Reducing Coprescriptions of Benzodiazepines and Opioids in a Veteran Population

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ABSTRACT

OBJECTIVES: Combination opioid and benzodiazepine (BZD) therapy is associated with poor treatment outcomes and increased risk of overdose death. There is currently limited literature detailing well-implemented strategies to minimize dual prescribing of these agents. The following describes the implementation processes and outcomes of a health system quality improvement project that aimed to reduce combination BZD and opioid therapy.

STUDY DESIGN: A retrospective chart review–based quality improvement project.

METHODS: All patients within a single healthcare system of the Department of Veterans Affairs treated with long-term (>90 days) combination therapy were identified. A psychiatric pharmacist submitted a 1-time chart review note for each patient, which briefly outlined patient-specific considerations and recommendations for alternatives to BZD treatment. After a 30-day period following entry of the chart review notes, data were collected regarding the number of providers who (1) acknowledged the chart review notes by providing their additional signature and (2) committed to the recommended interventions by initiating taper schedules.

RESULTS: During the 30-day follow-up period, 47.5% (n = 29) of chart review notes were acknowledged and 11.5% (n = 7) of prescriptions were tapered by providers. Mental health providers were less likely to provide their additional signature to the chart review notes ($\chi^2 = 4.62$, $df = 1$, $P = .0316$; Fisher exact test, $P = .0215$) and to initiate taper schedules ($\chi^2 = 5.51$, $df = 1$, $P = .0189$; Fisher exact test, $P = .0410$) compared with primary care providers.

CONCLUSIONS: Chart review note recommendations were frequently disregarded by providers and are likely insufficient as a primary intervention tool for reducing long-term combination BZD and opioid therapy.

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The reality of America's prescription drug overdose epidemic has been well established.[1] Benzodiazepines (BZDs) and opioids are the 2 most common prescription medication classes associated with the overdose epidemic.[1,2] Although there are serious risks related to the use of these medication classes individually, such as tolerance, dependence, and abuse, concurrent use can further increase the risk of overdose death due to potentiation of respiratory depressant effects.[3] These risks are particularly concerning in vulnerable patient populations, such as those with posttraumatic stress disorder (PTSD), in which chronic symptoms of anxiety and pain commonly overlap.[4]

National data from 2004 to 2011 indicate that emergency department visits and drug overdose deaths involving nonmedical coingestion of opioids and BZDs have increased 3-fold.[5] Nevertheless, high-risk prescribing practices are common, and many overdose victims are prescribed these agents by their healthcare providers.[6,7] It should be noted that nearly half of all opioid prescriptions are written by primary care practitioners, who report inadequate formal training in safe opioid prescribing.[8,9] Fragmented patient care can also contribute to inadvertent coprescribing due to the involvement of multiple providers in the treatment of medical and psychiatric comorbidities.[10]

In recent years, several systematic risk assessment and mitigation strategies have been suggested to enhance the safe prescribing of opioids and BZDs. These include controlled substance agreements, regular follow-ups, urine drug screenings, using prescription drug monitoring programs, and offering emergency naloxone kits to first responders and patients at high risk of opioid-related overdose.[11] The adoption of these strategies has been limited, partly due to several provider-related barriers, such as lack of resources, time, and training.[11] One option recommended by treatment guidelines is deployment of clinical pharmacists as part of interdisciplinary teams to optimize medication safety.[11] A recent study identified the instrumental role of clinical pharmacists in the successful reduction of high-dose opioid prescribing practices by providing education and case management of taper plans.[12] However, no study to our knowledge has evaluated the use of interventions that

TAKEAWAY POINTS

- When prescribing controlled substances, systematic risk assessment and mitigation strategies to prevent abuse and overdose, such as controlled substance agreements and urine drug screening, are suboptimally implemented in routine clinical practice.
- Compared with primary care providers, mental health providers were less likely to acknowledge or act upon pharmacists' recommendations to taper benzodiazepines.
- Chart review note recommendations are likely insufficient as a primary intervention tool for reducing long-term combination benzodiazepine and opioid therapy.

include clinical pharmacists for reducing the coprescribing of BZDs and opioid analgesics. To determine if passive clinical pharmacist involvement would reduce combination opioid and BZD therapy, we developed a quality improvement activity (QIA) that incorporated a single pharmacist without the need for additional resources or dedicated office visits. Herein, we describe the processes and outcomes of this health system QIA designed to reduce combination opioid and BZD therapy.

