

Implementation and outcomes of a pharmacy managed clinic for veterans in a substance abuse residential rehabilitation treatment program

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ABSTRACT

Purpose: The purpose of this study is to evaluate the impact of a newly implemented pharmacy managed service in a Substance Abuse Residential Rehabilitation Treatment Program (SARRTP) within a Veterans Medical Center setting. Patients receiving residential treatment may have a lapse in primary care services if their primary care provider is based out of a different facility. This can result in undesirable outcomes, including unnecessary emergency department (ED) visits or unaddressed medical needs. Additionally, these patients have often made significant lifestyle modifications that can have a major impact on the treatment of their chronic medical conditions. A pharmacy-managed clinic was created for these patients to provide medication therapy management as appropriate within the scope of a pharmacist.

Methods: A retrospective chart review was performed using the Computerized Patient Record System to assess outcomes of the newly implemented pharmacy managed clinic for SARRTP patients. Institutional Review Board approval was obtained prior to data collection. Outcomes assessed included number of ED visits before and after clinic initiation, as well as number and type of pharmacist interventions. Fisher's exact test was used to determine statistical significance, defined as $p < 0.05$.

Results: Thirty-seven patients were seen in a total of 46 clinic visits over a period of six months. ED visits had a statistically significant decrease of 27.9% following clinic initiation ($p < 0.05$). There was an average of 4.3 problems assessed per patient. Average number of interventions per patient was 2.7 with an average of 3.5 educational topics documented.

Conclusion: ED visits decreased significantly following clinic initiation, resulting in cost savings. Multiple interventions were made through this new clinical service to improve Veteran care. Lifestyle modifications made by this patient population often require therapy adjustments and education to optimize care. This type of innovative clinical service would likely be beneficial for other facilities to consider providing.

KEYWORDS

pharmacy interventions, health outcomes, medication-related problems

INTRODUCTION

Many hospitals and facilities offer a residential program as an option for patients undergoing treatment for substance abuse disorders. Typically, a Residential Rehabilitation Treatment Program (RRTP) is a setting where patients reside temporarily at the facility while undergoing active treatment for addictive disorders. Length of stay and program requirements vary among facilities. RRTP programs may offer addiction groups and classes, individual appointments with addiction psychiatrists, and community Alcoholics Anonymous (AA) or Narcotics Anonymous (NA) meetings. Residential facility staff may include psychiatrists, psychologists, social workers, family therapists, nurses, advanced practice nurses, pharmacists, and other interdisciplinary specialties. Level

of independence for patients in the RRTP varies and typically progresses with time, specifically with regards to medication administration and activities scheduling.

While the RRTP is a supportive environment for addiction treatment, there is the potential for discontinuity in the way medical issues are addressed. Patients receiving treatment in the RRTP may have a lapse in primary care services, especially if their primary care provider is based out of a different facility. This can result in undesirable outcomes, including unaddressed medical needs and/or unnecessary, costly emergency department (ED) visits. Additionally, this patient population often makes major lifestyle modifications in the residential setting that can have a major impact on their chronic medical conditions. These lifestyle modifications may include alcohol/drug cessation, dietary/nutrition changes,

improvement in medication adherence, or changes in physical activity. In addition to medical management issues, some facilities, including all Veterans Affairs (VA) Medical Centers, have requirements that pharmacists be a part of the RRTP multidisciplinary team per the Veterans Health Administration (VHA) handbook.¹ In order to meet VHA requirements, a pharmacy-managed clinic was implemented at a Veterans Hospital to address medical issues as appropriate within the scope of the pharmacist for patients in the RRTP. Our hypothesis is that this clinic would decrease ED visits in this patient population while enrolled in the RRTP.

In addition to managing medical issues including chronic disease states, a pharmacist-managed clinic is also an appropriate setting to address tobacco use. There is a high rate of tobacco use among patients with substance abuse history. Evidence has demonstrated that brief interventions for tobacco cessation are beneficial. Evidence has also demonstrated that medication therapy in addition to counseling improves success of tobacco cessation attempts.² A clinic to provide tobacco cessation medications and counseling may result in increased tobacco cessation rates among this population. Tobacco use and alcohol use are often considered complementary behaviors and some evidence has demonstrated that individuals who quit smoking reduce their drinking more than those who continue to smoke. One study found that quitting smoking reduced the odds of heavy drinking over time.³ Evidence is mixed if there are additional benefits of quitting alcohol and tobacco in tandem, however a pharmacist managed clinic would be an appropriate setting to provide education and offer tobacco cessation aids.

