

Opioid Management in Older Adults: Lessons Learned From a Geriatric Patient-Centered Medical Home

Nkechi Azubike, ANP; Michelle Moseley, PharmD; and James S. Powers, MD

Background: The United States continues to confront an opioid crisis that also affects older adults. Best practices for prescription opioid management in older adults are challenging to implement in this population. We present our experience with a 1-year management of 48 high-risk older patients who received guideline-based best practices for chronic prescription opioid therapy at a US Department of Veterans Affairs (VA) patient aligned care team (PACT) patient-centered medical home.

Methods: The GeriPACT population at the Nashville Campus of the VA Tennessee Valley Healthcare System has an enrollment of 745 patients of whom 48 (6.5%) receive chronic prescription opioid therapy. The practice is supported by the VA Computerized Patients Record System, including the electronic patient portal, My healthVet, and telemedicine capabilities. Data were collected by chart review and operations data.

Results: The mean (range) age of patients was 70.4 (66-93) years. Many patients had comorbid conditions, such as diabetes mellitus (35%), congestive heart failure (18.6%), and dementia (8.3%). More than half had an estimated glomer-

ular filtration rates (eGFR) < 60 mL/min, indicating at least stage 3 chronic kidney disease, 41.7% used mental health services (41.7%), and 20.8% had a history of opioid use disorder. Most indications for chronic pain were for musculoskeletal pain (95.8%). The mean (range) morphine equivalent daily dose was 37 mg (10-109). More than half had been seen in the emergency department, and 20.8% had been hospitalized in the previous year for an opioid-related hospitalization, and 3% had expired. Over the year, dose reductions of benzodiazepines or narcotics was performed for 12.5% of patients, accidental overdoses occurred in 4.2%, and positive urine drug screens (UDSs) for cocaine and cannabinoid/tetrahydrocannabinol occurred in 10.4%. One patient was terminated from the program for multiple positive UDSs.

Conclusions: Guideline-based patient-centered medical home management of patients with chronic pain who were treated with opioids can be an effective model contributing to the health and well-being of older patients. Complex older patients on chronic opioid treatment are best managed by an interdisciplinary team.

Author affiliations can be found at the end of the article.

Correspondence:

James Powers
(james.powers@vumc.edu)

Fed Pract. 2021;38(4).
Published online
April 9, 2021.
doi:10.12788/fp.0110

The United States continues to confront an opioid crisis that also affects older adults. According to the Substance Abuse and Mental Health Services Administration from 1999 to 2010, there has been a 4-fold increase in opioid overdose deaths.¹ Between 2010 and 2015, the rate of opioid-related inpatient stays and emergency department (ED) visits for people aged ≥ 65 years increased by 34% and 74%, respectively, and opioid-related overdose deaths continue to increase among older patients.^{1,2}

BACKGROUND

Chronic pain is estimated to affect 50 million US adults.³ Individuals receiving long-term opioid therapy may not have experienced relief with other medications or cannot take them for medical safety reasons. Losing access to opioid prescriptions can contribute to misuse of illicit opioids. Implementing best practices for prescription opioid management in older adults is challenging. Older adults have a high prev-

alence of chronic pain, which is linked to disability and loss of function, reduced mobility, falls, depression, anxiety, sleep disorders, social isolation, and suicide or suicidal ideation.⁴ Until recently, chronic pain in older adults was often treated primarily with long-term opioid prescriptions, despite little evidence for the effectiveness of that treatment for chronic conditions. The prevalence of long-term opioid use in adults has increased from 1.8% (1999-2000) to 5.4% (2013-2014), and 25% of adult long-term opioid users are aged ≥ 65 years.⁵

Older adults are especially vulnerable to developing adverse events (AEs) from opioid use, including constipation, confusion, nausea, falls, and overdose. These factors make safe prescribing more challenging even when opioids are an appropriate therapeutic choice. Older adults often have multiple chronic conditions and take multiple medications that increase risk of AEs due to drug-disease and drug-drug interactions. Finding appropriate alternatives for pain management can be

challenging in the presence of dementia if other pharmacologic options are contraindicated or mobility issues limit access to other therapeutic options.

