Original Article

Managing Chronic Pain in Cancer Survivors Prescribed Long-Term Opioid Therapy: A National Survey of Ambulatory Palliative Care Providers

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Abstract

Context. Chronic pain, or pain lasting more than three months, is common among cancer survivors, who are often prescribed long-term opioid therapy (LTOT).

Objective. Our objective was to explore palliative care providers' experiences with managing chronic pain in cancer survivors prescribed LTOT, specifically in ambulatory palliative care settings, and their strategies for overcoming challenges.

Methods. We recruited providers through leading national palliative care organizations who manage chronic pain in cancer survivors. Asked to consider only cancer survivors with chronic pain when responding, participants completed an online survey that included questions about use of opioid risk mitigation tools, confidence in addressing opioid misuse behaviors and discussing/recommending management approaches, and access to addiction treatment.

Results. Of 157 participants, most were physicians (83%) or nurse practitioners (15%). Most reported using opioid risk mitigation tools such as urine drug testing (71%), opioid treatment agreements (85%), and practitioner database monitoring programs (94%). Participants were confident (7–8/10) managing the most commonly encountered opioid misuse behaviors (missing appointments, marijuana use, and using more opioids than prescribed) and in their ability to recommend nonpharmacologic and nonopioid pharmacologic treatments for chronic pain (10/10). They were least confident prescribing naloxone or managing addiction (5/10); only 27% reported having training or systems in place to address addiction. Only 13% had a waiver to prescribe buprenorphine.

Conclusion. Palliative care providers are comfortable with many aspects of managing chronic pain in cancer survivors on LTOT, although challenges persist, including the lack of systems-based approaches and training in addiction treatment. J Pain Symptom Manage 2019;57:20–27. *© 2018 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.*

Key Words

Palliative care, ambulatory medicine, opioids, cancer pain, cancer survivor

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Introduction

Chronic pain is defined as persistent pain lasting more than three months, beyond the period of normal tissue healing .[1,2] Chronic pain is common; contemporary estimates of chronic pain in the general population are from 11% to 14%.[3,4] As a result of many factors, including efforts by the Federation of State Medical Boards to increase identification and treatment of chronic pain,[5] initiatives such as "pain as the fifth vital sign,"[6] and the marketing of certain opioids as addiction resistant,[7] the U.S. saw a surge in opioid prescribing between 1991 and 2013.[8]

This epidemic of opioid prescribing, which has contributed significantly to the current U.S. epidemic of opioid misuse and addiction,[9] occurred contemporaneously with important changes in the field of palliative care.[10] Most significantly, the provision of palliative care is no longer limited to patients at the end of life and has moved "upstream" to care for patients with a serious illness[11] who may be undergoing curative or disease-modifying treatment. Although palliative care remains predominantly an inpatient specialty, the last 2 decades have seen a proliferation of ambulatory palliative care programs. Many ambulatory palliative care programs focus on patients with cancer, including cancer survivors, who are defined as individuals with cancer anytime from their diagnosis until the end of life. Pain management is one of the most common reasons for referral to ambulatory palliative care programs.[12]

As treatments for cancer have improved, more cancer survivors are living chronically with their cancer,[13] or even achieving cure. The prevalence of chronic pain lasting 3 months or more in cancer survivors may be as high as 40%.[14–16] Such pain may predate their cancer (e.g., preexisting knee osteoarthritis), may be exacerbated by cancer treatments and procedures (e.g., preexisting low back pain exacerbated by being sedentary after cancer-related surgery), may be caused by ongoing active disease (e.g., chest pain in a patient with lung cancer), or may be caused by sequelae of the cancer or its treatment (e.g., lymphedema-related pain in a patient with surgically treated breast cancer, lifelong neuropathy in a patient previously treated with paclitaxel).[17] The American Society of Clinical Oncology recently released a guideline on the management of chronic pain in cancer survivors[18] that has significant overlap with the Centers for Disease Control and Prevention (CDC) Guideline for prescribing opioids for chronic pain .[1] Both emphasize a careful weighing of the risks and benefits of long-term opioid therapy (LTOT), recommend the use of monitoring strategies such as urine drug testing and practitioner database monitoring programs, and encourage providers to address opioid misuse behaviors and treat addiction when it occurs.