METHODS

Design

This project was a retrospective chart review–based investigation conducted within a small Department of Veterans Affairs (VA) healthcare system, which consisted of 5 community-based outpatient clinics in suburban and rural areas throughout the Southwest United States. A board-certified psychiatric pharmacist was assigned the task of assessing BZD prescribing practices that resulted in coprescription with opioids from both primary and specialty care (ie, mental health) clinical settings. The psychiatric pharmacist's clinical responsibilities included the provision of comprehensive medication and disease management under a collaborative practice agreement at 1 of the 5 outpatient clinics. In addition to routine clinical duties, the psychiatric pharmacist dedicated time to remotely review dual prescribing and execute the project's intervention. Prescribers included physicians and midlevel providers (eg, nurse practitioners, physician assistants), who were classified based on their areas of practice in primary care versus mental health clinical settings. Because the project was conducted as part of a VA QIA, institutional review board approval was not required.

Implementation

Our inclusion criteria consisted of any veterans receiving long-term (≥90 days in 3 consecutive months or longer) combination opioid and BZD prescriptions from 1 of the 5 outpatient clinics. An analysis was conducted to identify a baseline list of patients on combination opioid and BZD prescriptions using the Veterans Integrated Service Network Datamart database. Datamart is an online real-time user interface that extracts data from electronic health records (EHRs) using Structured Query Language. Various databases are developed within Datamart with a specific VA clinical and safety initiative in mind. The database used for this project generated a list of patients who were actively receiving an opioid prescription for chronic noncancer pain and were coprescribed a BZD for at least 90 days. This patient list was generated in January 2015. Upon chart review, patients were excluded if they had discontinued, initiated tapering, or failed to renew expired prescriptions. Patients were also excluded if their only opioid prescribed was tramadol, due to a lower risk of respiratory depression in comparison with equianalgesic doses of other opioid agonists.[13]

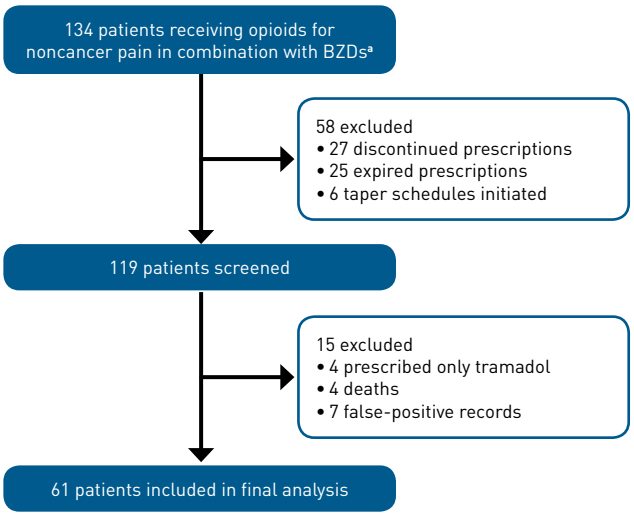
For each identified patient, the psychiatric pharmacist reviewed the EHR and submitted a 1-time patient-specific chart review note in VA's Computerized Patient Record System (CPRS). Each chart review note followed a template that included a list of patients' underlying overdose risk factors, documented prior medication trials for the indication for which the BZD was prescribed (ie, anxiety, insomnia), recommended alternative treatment options to BZDs, and provided BZD stepwise tapering regimens. Opioid dosages were calculated as daily morphine milligram equivalents (MME) at baseline using a standard opioid conversion table, with high doses defined as 100 MME or higher.[14] Other overdose risk factors assessed for each patient included being older than 55 years; history of airway abnormalities, such as asthma and chronic obstructive pulmonary disease; sleep apnea; renal and/or hepatic insufficiencies; substance use disorder; and concomitant use of alcohol.[3,11] Diagnoses of PTSD were also included, given the increased risk of adverse treatment outcomes with combination therapy in this population.[4,15] Urine drug screenings (UDSs) were considered timely if they were completed at least once within the past year from the date of chart review note entry, as indicated in the patients' charts. Finally, current VA guideline recommendations for BZD tapering schedules were included as a reference for providers.[16]

Once the chart review notes were completed and submitted into the CPRS, the psychiatric pharmacist requested that the respective BZD prescriber also provide their signature, known as the additional signature, to the chart review note to confirm acknowledgment of the recommendation. The additional signature did not complete the note but simply indicated that the chart review note had been acknowledged. Also, prescribers were asked to indicate their intervention plans by creating an addendum to the original note. Prescribers had to log into the CPRS and check the View Alerts inbox feature, similar to an email inbox, to see the request for their additional signature pending for the completed chart review note.

Evaluation

After a 30-day period following entry of the chart review notes, data were collected regarding the number of providers who (1) acknowledged the chart review notes by providing their additional signature and (2) committed to the recommended interventions by initiating taper schedules.

FIGURE. Patient Flow Diagram: Inclusion and Exclusion Criteria for Patients Coprescribed Opioids for Chronic Noncancer Pain and BZDs



BZD indicates benzodiazepine.

