
Male	22	37.9
Female	36	62.1
Race/ethnicity		
White	17	29.3
Black or African American	34	58.6
Hispanic or Latino	4	6.9
Asian	3	5.2
Complex medical history[b]	29	50.0
Mental health disorder (≥1)	38	65.5
Chemical dependency	17	29.3
History of or current tobacco use	34	58.6
Insurance		
Medicare	22	37.9
Medicaid	10	17.2
Medicare and Medicaid	14	24.1
Commercial	7	12.1
Reform	3	5.2
Other	2	3.5
Homeless	3	5.2

[a] Mean age of study population = 57.47 (standard deviation = 19.94, standard error of the mean = 2.62, sample minimum = 23.00, sample maximum = 93.00).

[b] Complex medical history is defined as all heart failures or exacerbation of chronic conditions not adequately managed and/or history of greater than two comorbidities (i.e., hypertension, diabetes, coronary artery disease, stroke history, chronic obstructive pulmonary disease, end stage renal disease, human immunodeficiency virus/acquired immunodeficiency syndrome).

Patients managed under the program had an average of 16.5 ED visits and 3.4 hospital admissions 6 months prior to the program's intervention and an average of 8.8 ED visits and 3.3 hospital admissions 6 months postintervention (see Figure 1). There was a pre-/postdifference of 7.7 ED visits (95% confidence interval [CI] = 4.44–10.97, $p < .001$) and a pre-/postdifference of 0.1 hospital admissions (95% CI = −1.24 to 1.45, $p = .875$). We examined the paired data for normality and homogeneity of variance; the results of a Shapiro–Wilk test and a Q–Q scatterplot indicated that the data were heavily tailed and that normality could not be assumed. We used the nonparametric two-tailed Wilcoxon signed rank test to examine pre-/post-ED visits among patients. Results indicated that preintervention ED visits (median = 13) were significantly greater than postintervention visits (median = 6), $V = 973.50$, $z = -4.34$, $r = .64$, $p < .001$. A similar Wilcoxon signed rank test for pre-/posthospital admissions was not significant, $V = 275.50$, $z = -0.55$, $r = .08$, $p = .585$. A boxplot of ranked values for pre- and post-ED visits is presented in Figure 2. Of note, 13 (27.7%) patients continued to visit the ED 10 or more times during the 6 months after the program intervention (see Table 2).

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In evaluating the various predictor variables on the outcome of ED visits, sex (particularly male), prior frequent use (defined as having a history of frequent use prior to selection for this 6-month intervention period), and complex medical history appeared to have the greatest contribution to ongoing frequent ED visits.

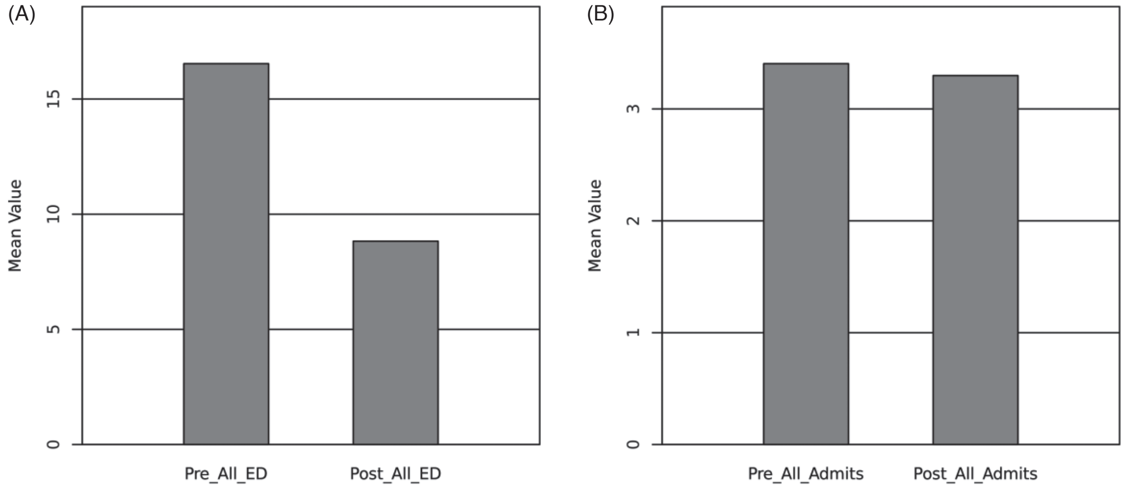

FIGURE 1
The means of pre- and post-ED visits and hospital admissions (*n* = 47). ED = emergency department.