Pain treatment plans should be based on realistic functional goals using a shared decision-making approach accounting for patient and provider expectations. All reasonable nondrug and nonopioid treatments should be considered before opioids are initiated. A comprehensive, person-centered, approach to pain management in older adults that includes opioids, other medications, and complementary and integrative care could improve both pain control and function, and reduce the harms of unnecessary opioid exposure.⁶ A validated risk review should be performed and documented on all patients starting opioids except patients enrolled in hospice care.

In 2018, the US Department of Veterans Affairs (VA) required all facilities to complete case reviews for veterans identified in the Stratification Tool for Opioid Risk Mitigation (STORM) dashboard as being at particularly high risk for AEs among patients prescribed opioids.⁷ We present our experience with a 1-year management of 48 high-risk older patients receiving chronic prescription opioid therapy. These patients obtained all their care at the VA with complete record documentation.

METHODS

The Tennessee Valley Healthcare System (TVHS) is an integrated VA health care system with > 100,000 veteran patients in middle Tennessee with 2 medical centers 40 miles apart, and 12 community-based outpatient clinics. In 2011, TVHS developed a geriatric patient-centered medical home model for geriatric primary care—the geriatric patient aligned care team (GeriPACT).⁸ GeriPACT consists of a GeriPACT primary care provider (geriatrician or geriatric nurse practitioner with a panel of about 800 outpatients), social worker, clinical pharmacist, registered nurse care manager, licensed vocational nurse, and clerical staff. GeriPACT is a special population PACT within primary care for complex geriatric and other high-risk vulnerable veterans providing integrated, interdisciplinary assessment and longitudinal management, and coordination of both VA

TABLE 1 Best Practices for Chronic Opioid Prescribing

1. Use of shared decision making to support patient involvement in assessment of risk and benefits of treatment with opioid and other treatment options, including discussing the risks/benefits of opioids and other pain treatments and how these align with the goals of care, setting realistic pain management expectations.
2. Use of multimodal pain management approaches, including behavioral, medical, interventional, and physical therapy approaches.
3. Assessing whether opioid treatment is effective and whether the dose and duration is optimal, including determining whether tapering is appropriate and tapering and ensuring effective multimodal pain management.
4. Use of risk mitigation strategies (eg, time-limited prescribing; developing plan for tapering and discontinuation of prescription at the time of initial prescribing as appropriate; naloxone distribution and patient and caregiver education in its use).
5. Use of strategies to guide prescribing that mitigate risk for misuse or development of opioid use disorder, including monitoring opioid use and identifying risk factors to prevent adverse events, misuse, diversion, or disorder.
6. Identification of the presence of opioid misuse or disorder in older adults, whether on prescription opioid therapy or not, and providing effective treatment.

and non-VA-funded (eg, Medicare and Medicaid) services for patients and caregivers. GeriPACT at the Nashville TVHS campus has an enrollment of 745 patients of whom 48 receive chronic prescription opioid therapy. The practice is supported by the VA Computerized Patients Record System (CPRS), including the electronic patient portal, My healtheVet, with telemedicine capabilities. Data were collected by chart review with operations data extracted from the Veterans Health Information System and Technology Architecture.

Best practices for prescription opioids for chronic pain follow the US Department of Health and Human Services Interagency Task Force pain management recommendations.⁴ These include: (1) Effective pain evaluation and management, including diagnostic evaluation and indicated referrals; (2) appropriately prescribed opioids when indicated; and (3) active management of opioid users to prevent AEs and misuse. Strategies used in GeriPACT were adopted from the pain management task force and designed to address needs and challenges associated with responsible chronic opioid prescribing (Table 1).