Not surprisingly, an emerging literature has highlighted that among cancer survivors in ambulatory palliative care clinics, chronic pain, LTOT, and opioid misuse are common and underappreciated. For example, Childers et al. found that 56% of urine drug tests obtained in an ambulatory cancer palliative care clinic returned unexpected results[19]; however, in a national survey of palliative care fellowship clinics, Tan et al. found that most did not view opioid misuse as an important problem in their patients.[20] Traditional on-the-job training and even palliative care fellowships have not emphasized chronic pain or the approach to opioid prescribing, advocated by recent guidelines, which weighs the risks against the benefits of opioids for each individual patient.[9,21,22]

Little is known about the experiences front-line palliative care providers face when addressing these important issues. Therefore, this study's objective was to conduct a large-scale national study to investigate palliative care providers' experiences with managing chronic pain in cancer survivors prescribed LTOT, and their strategies for overcoming challenges they encounter.

Methods

Recruitment of Participants

Our survey was e-mailed to the entire membership of the Palliative Care Research Cooperative (472 individuals) [23] and the American Academy of Hospice and Palliative Medicine (4575 individuals). Respondents were asked to self-report the following inclusion criteria: 1) whether they are a physician, nurse practitioner, or physician assistant; 2) whether they provide direct patient care to adults in an outpatient palliative care clinic (including precepting residents and/or fellows); 3) whether they are at least 18 years old; 4) whether they provide outpatient palliative care to patients with a history of cancer who are not at the end of life (life expectancy of more than 6 months), including survivors who have completed cancer treatment, are in clinical remission, are under cancer surveillance only, who are not in active treatment and are not at the end of life; and 5) whether they manage pain that lasts more than three months in such patients. Individuals meeting these criteria were invited to participate in the study survey.

This study received an exemption through the institutional review board of the University of California at San Francisco.

Survey

The authorship team with collective expertise in palliative care, oncology, chronic pain, and long-term opioid therapy developed and pilot-tested the survey collaboratively. We used an iterative approach to incorporate feedback and refine the survey (see Appendix 1 for full survey document).

The survey was delivered over several weeks in 2017 and 2018 through the online HIPAA-compliant platform Qualtrics 2015 (Provo, UT). No monetary incentives were provided for participation. When answering questions, participants were asked to consider only patients who are cancer survivors with chronic pain, defined as "[patients] who have a history of cancer but are not at the end of life (life expectancy of more than 6 months), including survivors who have completed cancer treatment, are in clinical remission, and are under surveillance only, in whom you are managing pain that lasts for more than 3 months." Although some definitions of chronic pain in cancer survivors include patients at the end of life, these patients may require a different management approach. Therefore, we did not include them in our definition.

In addition, we defined LTOT as opioids (regardless of the specific drug or whether long or short acting) that are prescribed for individuals with chronic cancer pain for more than 3 months. In addition to basic demographics and practice characteristics, participants were asked about the following aspects of their experiences caring for such patients:

Risk Mitigation Tools. Risk mitigation tool use was assessed by asking participants to indicate which, if any, of these tools they have used to assess or monitor chronic pain in cancer survivors: urine drug screens, opioid treatment agreements, or state practitioner database monitoring programs. In tools they reporting having used, participants were asked to estimate the percentage of patients for whom they use that tool annually or more often.

Opioid Misuse Behaviors. Participants were asked to rate their level of confidence (0 = not at all confident to 10 = very confident) managing each of the following behaviors that could indicate misuse of prescribed opioids[24]: using more opioid medication than prescribed; aggressive behavior without concern for provider or staff safety; methamphetamine use; cocaine use; nonmedical use of prescription benzodiazepines; heroin use; marijuana use; at-risk drinking; taking opioids for symptoms other than pain; asking for an increase in opioid dose; and missing appointments. Although other opioid misuse behaviors exist (e.g., diversion), we intentionally selected these behaviors as our prior work indicates they are frequently identified by providers, are both common and concerning, and therefore are highly clinically relevant.[24] Participants could indicate if they had never encountered the behavior. They were also asked how much time per day they spend managing opioid misuse behaviors (<30 minutes, 30 minutes to one hour, one to two hours, more than two hours).

