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Description of a pharmacist-led clinical video telehealth group clinic for opioid overdose prevention and naloxone education

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Abstract

To achieve the nationwide goal of reducing opioid-related deaths, a clinical pharmacy specialist–led clinical video telehealth (CVT) clinic was created at a Veterans Affairs medical center (VAMC) to deliver opioid overdose prevention and naloxone education to at-risk patients. The purpose of this innovative practice was to improve access to this potentially life-saving intervention to patients across urban and rural areas. This study is a single-center, descriptive analysis of adult patients across 2 VAMC campuses and 4 community-based outpatient clinics from July 11, 2016, through December 31, 2016. The purpose of this innovative practice was to increase access to overdose education and naloxone distribution (OEND) to at-risk patients across urban and rural areas. Patient-specific factors were also examined among those receiving naloxone through the CVT clinic compared to other prescribers. During the first 6 months from the initiation of the clinic, 1 pharmacist prescribed 21% of the health care system's naloxone. These patients identified by the pharmacist-led CVT clinic were more likely to be considered high-risk due to concomitant use of opioids and benzodiazepines. In conclusion, the pharmacist-led CVT group clinic has been an efficient strategy to extend OEND services to high-risk patients beyond central, urban areas.

Keywords: naloxone, opioid, overdose, CVT, telehealth

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Background

Drug overdose is the leading cause of accidental death in the United States, and veterans are almost twice as likely to have accidental overdose compared to the general population.[1,2] In response to the increasing number of overdose deaths, opioid overdose education and naloxone distribution (OEND) programs were established in 1996.[3] Naloxone has been responsible for more than 10 000 overdose reversals since it was first implemented in the United States in the public health setting more than 20 years ago. Efforts are underway at health care facilities across the nation to find the most efficient and effective way to identify and provide this service to patients at risk for opioid overdose.[4,5]

This Veterans Affairs medical center (VAMC) greatly relies on community-based outpatient clinics, which are often

located in rural areas, to meet patient-care needs with more than 63 000 patients classified as *highly rural* or *rural* and bring care closer to home. However, these clinics may not have all the specialty services and staff found at the primary medical centers. Clinical video telehealth (CVT) offers increased access to patients in rural areas. Patients and providers at separate locations are able to see and hear each other by participating in CVT simultaneously. Currently, no published literature has evaluated opioid overdose prevention programs in the setting of a telehealth clinic. A reoccurring barrier to OEND is that there is not always enough time for the prescriber to provide effective education given multiple conditions that must be addressed during a patient care appointment. Although the Department of Veterans Affairs is working to educate all prescribers on the importance of OEND, clinical pharmacy specialists (CPSs) are uniquely trained and positioned to identify patients who may benefit from OEND, provide patient education, and prescribe naloxone.[4] For these reasons, a pharmacist-led OEND CVT clinic was created at a VAMC. The purpose of this innovative practice was to increase access to OEND to at-risk patients across urban and rural areas.

Clinic Description

The OEND CVT clinic began offering weekly group naloxone training to patients at 2 main campuses and 4 community-based outpatient clinics on July 11, 2016. Patients present at the pharmacist's location received face-to-face training, and those joining from up to 5 other remote locations participated simultaneously through CVT technology. The pharmacist could see up to 4 patients at each of the 6 locations for a potential capacity of 24 patients per 1-hour session. Patients were most commonly referred to this service by their opioid prescriber or identified by the clinic CPS. The CPS coordinating the service identified patients using VAMC risk-stratification tools, such as the Stratification Tool for Opioid Risk Mitigation (STORM) dashboard.

Participants were encouraged to bring family, friends, or others closely involved in their care to participate in training. To start, the pharmacist ensured all patients understood the purpose of the group and how CVT audiovisual equipment would be used to allow for interaction across all locations. Importance was placed on establishing the primary objectives of the education session: opioid overdose–prevention strategies, recognizing overdose, and responding to overdose. The pharmacist developed and utilized a PowerPoint (Microsoft, Redmond, WA) presentation as a visual aid and asked questions throughout the education session to assess patient knowledge and encourage discussion and engagement. Following completion of the CVT education group, the pharmacist prescribed naloxone under the scope of practice for all patients in attendance.