prior frequent use (defined as having a history of frequent use prior to selection for this 6-month intervention period), and complex medical history appeared to have the greatest contribution to ongoing frequent ED visits. The study authors dichotomized post-ED visits as greater than or less than 10 and used a binary logistic regression to examine whether prior frequent use, number of pre-ED visits, age, sex, complex medical history, and mental health disorder had a significant effect on the odds of ongoing frequent ED use. The overall model was significant, $\chi^2(6) = 17.62$, $p = .007$, explaining 32% of the variability in the outcome. No individual regression coefficient had a significant effect on the odds of ongoing frequent ED use (see Table 3).

Finally, we compared the characteristics of living patients with the 11 patients who died during the study period and the additional seven patients who died after the study period (see Table 4). The deceased group was older on average and had more complex medical and tobacco use histories than the living patients. The 11 patients who died during the study period had no history of being a prior frequent user. However, six of the seven patients who died after the study period had a history of being a prior frequent user; only one had been flagged a frequent user more than one time (i.e., three previous times).

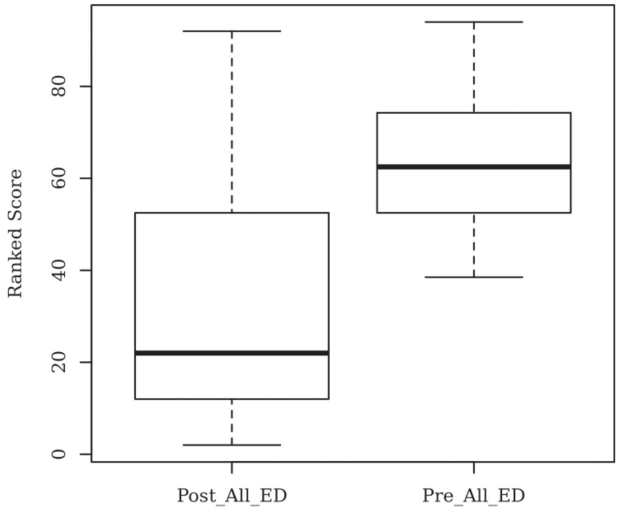

FIGURE 2
Ranked values of pre- and post-ED visits. ED = emergency department.

DISCUSSION

To reduce avoidable ED visits and hospital admissions, lessen hospital care costs, and improve quality of care, it is essential to identify the characteristics of frequent users. Frequent ED users are often described as ethnic, poor, homeless, uninsured, and chronically and/or mentally ill (Bodenmann et al., 2015; LaCalle & Rabin, 2010; Vinton et al., 2014). The demographic characteristics of our program's 58 patients were closely aligned with previous research; females and Blacks were the majority frequent ED users. In addition, a significant proportion was observed to have a complex medical history, at least one mental

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TABLE 2
Postintervention ED Visits and Prior Identification as a Frequent User

Number of Postintervention ED Visits	Number of Patients	Number (%) of Patients With No History of Frequent Use	Number (%) of Patients With History of Frequent Use
0–3 ED visits	14	8 (27%)	6 (35%)
4–6 ED visits	10	9 (30%)	1 (6%)
7–9 ED visits	10	8 (27%)	2 (12%)
10+ ED visits	13	5 (17%)	8 (47%)

Note. ED = emergency department.

health disorder, and be a former or current tobacco user. We did not collect income information but utilized Medicaid eligibility as a substitute for income status and found that this patient population represented 41.4% of the frequent ED users. Contrary to the findings of LaCalle and Rabin (2010) and Vinton et al. (2014), all of our patients were insured, with a small proportion having alcohol and drug problems and an even smaller proportion with inadequate housing issues. Shumway, Boccellari, O'Brien, and Okin (2008) found in their randomized controlled trial that case management better addressed frequent ED users' psychosocial problems such as homelessness ($p < .01$), problem alcohol use ($p = .04$), lack of health insurance ($p = .02$), lack of social security income ($p < .01$), and unmet financial needs ($p = .04$) than usual care. We had a higher proportion of patients with medical and mental health issues and a lower proportion with lack of insurance, homelessness, and chemical dependency, suggesting that greater emphasis should be placed on care coordination interventions that address medical and mental health issues.