Management Approaches. Participants were asked to use the same 0–10 scale to rate their level of confidence using a variety of management approaches to chronic pain in cancer survivors: discussing/recommending nonpharmacologic therapies (e.g., physical therapy or behavioral approaches) or nonopioid pharmacologic therapies in conjunction with LTOT; establishing treatment goals before initiation of LTOT, including realistic goals for pain and function; periodically discussing with patients known risks and benefits of long-term opioid therapy and patient and clinician responsibilities managing therapy; discontinuing (tapering) opioid therapy if risks/harms of long-term opioid therapy outweigh the benefits; prescribing naloxone, especially when factors that increase the risk for overdose are present; in a patient with an opioid use disorder, offering or arranging evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies); and discussing/recommending cognitive behavioral therapy. Participants were also asked whether they have had formal training that has prepared them to use the management approach and whether there are systems in place in their clinic or health care system to facilitate their use of the approach.

Addiction Treatment. Participants were asked whether they had a DEA waiver to prescribe buprenorphine and, if so, the number of patients to whom they currently prescribe buprenorphine. They were also asked whether they have access to an addiction medicine specialist to whom they can refer patients.

Guidelines. Participants were asked whether they had read the Centers for Disease Control and Prevention Guideline for prescribing opioids for chronic pain and to provide free-text responses to the question: Please tell us how, if at all, you think the guideline applies to your palliative care practice.

Barriers and Facilitators. Participants were asked for free-text responses about barriers to and facilitators of providing care to cancer survivors with chronic pain prescribed LTOT.

Analyses

Descriptive statistics were used to detail participant characteristics. Quantitative results are presented as frequencies and percentages for categorical variables, and medians/interquartile ranges for continuous variables.

Two authors (J. S. M. and C. S. R.) conducted independent content analyses of responses to the questions about guidelines and barriers/facilitators. One author (N. T.) harmonized and adjudicated these responses, and through additional discussion, new themes were added where appropriate. A code book was developed which one author (C. S. R.) applied to the remaining responses.

Results

Five hundred sixty-two people began the survey. Of those, 313 were excluded for the following reasons: not MD, DO, NP, or PA (30), do not see outpatients (155), do not treat chronic pain in cancer survivors (88), do not manage pain in cancer survivors for more than three months (12), or do not provide additional data (28). Of the 249 eligible clinicians, 221 (89%) answered at least some of the survey questions. One hundred sixty-nine (76%) participants completed the survey's three primary domains (opioid risk mitigation tools, managing concerning behaviors, and management approaches used). Of these 169, 157 also completed the demographic survey, which is reported in Table 1. Information on the three domains in all 169 participants is presented in Tables 2–4, respectively.

Over half of participants were female (59%), and the majority were white (80%). Median age was 48 years (interquartile range [IQR] 39–57), and median duration of time working in current setting was five years (IQR 2–12). Most (83%) were physicians and 15% were nurse practitioners. Of physicians, 54% completed residencies in internal medicine and 20% in family medicine. Participants practiced in academic (56%), private practice (17%), or VA (8%) settings and spent a median of 70% of time doing clinical work (IQR 60–80). Twelve of the 157 (7.7%) completed a palliative care fellowship. All regions of the U.S. were represented (Northeast: 41, 26.8%; Midwest: 49, 32.0%; South: 42, 27.4%; West: 21, 13.7%).

The median number of cancer survivors with chronic pain managed per month was 10 (IQR 15); 18 of 168 providers reported managing 50 or more, and seven reported managing 100 or more. Participants collectively reported managing a total of 3430 cancer survivors with chronic pain. The majority of participants (82%) reported that they had been the prescriber of the opioid, rather than simply serving as a consultant.

Table 1
Participant Characteristics (*N* = 157)