Additionally, a telehealth clinical technician was present at each location to schedule appointments, escort patients into the group room, provide educational materials, operate audiovisual equipment, and triage any technical difficulties. Telehealth clinical technicians are commonly registered nurses and licensed practical nurses.

Impact on Patient Care

A descriptive analysis of the first 6 months of this service was conducted from July 11, 2016, through December 31, 2016. All patients prescribed naloxone during this time frame were included for analysis. Hospice, palliative care, and community living center patients were excluded along with patients who received naloxone prescriptions from non-VAMC providers or from other VAMC facilities. Naloxone refills and renewals were not included in data analysis. As a quality-improvement project, this review was submitted to the institutional review board and deemed exempt.

The total number of naloxone prescriptions distributed through the CVT clinic was compared to prescriptions from all other clinics during the first 6 months of clinic initiation. Risk Index for Overdose or Serious Opioid-Induced Respiratory Depression (RIOSORD) scores, number of patients prescribed concomitant benzodiazepines and opioids, and morphine equivalent daily dose (MEDD) $>$100 were described for this cohort to provide an objective risk assessment. The RIOSORD scores were utilized given their ability to provide real-time, evidence-based information regarding risk by incorporating high-risk disease states (chronic pulmonary disease, chronic kidney disease, heart failure), opioid formulation, MEDD, and psychotropic medications.[6] Extracted data from the STORM dashboard included demographics, past medical history, and RIOSORD scores. Demographics included age, sex, race, MEDD, and comorbid conditions associated with opioid-induced respiratory depression. All prescription data was extracted from pharmacy claims data. Statistical analysis was completed using Excel (Microsoft) and GraphPad (GraphPad Software Inc, San Diego, CA). All demographics and data points were analyzed using descriptive statistics and chi square analysis with Yates correction. Significance tests were 2-sided. P values $<$.05 were defined as statistically significant.

Of patients who received a naloxone kit during this time period, the mean age was 57 years, 94.2% were men, and 84.4% were white (Table 1). The RIOSORD scores were assessed for all patients who filled a naloxone kit during the specified time frame irrespective of whether

TABLE 1: Characteristics of the sample of 397 patients prescribed naloxone from July 11, 2016, through December 31, 2016, at baseline (n = 397)[a]

Characteristics	CVT Patients (n = 84)	Non-CVT Patients (n = 313)	*P* Value
Age			
20-59	39 (46.4)	140 (44.7)	.8772
>60	45 (53.6)	173 (55.3)	
Sex			
Female	5 (6.0)	18 (5.8)	.9440
Male	79 (94.0)	295 (94.2)	
Race			
White	71 (84.5)	264 (84.3)	.9680
Nonwhite	13 (15.5)	49 (15.7)	
Substance use disorder			
Yes	18 (21.4)	100 (31.9)	.0821
No	66 (78.6)	213 (68.1)	
Bipolar disorder (I or II)			
Yes	7 (8.3)	17 (5.4)	.4635
No	77 (91.7)	296 (94.6)	
Posttraumatic stress disorder			
Yes	34 (40.5)	108 (34.5)	.3758
No	50 (59.5)	205 (65.5)	
Depression			
Yes	38 (45.2)	146 (46.6)	.9152
No	46 (54.8)	167 (53.4)	
Other mental health diagnosis			
Yes	20 (23.8)	42 (13.4)	.0308
No	64 (76.2)	271 (86.6)	
Sleep apnea			
Yes	17 (20.2)	58 (18.5)	.8430
No	67 (79.8)	255 (81.5)	
Chronic pulmonary disease			
Yes	24 (28.6)	72 (23.0)	.3603
No	60 (71.4)	241 (77.0)	
Liver impairment			
Yes	5 (6.0)	30 (9.6)	.4089
No	79 (94.0)	283 (90.4)	
Renal impairment			
Yes	4 (4.8)	22 (7.0)	.4089
No	80 (95.2)	291 (93.0)	

CVT = clinical video telehealth.