Our multidisciplinary care coordination program demonstrated a significant and large reduction in ED visits. There is no standard definition of frequent use; cut points vary in the literature, and there are often different definitions for subgroups. The most common threshold is four or more visits in a year for frequent use and 18 or more visits in a year for high frequent use (Doupe et al., 2012; LaCalle & Rabin, 2010; Nelson et al., 2011; Vinton et al., 2014). Our program's frequent use threshold was 10 or greater visits in 6 months, classifying our patients as high frequent users with the aforementioned definition. In a closer examination of frequent use 6 months after the intervention, 29.7% continued to visit the ED 10 or more times, 42.6% dropped to four to nine ED visits, and 29.8% fell into the less than four threshold. Furthermore, of the 13 patients who continued to visit the ED 10 or more times, eight (61.5%) of them were noted to have a history of prior frequent use.

Attrition is not uncommon among frequent ED users. LaCalle and Rabin (2010) found that an individual who had four or more visits in a given year was only 28%–38% likely to be a frequent user the next year, suggesting a constantly shifting frequent user population. Nelson et al. (2011) attributed the phenomenon to potentially higher rates of morbidity and excess death for frequent users, indicating that this population consists of seriously ill people. It may be that frequent visits to the ED may change, dependent upon the phase of seriously ill patients' conditions. A difference in ED visits in our study could be the result of attrition or death. As we were able to access information across a large, multihospital health care system, using the electronic medical record, it is not likely that the reduction in ED visits was due to death. We had no way, however, of determining whether attrition contributed to the reduction in postintervention ED visits. The complex population of high frequent users may have unique unmet needs as compared with their frequent user counterparts.

Determining whether known risk factors predict ongoing frequent use patterns was another exploratory area of interest for evaluating this program. One unexpected finding was that the predictor variables used in the regression model explained only 32% of variance in postintervention frequent ED visits and none of the individual predictors were statistically significant at p value of less than .05. Sex, prior

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frequent use, and complex medical history appeared to contribute the greatest effect. Income, education level, health literacy, support system, and distance to the ED might have also explained frequent ED visits (Bodenmann et al., 2015). These data could prove useful in refining predictor models and providing perspective on additional unmet social, clinical, and behavioral needs of the high frequent user. Such knowledge could be leveraged to improve care coordination and quality of care.

Finally, we studied the 18 frequent users (31%) who died during or after the 6-month follow-up. Frequent ED users have an increased mortality risk compared with their nonfrequent user counterparts (Griffin et al., 2018; Nelson et al., 2011). However, few researchers have determined factors that forecast mortality in this vulnerable population. Our findings are consistent with the study by Griffin et al. (2018) who identified that older age and the presence of multiple medical comorbidities were important predictors of mortality. The average age of our deceased frequent users was 67.3 years, compared with 52.9 years among those still living. There was a higher percentage of deceased frequent users with complex medical histories and history of tobacco use compared with those still living. These findings are consistent with other cohort study findings associating younger age and absence of substance use to survival (Carpenter et al., 2015).

An advantage of our program was that it reduced ED utilization by frequent users with no additional direct care coordination costs to the organization. Quality improvement projects usually require upfront costs, which can be a barrier to implementations. Our program utilized a multidisciplinary committee of existing staff under regular salaries and work schedules, demonstrating the effectiveness of a low-cost approach to reducing frequent ED utilization.

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We can speculate that with a reduction in ED visits and hospitalizations comes a reduction in hospital costs. Our program has not yet been evaluated to determine the cost-effectiveness or benefit/costs of a multidisciplinary care coordination program.