Characteristic	Frequency, % or Median, Interquartile Range
Age	48 (39–57)
Race	
White	126 (80.3%)
Black	5 (3.2%)
Asian	11 (7%)
Other	15 (9.6%)
Gender	
Female	93 (59.2%)
Male	63 (40.1%)
Other	1 (0.6%)
Highest clinical degree	
DO	10 (6.4%)
NP	24 (15.3%)
MD	121 (77.1%)
PhD	2 (1.3%)
Residency training	
Anesthesia	4 (2.5%)
Emergency Medicine	2 (1.3%)
Family Medicine	28 (17.8%)
Internal Medicine	86 (54.8%)
Obstetrics and Gynecology	1 (0.6%)
Other: Oncology	1 (0.6%)
Pediatrics	5 (3.2%)
Physical Medicine and Rehabilitation	1 (0.6%)
Psychiatry	4 (2.5%)
Surgery	2 (1.3%)
Not applicable, not a physician	26 (16.6%)
Completed last postgraduate degree (residency, fellowship, PA/NP degree)	
Less than five yrs ago	39 (25.5%)
More than five but less than 10 yrs ago	31 (20.3%)
More than 10 but less than 15 yrs ago	28 (18.3%)
15 yrs or more ago	55 (35.9%)
Academic rank	
Professor	15 (9.6%)
Associate professor	35 (22.3%)
Assistant professor	44 (28%)
Instructor	6 (3.8%)
Adjunct faculty	2 (1.3%)
N/A, not on faculty	55 (35%)
Current clinical setting (select all that apply, *N* = 153)	
Academic	95 (56.2%)
Private practice	28 (16.6%)
VA	14 (8.3%)
Other	31 (18.3%)
Role with regard to opioid prescribing	
I serve as a consultant only	6 (3.9%)
I serve as the provider who is prescribing the opioid	125 (81.7%)
It depends	22 (14.4%)
Years in current clinical setting (*N* = 153)	5, 2–12

Risk Mitigation Tools

Most participants reported having used urine drug testing (71%), opioid treatment agreements (85%), and practitioner database monitoring programs (94%); only 4% of participants reported using none of these strategies. Participants reported using these strategies in most patients annually or more often

Table 2
Opioid Risk Mitigation Tools Used

Tool	Any Use $N = 169$	Percentage of Patients in Whom Tool Is Used Annually or More Often (Median, Interquartile Range)
Urine drug screen	120 (71.0%)	75%, 25–100
Opioid treatment agreement	143 (84.6%)	80%, 40–100
State practitioner database monitoring program	158 (93.5%)	100%
Other tools (those listed include opioid misuse screening tools such as the Opioid Risk Tool and pill counts)	42 (24.9%)	90%, 50–100
None of these tools	6 (3.6%)	—

(Table 2). Other strategies included screening tools that predict risk of opioid misuse such as the Opioid Risk Tool and pill counts. Some participants reported having systems in place in their clinic to use urine drug testing (58%), taper opioids if their risks outweigh benefits (41%), and offer evidence-based treatment for opioid use disorder including medications such as buprenorphine (27%) (Table 4).

Opioid Misuse Behaviors

Participants had encountered most of the behaviors in question. The most commonly encountered behaviors were missing appointments, marijuana use, and using more opioids than prescribed. Participants were least confident in managing methamphetamine use (6/10) and were more confident (7 or 8/10) in managing all other behaviors (Table 3). Ninety (53%) reported spending more than 30 minutes per day managing these behaviors, and 5% reported spending more than two hours per day.

Management Approaches

Participants reported variable levels of confidence in using the management approaches listed in Table 4. Participants were most confident (7–10/10) in their ability to discuss/recommend nonpharmacologic and nonopioid pharmacologic treatments, but only 82 (49%) had systems in place to facilitate the use of these approaches. Participants were least confident in their ability to prescribe naloxone or manage addiction (5/10), and only 46 (27%) reported having had training—or that systems were in place—to address addiction or naloxone prescribing.

Addiction Treatment

Only 22 participants (13%) had a DEA certification to prescribe buprenorphine, and the mean number of patients managed on buprenorphine was 1.2 (SD 3.2, range 0–15). Sixty-one participants (36%) reported that they had no access to an addiction medicine specialist.

Guideline

Of the 163 participants who responded to the question, 133 (82%) had read the CDC Guideline. Participants were divided regarding how the CDC Guideline applies to their palliative care practice. Some participants felt that the Guideline applied to their patients,

Table 3
Provider Confidence in Managing Concerning Behaviors in Cancer Survivors With Chronic Pain on Long-Term Opioid Therapy, and Number of Providers Who Had Never Encountered the Behavior ($N = 169$)