All 48 patients who were prescribed chronic opioid therapy received routine primary care at GeriPACT. A data tracking sheet was maintained from July 1, 2019 to June 30, 2020. Patients were presented for interdisciplinary collaboration and management at weekly GeriPACT where applicable continuous improvement processes

TABLE 2 Patient Characteristics (N = 48)

Demographics	Results
Age, mean (range), y	70.9 (66-93)
Lives alone, No. (%)	10 (20.8)
Major diagnosis, No. (%) ^a	
Congestive heart failure	9 (18.8)
COPD/obstructive sleep apnea	12 (25.0)
Dementia	4 (8.3)
Depression	7 (14.6)
Diabetes mellitus	17 (35.4)
Stage 3 chronic kidney disease ^b	26 (54.0)
Posttraumatic stress disorder	8 (16.7)
Peripheral vascular disease	3 (6.3)
eGFR, mean (range), mL/min	55 (21.1-100.3)
Total medications, mean (range)	14.5 (2-29)
Musculoskeletal pain diagnosis	46 (95.8)
Morphine equivalent daily dose, mean (range)	37 (10-139)
Concomitant benzodiazepine use, No. (%)	4 (8.3)
Prior opioid use disorder, No. (%)	10 (20.8)
RIOSORD score, mean (range)	21 (0-75)

Abbreviations: COPD, chronic obstructive pulmonary disease; eGFR, estimated glomerular filtration rate; RIOSORD, Risk Index for Overdose or Serious Opioid-Induced Respiratory Depression.

^aPatients may have > 1 diagnosis.

^bStage 3 chronic kidney disease is indicated by eGFR < 60 mL/min.

were incorporated. Patients were seen every 3 to 6 months and offered dose reduction and alternative therapies at those times. All patients initiated monthly calls for medication refills and were monitored with an initial opioid contract and quarterly unannounced urine drug screens (UDSs) as well as a quarterly review of the prescription drug monitoring database (PDMD). Additionally, all patients received an Opioid Risk Tool assessment (scale 0-26; high risk ≥ 8) and a Risk Index for Overdose or Serious Opioid-Induced Respiratory Depression (RIOSORD) Score (scale 0-115).^{9,10} Patients with RIOSORD scores ≥ 25 (14% risk of opioid induced respiratory depression) were issued naloxone kits.

All VA patients additionally receive a risk stratification, the clinical assessment of need (CAN) score, which is a clinical predictor of hospitalization and death developed for VA populations.¹¹ This methodology extracts predictors from 6 categories: social de-

mographics, medical conditions, vital signs, prior year use of health services, medications, and laboratory tests and constructs logistic regression models to predict outcomes. CAN scores are on a 99-point scale, with higher scores corresponding to an increased probability of future health care events.

Our overall study was designed to meet standards for quality improvement reporting excellence (SQUIRE) criteria, and this report meets the quality improvement minimum quality criteria set (QI-MQCS) domains for reporting quality improvement work.^{12,13} The TVHS Institutional Review Board determined this study to be a quality improvement initiative.

RESULTS

Chronic opioid patients comprised 6.4% of the GeriPACT population. These patients had many comorbidities, including diabetes mellitus (35%), pulmonary disease (25%), congestive heart failure (18.8%), and dementia (8%). There were 54% with estimated glomerular filtration rates (eGFR) < 60 mL/min, indicating at least stage 3 chronic kidney disease (Table 2). Patients had an average RIOSORD Score of 21 and a 14% risk of opioid induced respiratory depression, and 20% received mental health services.

The mean CAN score was 83.1, suggesting a 1-year risk of 20% for a major AE and 5% mortality risk. Many patients with chronic opioid use were transferred to GeriPACT from primary care due to presence of complex medical issues in addition to need for chronic pain management. In this population, 8% were coprescribed benzodiazepines and opioids. Consults were obtained from interventional pain for 37.5% of patients and palliative care for 27% of patients, the majority for goals of care related to chronic illness and advance directive discussions, and in 1 patient for pain and symptom management. The majority of patients (81%) had advance care planning documents or discussions documented in the electronic health record, and 87.5% of patients received home and community-based support in addition to GeriPACT care.