[a]All patients receiving combination prescriptions from at least 1 of the 5 outpatient clinics within this healthcare system.

TABLE 1. Baseline Patient Characteristics (N = 61)

Baseline Characteristics	n	%
Sex		
Male	55	90
Age (mean ± SD = 61 ± 9 years)		
≥55 years	48	79
Race/ethnicity		
Non-Hispanic white	48	79
Other	13	21
Posttraumatic stress disorder	28	46
Airway abnormalities	24	39
Sleep apnea	17	28
History of substance use disorder		
Tobacco	16	26
Alcohol and illicit substances	13	21
Renal/hepatic insufficiencies	11	18
MME (median = 40 mg/day)		
≥100 mg/day	11	18
BZD indications		
Anxiety	40	66
Insomnia	17	28
Anxiety and insomnia	4	7
Urine drug screen		
Missing within the past year	23	38

BZD indicates benzodiazepine; MME, morphine milligram equivalents.

Data Analysis

Descriptive statistics were used to report demographics and other patient-specific characteristics. Due to small sample sizes, both Pearson χ^2 and Fisher exact tests were used to evaluate any significant differences in response rates to chart review notes between provider types (mental health vs primary care). All analyses were performed using SAS version 9.4 statistical software (SAS; Cary, North Carolina), and findings were considered significant if $P < .05$.

RESULTS

A total of 134 patients were identified as receiving both opioid and BZD prescriptions. After being reviewed for QIA criteria, 61 patients were included in the final analysis (**Figure**). The majority of patients were white (n = 48; 79%), male (n = 55; 90%), and at least 55 years old (n = 48; 79%; mean [SD] age = 61 [9] years). The primary indication for BZDs was anxiety (n = 40; 66%), followed by insomnia (n = 17; 28%) and then combined insomnia and anxiety (n = 4; 7%). All opioids in this analysis were prescribed for chronic noncancer pain; however, specific indications are not reported in this QIA. The MME calculated for 11 patients (18%) resulted in 100 mg or higher per day. About one-third of patients (n = 23; 38%) had a missing UDS within the past year, and 11 of these patients had never completed a UDS within this particular healthcare system (**Table 1**). Unique prescribers of BZDs within our cohort included 7 mental health practitioners and 14 primary care providers (PCPs). Among the 7 mental health practitioners, 57% (n = 4) were individually responsible for 5 or more coprescriptions, whereas 57% (n = 8) of PCPs were individually responsible for just 1 coprescription (**Table 2**).

During the 30-day follow-up period, 48% (n = 29) of chart review notes were acknowledged and 11% (n = 7) of prescriptions were tapered by providers. Mental health providers were less likely to provide their additional signature ($\chi^2 = 4.62$, $df = 1$, $P = .0316$; Fisher exact test, $P = .0215$) and initiate taper schedules ($\chi^2 = 5.51$, $df = 1$, $P = .0189$; Fisher exact test, $P = .0410$) compared with PCPs (**Table 3**). Of the recommendations enacted by providers, taper schedules were initiated for BZDs (n = 3), opioids (n = 2), and both BZDs and opioids (n = 2). Providers reported future plans to discuss BZD taper initiation for 7 patients during their next clinic visits.

DISCUSSION

This study evaluated a passive clinical pharmacist intervention to reduce the coprescribing of BZDs and opioid analgesics by using chart review notes to notify providers of potentially problematic prescribing. Using this approach, we found that less than half (48%) of the chart review notes were acknowledged and the vast majority (89%) of recommendations were not acted upon by providers within the observation period. These results have implications for the future development of tailored interventions to overcome coprescribing.

Based on national data from 2004 to 2009, 27% of US veterans on chronic opioid therapy received a concurrent BZD prescription,

TABLE 2. Distribution of Patients With Coprescriptions, by Provider Specialty

Number of Coprescriptions	Provider Specialty			
	Mental Health		Primary Care	
	n/N	%	n/N	%
1	2/7	10	8/14	38
2-4	1/7	5	5/14	24
≥5	4/7	19	1/14	5

TABLE 3. Provider Responsiveness to Chart Review Notes After 30 Days

Number of Providers Who Did or Did Not Acknowledge Chart Review Notes by Providing Their Additional Signatures				
	Unsigned		Signed	
Specialty Type	n	%	n	%
Primary care	10	37	17	63
Mental health	22	65	12	35
Total	32	52	29	48
$\chi^2 = 4.62$, $df = 1$, $P = .0316$				
Number of Providers Who Did or Did Not Commit to the Recommended Interventions by Initiating Taper Schedules				
	Not Initiated		Initiated	
Specialty Type	n	%	n	%
Primary care	21	78	6	22
Mental health	33	97	1	3
Total	54	89	7	11[a]
$\chi^2 = 5.51$, $df = 1$, $P = .0189$				

BZD indicates benzodiazepine.