Behavior	Confidence Managing Behavior Median, Interquartile Range (0 = Not at All Confident 10 = Very Confident)[a]	Participants Who Had Never Encountered Behavior
Using more opioid medication than prescribed (e.g., unsanctioned dose escalation, early refill requests, running out of medication early)	8, 7–9	13 (7.7%)
Aggressive behavior without concern for provider or staff safety (e.g., outbursts of anger, rude or demanding behavior toward providers or staff)	8, 5–8	30 (17.8%)
Aggressive behavior with concern for provider or staff safety (e.g., threats toward staff)	7, 4–8	36 (21.3%)
Methamphetamine use	6, 3–8	65 (38.5%)
Cocaine use	7, 4–8	36 (21.3%)
Nonmedical use of prescription benzodiazepines	7, 5–8	31 (18.3%)
Heroin use	7, 4–8	37 (21.9%)
Marijuana use (regardless of marijuana laws)	8, 7–10	10 (5.9%)
At-risk drinking	7, 5–8	17 (10.1%)
Taking opioids for symptoms other than pain	7, 5–8	13 (7.7%)
Asking for an increase in opioid dose	8, 6–9	14 (8.3%)
Missing appointments	8, 6–9	10 (5.9%)

[a] Among participants who had encountered the behavior.

Table 4
Experience and Confidence With Management Approaches to Chronic Pain in Cancer Survivors ($N = 169$)

Management Approaches	Confidence in Using Approach (Median, Interquartile Range)	Formal Training on Approach (*n*, %)	System in Place in Clinic to Address (*n*, %)
Discussing/recommending nonpharmacologic therapies (e.g., physical therapy, behavioral approaches) in conjunction with long-term opioid therapy	9, 8–10	108 (63.9%)	82 (48.5%)
Prescribing nonopioid pharmacologic therapies in conjunction with long-term opioid therapy	10, 8–10	135 (79.9%)	95 (56.2%)
Establishing treatment goals before initiation of long-term opioid therapy, including realistic goals for pain and function	8, 7–10	112 (66.3%)	84 (49.7%)
Periodically discussing with patients known risk and benefits of long-term opioid therapy and patient and clinician responsibilities managing therapy	8, 8–10	115 (68.1%)	90 (53.3%)
Discontinuing (tapering) opioid therapy if risks/harms of long-term opioid therapy outweigh the benefits	8, 6–9	102 (60.4%)	69 (40.8%)
Prescribing naloxone, especially when factors that increase the risk for overdose (e.g., history of overdose, history of substance use disorder, opioid doses ≥ 50 mg morphine equivalents/day, or concurrent benzodiazepine use) are present	5, 3–8	47 (27.8%)	46 (27.2%)
Reviewing the patient's history of controlled substance prescriptions using state prescription drug monitoring program data to determine whether the patient is receiving controlled substances from other prescribers	10, 9–10	110 (65.1%)	123 (72.8%)
Utilizing urine drug testing to assess for prescribed medications as well as the presence of illicit drugs	8, 7–10	90 (53.3%)	98 (58.0%)
In a patient with an opioid use disorder, offering or arranging evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies)	5, 3–8	61 (36.1%)	46 (27.2%)
Discussing/recommending cognitive behavioral therapy	7, 4–9	66 (39.1%)	64 (37.9%)

at least in part. For example, one participant wrote, "They provide an evidence-based framework for thinking about risk/benefit calculation. They provide facts for teaching patients about risks. They empowered me to taper people down when possible." However, other participants felt the Guideline did not apply to some of their patients. For example, one person stated, "most of my palliative medicine patients have illnesses that will shorten their survival. These guidelines apply to that small percentage whose problems are more chronic than life-threatening." A handful of participants shared serious concerns about the Guideline, for example, "I am very concerned these guidelines will limit legitimate opioid prescribing."

Barriers and Facilitators

Commonly listed facilitators of providing care to cancer survivors with chronic pain prescribed LTOT included access to providers with expertise complementary to palliative care (e.g., addiction, pain) and a team-based approach to caring for patients within the palliative practice, while barriers included a lack of access to providers with complementary expertise and concerns about the attitudes of these providers toward the patients in question. For example, one participant stated, "[Anesthesiologists and psychiatrists in our health care system] also have a markedly different approach and patients report back saying that they were made to 'feel like an addict.'" Participants also identified payment-related barriers such as lack of reimbursement for nonpharmacologic therapies for pain, patient factors such as perceived stigma and low literacy, and time constraints in clinic.