My healthVet patient portal secure messaging was used a mean 2.1 times per patient (range 0-27) to maintain contact with

Ger iPACT providers and patients had a mean 14.5 outpatient visits yearly (range, 1-49) in addition to monthly clinic contact for opioid prescription refills (Table 3). One patient entered long-term care. Three patients expired due to congestive heart failure, sepsis, and complications following a hip fracture. Of the patients who expired, all had advance directives or hospice care involvement. The VA STORM risk tool identifies the highest risk patients: suicide risk, current opioid or substance use disorder, suicide attempt or overdose during the past year, and potential for opioid-related respiratory depression on the RIOS-ORD scale. None of the panel patients met high-risk criteria on the Opioid Risk Tool assessment or were identified on the facility's highest risk category by the STORM risk tool.

Medication Reduction

Pharmacists routinely counseled patients regarding the appropriate timing of refills and made monthly calls to request refills of controlled drugs. Three patients agreed to opioid dose reduction due to improved clinical status. Two patients had 25% and 30% dose reductions, respectively, and 1 patient was able to be discontinued opioids. This was achieved through reduction of therapy and or substitution of alternative nonopioid pain medications. One patient was initiated on a slow benzodiazepine taper schedule after decades of benzodiazepine use in addition to engagement with a whole health coach and primary care mental health integration provider. Another patient was disenrolled from the clinic because of repeated non-adherence and positive UDSs for polysubstance use disorder.

Accidental Overdoses

There were 2 patients with accidental overdoses who survived, both on high morphine equivalent daily doses (MEDDs). One patient was admitted to the intensive care unit for increasing confusion after taking more than the prescribed opioids (120 mg MEDD) due to uncontrolled pain for 2 months following surgery. The second patient was taking 66 mg MEDD with multiple risk factors for respiratory depression (severe chronic obstructive pulmo-

TABLE 3 Chronic Opioid Patients Outcomes (N = 48)

Opioid Outcomes	Results
Expired, No. (%)	3 (6.3)
Overdose, No. (%)	2 (4.2)
Terminated from program, No. (%)	1 (2.0)
Previous year	
Hospitalized, No. (%) [mean]	10 (20.8) [3.4]
Emergency department visit, No. (%) [mean]	25 (52.0) [2.3]
Outpatient visit, mean (range)	14.5 (1-49)
Benzodiazepine/opioid dose reduction, No. (%)	6 (12.5)
Home and community-based services, No. (%)	42 (87.5)
My healthVet use, mean (range)	2.1 (0-27)
Entered long-term care, No. (%)	1 (2.0)
Mental health visit in previous 2 years, No. (%)	20 (41.7)
Interventional Pain Clinic visit, No. (%)	18 (37.5)
Positive urine drug screen, No. (%) ^a	5 (10.4)

^aScreens: 2 cocaine and 3 cannabinoid/tetrahydrocannabinol positive screens.

nary disease requiring oxygen, obstructive sleep apnea, and concomitant benzodiazepine use) who repeatedly refused tapering of opioids and benzodiazepines. He was found unresponsive in respiratory depression by home health staff. Both patients had naloxone kits in their home that were not administered.

Urine Drug Screening

There was an occasional negative opioid UDS attributed to patients on a low-dose opioid administered more than 24 hours before. Five patients (10.4%) had positive UDSs. Two patients were positive for cocaine, and because of chronic persistent pain and complex medical problems cared for in the clinic, counseled and continued on therapy with no repeat infractions. Two patients were positive for cannabinoids attributed to CBD oil products, which are legal in Tennessee. One patient had repeated positive UDSs for polysubstance abuse and was terminated from the clinic, preferring to use cannabinoids and other substances illegally. Meperidine, fentanyl, tramadol, and other synthetic opioids are not detected on a routine UDS.