Evidence has demonstrated that a small percentage of patients with addictive disorders receive anti-craving medications⁴. There are multiple medications currently approved as alcohol anti-craving medications, and many others that have been studied and have shown some promising results, however these medications remain under-utilized. A pharmacist-managed clinic is an appropriate setting to discuss the use of these medications and could result in increased utilization.

No prior published data was found on pharmacist-managed clinics for patients in this setting. As this patient population has a high need for medication management, a pharmacist-managed clinic was initiated to address these medical needs, provide medication and lifestyle education, and meet VHA requirements for pharmacist involvement in the RRTP. We conducted a retrospective chart review to assess utilization of the

pharmacist-managed clinic, interventions made through the clinic, and to assess and compare the number of ED visits before and after clinic initiation.

METHODS

A pharmacist-managed clinic was implemented to address medical issues for patients in the RRTP. Initially patients were scheduled to the clinic on a referral basis, which was switched after a few months to proactive scheduling of all RRTP patients to the clinic to improve utilization. The clinic was managed by one pharmacy resident under a scope of practice throughout the period of data collection. This scope of practice allowed privileges for ordering medications, laboratory monitoring, and consults as appropriate. The clinic was available for 1.5 hours per week for a maximum of three patients to be seen weekly in 30 minute appointment slots. Patients were also scheduled proactively to see an advanced practice nurse (APN) who served as the primary care provider while patients were in the RRTP. The APN and pharmacist collaborated with each other and with the rest of the addictive disorders treatment team when developing treatment plans for patients. While the APN visits covered primary care issues, the pharmacist clinic followed a more specialized format, focusing on chronic disease state management, tobacco cessation, anti-craving medication utilization, and medication education.

A retrospective chart review was performed using the VA Computerized Patient Record System (CPRS) to collect data on the pharmacist-managed clinic. The number of ED visits while patients were actively enrolled in the RRTP was compared for six months prior to clinic initiation and for six months following clinic establishment. Percent difference was calculated and Fisher exact test was used to detect statistical significance, defined as $p < 0.05$.

Patients were included in this study if they were enrolled in the RRTP within a one-year period of time including six months prior to pharmacist-managed clinic initiation and six months after clinic establishment. Patients were excluded if they did not attend a clinic visit with the pharmacist after clinic initiation so that data could be compared between those patients who were not seen by the pharmacist (prior to clinic initiation) and those who were seen by the pharmacist.

RESULTS

During the six months following clinic initiation 66.7% of available clinic time was utilized. Utilization increased over time starting at 46.2% for the first three months and increasing to 93.3% for the next three months. This

increase in utilization correlated with a switch from referral-based to proactive scheduling of RRTP patients.

Over the six month period there were a total of 37 patients seen in 46 clinic visits (Table 1). Each patient had an average of 1.2 visits with the pharmacist (range 1-2 visits.) An average of 4.3 problems were assessed per patient per visit, with an average of 3.5 major educational topics discussed per visit. There was an average of 2.7 interventions per patient over the six month period of time. A total of 48 interventions involved prescription initiation, dose adjustment, or discontinuation (Table 2). Types of medications prescribed/adjusted varied among patients, most frequently related to pain issues (20.8%), diabetes (14.6%), hyperlipidemia (10.4%), hypertension (10.4%), or electrolyte abnormalities (10.4%). Laboratory values were reviewed for every patient seen in clinic, and laboratory orders were placed for 30 of the 46 total visits. Laboratory interventions included ordering baseline or follow-up lab values, or therapeutic drug monitoring. There were 11 consults placed through the clinic, mainly for nutrition (36.4%). Six diagnoses were made through the pharmacist-managed clinic, including impaired fasting glucose (83.3%) and diabetes (16.7%). Other miscellaneous interventions were made through the clinic including suicide screening for varenicline therapy, medication reconciliation, and issuing new glucometers.

During the six month period prior to clinic initiation, there were 35 ED visits for 58 patients in the RRTP. Six months following clinic initiation there were 12 ED visits for 37 patients, which reflects a 27.9% decrease in ED visits following clinic initiation. This decrease was statistically significant ($p < 0.05$). The average cost per ED visit at this facility was \$650. The only significant difference in demographic characteristics assessed between the patients in the RRTP prior to the pharmacist-managed clinic and those seen in the pharmacist-managed clinic was increased utilization of anti-craving medications (Table 1). There were no significant differences between groups for reason for ED visit or for ED visits resulting in hospitalization.