Discussion

We conducted an online study of ambulatory palliative care providers to understand their experiences managing cancer survivors with chronic pain prescribed LTOT. Participants were comfortable with many aspects of chronic pain management such as discussing/recommending nonopioid pharmacologic and nonpharmacologic therapies. However, participants reported challenges including managing certain opioid misuse behaviors and treating addiction. Although some providers reported that palliative care's team-based approach and the presence of other local providers with complementary expertise facilitated these patients' care, many also reported a lack of local expertise about addiction as an important barrier.

It is concerning that encountering opioid misuse behaviors—which may signal an opioid use disorder[24]—was nearly ubiquitous in our study. Even more worrying, however, is that palliative care providers report low confidence managing opioid misuse behaviors and many do not have systems in place to use urine drug testing, taper opioids, or treat opioid addiction. Studies in primary care populations also find relatively low uptake of opioid risk mitigations strategies,[25] and significant barriers to their use.[26] However, prescribing opioids for pain is a core competency of palliative care, but when misuse occurs, many palliative care providers do not have the tools or training to optimally address this well-known complication of opioid prescribing. Most of the clinicians in this study had not been through a palliative care fellowship, highlighting the need to develop continuing medical education in managing opioid misuse and addiction.

Our study also pointed to palliative care providers' relative lack of addiction treatment options. Just as primary care providers have been encouraged to integrate medication therapy for opioid addiction into their practices[27] in recognition of the fact that there will never be enough addiction specialists to meet treatment demands,[28] it would stand to reason that providers in palliative care settings where opioids are commonly prescribed would be encouraged to do the same. However, only a small minority of our respondents had buprenorphine waivers. In addition to increasing waivered palliative care physicians, outpatient palliative clinics could benefit from developing relationships and referral networks that include addiction medicine, similar to current relationships with interventional pain specialists and psychiatrists.

It is notable that some providers did not feel that the CDC Guideline applied to their palliative care practice. While the overall focus of our study was on chronic pain in cancer survivors, which the Guideline specifically mentions is included in its scope, we asked participants about the Guideline's applicability to their overall palliative care practice. Responses reflect the diversity of patients seen in ambulatory palliative care practices and highlight the need for future research on appropriate pain and opioid management strategies for other categories of palliative care patients (e.g., patients with a more limited or uncertain prognosis).

This study highlights an ongoing tension about the field of palliative care's role in chronic pain management. Because pain management is a primary component of palliative care, some palliative care providers have become the de facto source for long-term opioid management for patients with all types of chronic pain, regardless of whether the patient continues to have a serious or life-limiting illness. Indeed, in a national study of ambulatory palliative care practices, half reported that becoming a chronic pain clinic was a major concern.[12] This concern is growing as more providers in general stop prescribing opioids in response to the opioid epidemic. Allowing too many patients with chronic pain to be seen in ambulatory palliative care practices may actually prevent these practices from caring for those with more traditional palliative care needs associated with advanced illness. The workforce shortage of palliative care providers only exacerbates these anxieties.

This study has major limitations. Most respondents were white and were from academic medical centers. Oversampling of these groups may bias our findings. In the Methods section, we provide estimates as to how many people may have received our survey through American Academy of Hospice and Palliative Medicine and Palliative Care Research Cooperative. However, we do not know how many of these people opened their e-mail or met inclusion criteria. Therefore, we are unable to calculate an accurate response rate, which is a common problem in large-scale national online surveys. In addition, we asked providers to self-report their experiences and levels of confidence but did not measure their actions in the clinic or assess the patient perspective. Finally, the definition of chronic pain in cancer survivors is an important challenge in the field. As noted in the Introduction, such chronic pain can be related to the cancer, and is therefore very heterogeneous. Issues raised in this study, such as misuse behaviors and management approaches, may differ in these subpopulations. Consensus on more precise definitions will be critical to future research. Finally, this study's findings are only applicable to ambulatory (rather than inpatient) palliative care.

Palliative care is being asked to provide holistic symptom support for patients with serious illness; for many patients with chronic pain over extended time periods, symptom support may involve prescribing opioids. To be truly effective in delivering safe and effective opioid therapy to those individuals with chronic pain of any etiology, health care systems must provide access to appropriate education, adequate funding for staffing, and necessary resources. In addition, we will need high-quality research to build an evidence base on how best to manage these complex patients with serious illness and chronic pain. This research should include investigating the benefits and harms of LTOT and other commonly used modalities such as benzodiazepines for chronic pain among cancer survivors and how to best diagnose and manage addiction in this population.

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Supplementary data

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