[a]Interventions committed by providers included initiating taper schedules for BZDs (n = 3), opioids (n = 2), and both BZDs and opioids (n = 2).

and patients who received this combination accounted for nearly half of all veteran deaths from a drug overdose while taking opioid analgesics.[6] Our findings that 61 patients were coprescribed opioids and BZDs in the presence of underlying risk factors, such as age greater than 55 years (79%), high-dose opioid prescriptions (18%), PTSD diagnosis (46%), and sleep apnea (28%), suggest that educational outreaches to both clinicians and patients may be warranted. Recent evidence from the EMPOWER trial demonstrated that basic patient counseling and a shared decision-making process can be highly effective in discontinuation of inappropriate BZD therapy.[17] Targeted educational programs should use these data to drive provider development and improve practice-based policies.

The recent advent of VA clinical dashboards has created an impetus for efficient patient monitoring and real-time clinical decision making. By using these clinical tools, VA providers can now identify patients on high-risk opioid and BZD therapies, access risk estimates for overdose and respiratory depression, and track attempted risk mitigation strategies.[18] According to a recent study, the national implementation of the Opioid Safety Initiative (OSI) dashboard has significantly improved the rates of high-risk prescribing, including an overall 21% reduction in opioid and BZD coprescriptions.[19] However, the authors noted a wide variation in implementation of the OSI and prescribing patterns across VA facilities.[19] In spite of providing clinical information similar to that in the OSI dashboards, we found that chart review notes did not demonstrate meaningful change in provider prescribing. This could be due to alert fatigue, as clinicians can receive up to an average of 77 EHR inbox notifications daily.[20] Although specialists typically receive a lower number of notifications,[20] we found that mental health providers were less likely to provide their additional signature or initiate taper schedules than primary care clinicians. Alternative passive approaches, such as the use of electronic consults or clinical reminders, may be more effective at getting the attention of the prescribers. However, interventions that address not only providers' knowledge or awareness but also motivation and attitudes have been found to be most effective.[21] Consequently, academic detailing programs have been established throughout the VA and several other large healthcare systems to promote safe prescribing via multifaceted interventions that include one-on-one interactive discussions with providers.

Perhaps among our most striking findings was that most patients receiving coprescriptions were white (79%), despite the patient population within our healthcare system being predominantly Hispanic. It has previously been reported that providers, within both the VA and non-VA clinical settings, are more cautious when prescribing opioid analgesics for minority patients compared with whites.[22] Minority patients are also less likely to be screened for pain symptoms but more closely monitored once opioid therapy has been initiated.[23,24] This racial disparity is thought to be due to a lack of adequate training in evidence-based opioid prescribing, leading some providers to make clinical decisions based on heuristics and stereotypes.[25] In addition, barriers to communication play an important role, because the experience of pain differs considerably among ethnic groups.[22] Multicultural integrated approaches, as well as standardized monitoring procedures, are crucial to improve both the quality and equity of current pain management practices.

Limitations

This report represents a novel discussion on methods for reducing opioid and BZD combination therapy. Although our work presents several noteworthy findings, we acknowledge important limitations. First, the patient sample was small and selected from a single VA healthcare system, which may limit the external validity of our findings. Additionally, we used an arbitrary follow-up period of 30 days despite the lack of current standards on what constitutes a timely response when using note-based messaging. Although the chart review notes outlined risks specific to opioid therapy, taper recommendations were limited to BZDs, given the purview of psychiatric pharmacy. Nevertheless, provider review of the chart review notes resulted in taper initiation of opioid prescriptions for 4 patients. It is possible that the overall poor response to chart review

notes was partly due to lack of a personal working relationship between the prescribers and the psychiatric pharmacist. Finally, we did not examine clinical outcomes—namely, symptom severity, quality of life, or functional status—and as a result, we cannot determine the impact of these factors on clinician judgment and risk–benefit assessment. Since the completion of this study, several policy initiatives have emerged in response to the prescription drug epidemic, including measures to increase access to evidence-based treatment for mental health and substance use disorders, as well as alternative therapies and interventional pain treatment options. Future research is needed to examine the potential implications of these regulatory changes on accidental drug overdose trends and overall quality of patient care.

CONCLUSIONS

Despite electronic chart review notes being the primary method of communication between clinical pharmacists and other clinicians, this study found that they were frequently disregarded by providers and are likely insufficient as a primary intervention tool for reducing long-term combination BZD and opioid therapy. This observation underscores the importance of evaluating current electronic communication methods to ensure optimal treatment outcomes and patient safety. Our findings can inform the development of future clinical initiatives and quality improvement strategies to reduce coprescribing. ■

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