DISCUSSION

Primary care is critical in optimizing the prescribing and use of opioids in older adults. The patient-centered medical home can give health care providers the tools and support to provide evidence—based pain management for their older adult patients and to facilitate prescription and monitoring of appropriate opioid use to minimizing AEs and OUD risk. This includes a reliable health information technology monitoring system as part of a collaborative, person-centered care practice capable of managing frail older patients with multiple chronic conditions as well as social risk factors. GeriPACT was able to implement guideline—based evaluation and treatment of chronic pain patients through optimal management of opioids, risk reduction, and monitoring and management of AEs, misuse, and dose tapering using shared decision-making strategies when appropriate.

Complex older patients on chronic opioid treatment can do well and are best managed by an interdisciplinary team. Our panel had a high prevalence of chronic opioid patients and a high expected mortality based on the severity of comorbidities. Patients had frequent access to care with utilization of many support services. Patients received care for many chronic illnesses at the same time they received opioid therapy and generally were satisfied and adherent to their treatment plan. Published reports of the prevalence of coprescribing of benzodiazepines and opioids of 1.1 to 2.7% in the general population, may be lower than our veteran population.¹⁴ Despite the fact that nearly 20% of the population had a history of opioid misuse, only 1 patient was terminated from the clinic because of repeated episodes of polysubstance use disorder.

GeriPACT has the capability to be responsive to the changing needs of older chronic pain patients as a learning health system using continuous process improvement with frequent team meetings and interdisciplinary care.¹⁵ Our experience with chronic pain management demonstrates the feasibility and quality of guideline-based management and enhances our understanding of the intersection of care, chronic pain management, and opioid use disorder in older adults.

Limitations

Our experience with this population of older veterans may not be applicable to other geriatric populations. While all patients received their primary care at VA and patients were seen regularly, our data may not account for possible use of some community services, including hospitalization and long-term care.

CONCLUSIONS

Guideline-based patient-centered medical home management of patients with chronic pain treated with opioids can be an effective model to maintain and improve measures of health and well-being in older patients. Primary care management is critical in optimizing the prescribing and use of opioids in older adults. These complex older patients are best managed by an interdisciplinary team.

Acknowledgments

This work was supported in part by the Geriatric Workforce Enhancement Program, HRSA Grant: 1-U1Q-HP 033085-01-00.

Author affiliations

Nkechi Azubike is an Advanced Practice Nurse, **Michelle Moseley** is a Clinical Pharmacist, and **James Powers** is the Clinical Associate Director at the Geriatric Research Education and Clinical Center, all at the Tennessee Valley Healthcare System. James Powers is a Geriatrician at the Vanderbilt Center for Quality Aging in Nashville.

Author disclosures

The authors report no actual or potential conflicts of interest with regard to this article.

Disclaimer

The opinions expressed herein are those of the authors and do not necessarily reflect those of *Federal Practitioner*, Frontline Medical Communications Inc., the US Government, or any of its agencies. This article may discuss unlabeled or investigational use of certain drugs. Please review the complete prescribing information for specific drugs or drug combinations—including indications, contraindications, warnings, and adverse effects—before administering pharmacologic therapy to patients.

References

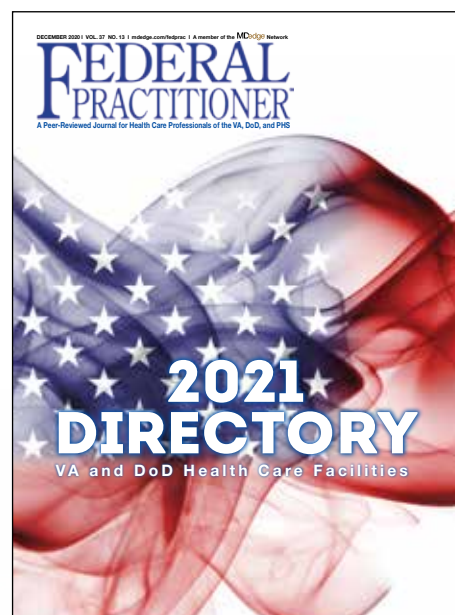
1. Weiss AJ, Heslin KC, Barrett ML, Izar R, Bierman AS. Opioid-related inpatient stays and emergency department visits among patients aged 65 years and older, 2010 and 2015: Statistical Brief #244. In: *Healthcare Cost and Utilization Project (HCUP) Statistical Briefs*. Rockville (MD): Agency for Healthcare Research and Quality (US); September 18, 2018.
2. Centers for Disease Control and Prevention. New data show significant changes in drug overdose deaths. Published March 18, 2020. Accessed March 11, 2021. <https://www.cdc.gov/media/releases/2020/p0318-data-show-changes-overdose-deaths.html>
3. Dahlhamer J, Lucas J, Zelaya C, et al. Prevalence of chronic pain and high-impact chronic pain among adults - United States, 2016. *MMWR Morb Mortal Wkly Rep*. 2018;67(36):1001-1006. Published 2018 Sep 14. doi:10.15585/mmwr.mm6736a2