DISCUSSION

Residential Rehabilitation Treatment Programs are clinical settings where pharmacists may be underutilized currently. No prior published data was found on pharmacist-managed clinics for patients in this setting. This is interesting since RRTP patients suffer from significant co-morbidities resulting in a high need for the medication expertise and clinical interventions that pharmacists can provide. Patients in these programs

frequently make major lifestyle modifications, which may alter medication effectiveness, laboratory values, and level of chronic disease state control. Additionally, this patient population has a high level of tobacco use, and poor utilization of anti-craving medications. A pharmacist-managed clinic is a setting where all of these issues can be addressed.

Multiple clinical interventions, primarily focused on chronic disease state management and tobacco cessation, were made by the pharmacist in this clinic. In addition, introduction of a pharmacist-managed clinic was associated with significantly decreased ED visits.

There were some limitations to this study, one of which was the study design, which was a retrospective chart review. Additionally, there may have been confounding factors that could not be measured which may have affected the decrease in ED visits. The RRTP is constantly evolving in an attempt to further improve patient care so we cannot rule out other changes beyond the pharmacist-managed clinic that may have also had an impact on number of ED visits. In addition to having visits with the pharmacist, the patients in the program also had increased visits with an APN who worked collaboratively with the pharmacist, and this also may have had an impact on decreased ED visits. Furthermore, the number of ED visits was compared between two different populations and the variability between these two populations may have affected the number of ED visits, although there were no significant differences identified among demographic characteristics except for increased utilization of anti-craving medications. This increase in anti-craving medication utilization was unlikely to have affected ED visits during the time period of data collection as there were no significant differences in reason for ED visits, including drug/alcohol relapse. If data on ED visits had been collected for a longer period of time including post-discharge from the RRTP, a difference may have been identified. Another limitation of this study was that the limited time availability of the pharmacist-managed clinic, the average length of stay of 45 days, and the frequent new admissions did not allow for many follow-up assessments, which makes it difficult to assess the long-term impact of the interventions made.

This study provides the first evidence that a pharmacist-managed clinic for patients in an RRTP is associated with decreased ED visits. This study supports continued expansion of pharmacist-managed clinical services to new settings. Demonstrating beneficial effects of pharmacist interventions and identifying areas such as an RRTP where pharmacist services are highly needed is one way

that the profession can continue to expand and move forward in providing clinical services.

There are no conflicts of interest for the authors to disclose.

Table 1. Demographic Characteristics

	Patients seen in pharmacist-managed clinic (N=37)	Patients in RRTP six months prior to pharmacist-managed clinic (N=58)
Age	50 ± 9.3	49.5 ± 9.7
Male Gender	35 (94.6%)	55 (94.8%)
Tobacco User	33 (89.2%)	54 (93.1%)
Diabetes	5 (13.5%)	7 (12.1%)
Impaired Fasting Glucose	5 (13.5%)	8 (13.8%)
Hyperlipidemia	10 (27.0%)	16 (27.6%)
Hypertension	14 (37.8%)	20 (34.5%)
Anti-Craving Medication	15 (41%)	8 (13.8%)*
Average Number of Medications/Patient	8.8 ± 4.3	8.6 ± 4.1

*p-value <0.05

No other p values were statistically significant for differences in demographic characteristics.

Table 2. Medication Interventions

Prescription Initiation	
Pain issues	4 (8.3%)
Diabetes	5 (10.4%)
Hyperlipidemia	4 (8.3%)
Hypertension	2 (4.2%)
Tobacco cessation	2 (4.2%)
Alcohol anti-craving	2 (4.2%)
Thiamine supplementation	1 (2.1%)
Sleep	2 (4.2%)
GERD	1 (2.1%)
Dry skin	1 (2.1%)
Adverse drug reaction	1 (2.1%)
Total	25 (52%)
Dose adjustment	
Pain issues	3 (6.3%)
Diabetes	2 (4.2%)
Hypertension	3 (6.3%)
Electrolyte abnormalities	4 (8.3%)
Tobacco cessation	1 (2.1%)
Depression	2 (4.2%)
Total	15 (35.7%)
Medication discontinuation	
Pain issues	3 (6.3%)
Hyperlipidemia	1 (2.1%)
Electrolyte abnormalities	1 (2.1%)
Alcohol anti-craving	1 (2.1%)
Thiamine supplementation	1 (2.1%)
GERD	1 (2.1%)
Total	8 (19%)

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