TABLE 3

Logistic Regression With Predictors of Postintervention Frequent ED Use[a]

Variable	*B*	*SE*	95% CI	χ^2	*p*	OR
Intercept	−4.36	2.02	−9.06 to −0.91	4.65	.031	
Prior frequent user	1.06	0.92	−0.78 to 2.95	1.31	.252	2.87
Pre-ED frequent use	0.18	0.09	0.04 to 0.41	3.83	.050	1.19
Age	−0.01	0.03	−0.07 to 0.05	0.10	.754	0.99
Sex	1.64	0.90	−0.04 to 3.60	3.29	.070	5.13
Complex medical history	0.92	1.13	−1.26 to 3.28	0.67	.412	2.52
Mental health disorder	−1.18	0.98	−3.29 to 0.68	1.47	.225	0.31

Note. CI = confidence interval; ED = emergency department; OR = odds ratio.

[a] $\chi^2(6) = 17.62$, $p = .007$, McFadden $R^2 = .32$.

TABLE 4
Baseline Characteristics of Living and Deceased Frequent Users of the Emergency Department

	Living	Deceased	
	After Study Period *n* = 40 (%)	During Study Period *n* = 11 (%)	After Study Period *n* =7 (%)
Age (mean in years)	52.9 (23.0–87.0)	74.3 (42.0–93.0)	60.4 (28.0–78.0)
Prior frequent user	11 (27.5)	0 (0)	6 (85.7)
Sex			
Male	15 (37.5)	4 (36.3)	3 (42.9)
Female	25 (62.5)	7 (63.6)	4 (57.1)
Race/ethnicity			
White	12 (30.0)	5 (45.5)	0 (0)
Black or African American	23 (57.5)	6 (54.5)	5 (71.4)
Hispanic or Latino	3 (7.5)	0 (0)	1 (14.3)
Asian	2 (5)	0 (0)	1 (14.3)
Complex medical history	17 (42.5)	7 (63.6)	5 (71.4)
Mental health disorder(s)	28 (70.0)	7 (63.6)	3 (42.8)
Chemical dependency	13 (32.5)	2 (18.2)	2 (28.6)
History of tobacco use	22 (55.0)	5 (45.5)	7 (100)
Insurance (Medicaid)	19 (47.5)	2 (18.1)	3 (42.9)
Homeless	2 (5)	0 (0)	1 (14.3)

Financial data about the program's patients should be collected as part of an ongoing evaluation to identify the impact of the program. A return-on-investment analysis could quantify the level of investment needed to achieve cost savings. These savings could then be invested in the delivery of care coordination at ED point-of-care for those at risk of frequent use, thereby improving health outcomes and reducing consumption of emergency medical services among this vulnerable population.

LIMITATIONS

There were several limitations of this evaluation. We had pre-/postdata for only 47 participants and did not conduct a power analysis prior to the impact evaluation. However, we did calculate confidence intervals around the mean difference in pre-/post-ED visits and they were precise (du Prel, Hommel, Röhrig, & Blettner, 2009). The 6-month follow-up period was shorter than other cohort studies of frequent ED use; however, we were still able to detect a meaningful reduction in ED visits during the follow-up period, even among high frequent users. Shumway et al. (2008) concluded that 12 and 24 months may be a more appropriate period of follow-up and Grover, Crawford, and Close (2016) reported in their 8-year observational study that it took 3 years after enrollment to see an average of fewer than four visits for their high frequent users of the ED. A critical limitation of the program was the variable wait time for patients once they were identified as a frequent user. Average time to intervention was 151 days (range: 0–406). The multidisciplinary staff incorporated the program activities into their existing role and responsibilities. The time limitations for committee members did not allow for additional monitoring of high-utilization reports during the intervention period to detect changes in frequent use behavior in real time. We were not able to implement a formal process to review and revise plans of care or follow-up on their use. Finally, though we did have data about ED usage at other facilities and hospitalizations outside the integrated health plan delivery system, it is impossible to know whether we accounted for all ED visits and hospitalizations.

CONCLUSION

Frequent ED users are equally justified in seeking emergency care as nonfrequent users. The effort to reduce avoidable visits to the ED is not to block access but to minimize preventable visits and direct patients to more appropriate care. We were able to test the impact of a multidisciplinary care committee on ED use and report positive outcomes in our local setting. The promising result with no upfront costs is a good start. A care coordination program can optimize the overall quality of care for this vulnerable group of patients and control hospital costs incurred by frequent ED users. Our program evidences the positive impact case management has on utilization and health outcomes. A longer impact evaluation and a cost analysis are needed to assess long-term clinical outcomes, quality, utilization, and cost.

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