4. National Institutes of Health, Interagency Pain Research Coordinating Committee. National pain strategy overview. Updated March 11, 2021. Accessed March 11, 2021. <https://www.iprcc.nih.gov/national-pain-strategy-overview>
5. Mojtabei R. National trends in long-term use of prescription opioids. *Pharmacoepidemiol Drug Saf.* 2018;27(5):526-534. doi:10.1002/pds.4278
6. US Department of Health and Human Services. Pain management best practices inter-agency task force report: updates, gaps, inconsistencies, and recommendations. Published May 9, 2019. Accessed March 17, 2021. <https://www.hhs.gov/sites/default/files/pmtf-final-report-2019-05-23.pdf>
7. Oliva EM, Bowe T, Tavakoli S, et al. Development and applications of the Veterans Health Administration's Stratification Tool for Opioid Risk Mitigation (STORM) to improve opioid safety and prevent overdose and suicide. *Psychol Serv.* 2017;14(1):34-49. doi:10.1037/ser0000099
8. US Department of Veterans Affairs, Veterans Health Administration. Geriatric patient aligned care team (Geri-PACT). Published June 15, 2015. Accessed March 11, 2021. https://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=3115
9. Webster LR, Webster RM. Predicting aberrant behaviors in opioid-treated patients: preliminary validation of the Opioid Risk Tool. *Pain Med.* 2005;6(6):432-442. doi:10.1111/j.1526-4637.2005.00072.x
10. Zedler B, Xie L, Wang L, et al. Development of a risk index for serious prescription opioid-induced respiratory depression or overdose in Veterans' Health Administration patients. *Pain Med.* 2015;16(8):1566-1579. doi:10.1111/pme.12777
11. Wang L, Porter B, Maynard C, et al. Predicting risk of hospitalization or death among patients receiving primary care in the Veterans Health Administration. *Med Care.* 2013;51(4):368-373. doi:10.1097/MLR.0b013e31827da95a
12. Ogrinc G, Mooney SE, Estrada C, et al. The SQUIRE (Standards for Quality Improvement Reporting Excellence) guidelines for quality improvement reporting: explanation and elaboration. *Qual Saf Health Care.* 2008;17(suppl 1):i13-i32. doi:10.1136/qshc.2008.029058
13. Hempel S, Shekelle PG, Liu JL, et al. Development of the Quality Improvement Minimum Quality Criteria Set (QI-MQCS): a tool for critical appraisal of quality improvement intervention publications. *BMJ Qual Saf.* 2015;24(12):796-804. doi:10.1136/bmjqs-2014-003151
14. Rhee TG. Coprescribing of Benzodiazepines and Opioids in Older Adults: Rates, Correlates, and National Trends. *J Gerontol A Biol Sci Med Sci.* 2019;74(12):1910-1915. doi:10.1093/gerona/gly283
15. National Academy of Medicine. *The Learning Healthcare System: Workshop Summary.* The National Academies Press; 2007. doi:10.17226/11903.

Digital 2021 Facility Directory

Available at mdedge.com/fedprac
and in the Mobile App

A searchable resource of VA and DoD health care facilities, listing station and DSN numbers, outpatient clinics, specialties and awards, facility statistics, and key personnel.



To order print copies,
contact Lea Drag at
ldrag@mdedge.com.