[a]Data are n (%) unless otherwise stated.

naloxone was filled in a CVT clinic versus other clinic locations. Of all patients who received a naloxone kit during this time period, 63.7% (n = 144) of patients had a RIOSORD score >25, correlating with at least a 14% risk of experiencing opioid-induced respiratory depression.[6] Depression was the most common comorbid disease state in both groups.

TABLE 2: Association between naloxone prescribing by clinical video telehealth (CVT) clinic and high-risk characteristics, including concomitant benzodiazepine prescriptions and morphine equivalent daily dose (MEDD) >100 for patients prescribed opioids[a]

	CVT Patients (n = 81)	Non-CVT Patients (n = 264)	*P* Value
Concomitant benzodiazepine prescription[b]			
Yes	56 (69.1)	91 (34.4)	<.0001
No	25 (30.9)	173 (65.6)	
		Non-CVT Patients (n = 231)[b]	
MEDD >100[c]			
Yes	36 (44.4)	156 (67.5)	.0003
No	45 (55.6)	75 (32.5)	

[a]Data are n (%) unless otherwise stated.

[b]Analysis of concomitant benzodiazepine prescriptions and MEDD excluded patients not prescribed opioids.

[c]Analysis of MEDD >100 excluded 133 patients prescribed buprenorphine due to inability to calculate MEDD.

We found that 21.2% (n = 84) of all prescriptions across the VAMC (n = 397) were written by the CVT group clinic lead pharmacist during the first 6 months of this service. Of these 84 patients, 18 participated in the CVT group clinic at the main site, and 66 patients participated remotely. There were 82 naloxone prescribers, including clinical pharmacist specialists (n = 11), physicians (n = 43), nurse practitioners (n = 25), and physician assistants (n = 3). Of these prescribers, 59.7% were within the primary care/medicine services (n = 49) and 28% were within the mental health and pain service (n = 23). The substance use disorder population showed a trend toward lower rates of prescribing through the CVT clinic compared to all other clinics (21.4% vs 31.9%; *P* = .0821). The CVT clinic trended toward identifying other high-risk individuals, such as those with chronic pulmonary disease and sleep apnea. Patients seen in all other clinics were more likely to be prescribed MEDD >100 (67.5%, n = 56) when compared to those seen in the CVT clinic (44.4%, n = 36; *P* = .0003). We found that 69.1% (n = 56) of CVT patients were using concomitant benzodiazepines and opioids compared to 34.4% (n = 91) of patients who received naloxone from other clinics (*P* < .0001; Table 2).

Discussion

Previous studies[7-10] have demonstrated that opioid overdose prevention programs are associated with a reduction in opioid overdose deaths. However, there is currently no published literature describing opioid overdose prevention programs in the setting of telehealth

clinics. Clinical video telehealth was chosen as a means to increase access to OEND services for rural patients.

The increased likelihood of patients served by the CVT clinic to be receiving concomitant benzodiazepines and opioids was not surprising. As part of the CVT clinic initiative, a priority target population was patients who were prescribed both benzodiazepines and opioids due to increased overdose risk. It is also not alarming to see patients with substance use disorders were more likely to be prescribed naloxone via non-CVT providers as many of these patients receive naloxone through specialty addiction clinics.

One limitation is that our sample size is smaller than expected because we were unable to assess cancellations and no-shows. We were unable to assess naloxone utilization or patients' understanding of education objectively. All patients were encouraged to bring a guest to the CVT clinic, but we did not assess guest attendance. Another limitation is that MEDD was calculated using max daily dose allotment rather than actual daily use, and only prescriptions that were filled at this VAMC were included. The controlled substance-monitoring database was not utilized. Last, comorbid disease states were only included if they were active within the year prior to clinic implementation and had been appropriately coded in the electronic health record.

Conclusion

In conclusion, the pharmacist-led CVT group clinic has been an efficient strategy to extend OEND services to high-risk patients beyond central, urban areas. The clinic was effective at reaching patients who were deemed high risk based upon concomitant use of benzodiazepines and opioid medications using population-management tools. Providing OEND services to high-risk populations remains a priority throughout the county. We feel that use of CVT to provide OEND services is an innovative solution to help better serve those at risk for overdose regardless of geographical location. In the future, population management data tools could be used to better target other high-risk populations, such as those with substance use disorder.

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