



Review Article

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Empowering Oncologists to Successfully Address Non-Medical Opioid Use During Cancer Treatment: A Review of Best Practices

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Abstract

Non-medical opioid use (NMOU), opioid use disorder (OUD) and substance use disorders (SUD) in patients with cancer present an ongoing and growing challenge to the teams caring for them, especially their most trusted partners, oncologists. NMOU and SUD encompass the spectrum of the use of opioids for emotional and non-physical pain or other symptoms. Currently, there is no literature guiding oncologists in a comprehensive approach towards recognition or management of NMOU and SUD in a patient with cancer. This narrative review aims to provide information on the current literature in this area and guide oncology clinicians in management of NMOU and SUD.

Keywords: Cancer; Opioids; Substance use; Non-medical opioid use; Universal precautions; Prescribing; Opioid use disorder; Pain.

Introduction

Cancer treatment has evolved over the past twenty years with the advent of immunotherapy and the development of cancer targeted therapies. Patients with cancer are living longer and often with chronic pain related to their cancer. Subsequently, healthcare clinicians are tasked with considering the adverse consequences

associated with their cancer treatment, including long-term opioid therapy (LTOT). In a recently published study patients with and without cancer had the same risk for adverse events, such as overdose, from moderate to high dose opioids [1]. Increasing evidence shows the use of LTOT itself carries adverse risks, including immune, endocrine, and mood dysfunction, as well as the potential to trigger or develop NMOU and OUD. The prevalence

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of chronic non-malignant pain in the general population - for which opioids are no longer recommended as first-line treatment - is twenty percent [1]. A history of chronic non-malignant pain, however, places patients at higher risk for severe pain requiring opioids during cancer treatment [2]. Fifty-nine percent of patients with cancer have pain [3], and cancer survivors continue to have a higher utilization of LTOT than other US adults [4].

Opioids remain the standard of care for cancer pain treatment [3] and evidence suggests that patients with cancer are at high risk for SUD, or which we will use interchangeably with the term NMOU [5,6]. NMOU is the use of an opioid for a non-pain symptom, differently from how it is prescribed and includes compulsive use of opioids, opioid use disorder (OUD) or other substances (SUD). In this review, NMOU refers to the range of situations from isolated instances of misuse to patterns of problematic use in SUD. Management of NMOU can be challenging and may benefit from a dedicated team approach [7]. Oncologists, who often are primary opioid prescribers with their patients, can facilitate care of patients who develop NMOU, by identifying when specialist management is indicated. Optimal care utilizes an interdisciplinary team working towards a common outcome, including ongoing engagement with cancer treatment and pain management to minimize adverse consequences on future health.

The Accreditation Council for Graduate Medical Education (ACGME) has recognized the importance of these issues and stated that oncology fellowships must include training on identifying NMOU and recognizing SUD [8]. However, formal curricula on these topics have not been published. Palliative care (PC) is a valuable resource for oncologists seeking specialized pain and symptom management, yet, data shows that PC clinicians have insufficient training, lack of knowledge and low confidence in taking care of patients with SUD [9]. The minority of PC clinicians who have specific primary addiction medicine training report improved competency and clinician satisfaction when taking care of this patient population [10]. Similarly, PC clinicians who prescribe in-office treatment of OUD with buprenorphine reported statistically significant increases in comfort and confidence managing patients with NMOU and SUD compared to PC clinicians who only received training without clinical practice change [11]. These studies suggest that comfort and confidence in managing patients with NMOU and SUD can be improved by dedicated training and practice support. Given the lack of training and confidence that PC clinicians have with NMOU and LTOT despite recognition as experts in cancer pain management, the barriers for oncologists are even greater [10,12,13].

This article aims to describe the current state of knowledge in the treatment of NMOU in people with cancer, empower oncology teams to recognize the spectrum of intermittent NMOU to compulsive and problematic use consistent with SUD, and help oncology clinicians understand potential management strategies. We will incorporate a case-based format in this review of best practices.

Methods

In this narrative review, we utilized the IMRAD (Introduction, Methods, Results, Discussion) Method described by Ferrari [14]. We queried PubMed and Google Scholar databases using combinations of the keywords: cancer, substance use disorder, addiction, non-medical opioid use, opioid use disorder, burnout,

resiliency and education from the last 10 years (n=89,553). The review was further limited to English language, clinical trials, randomized controlled trials, meta-analysis systematic review and narrative reviews, with duplicates removed with total articles included n=48 and additional references identified by a manual search in the reference lists from retrieved articles, n=3 for a total number of included articles of n=51. We present the content in a case-based model.

Case 1

Chris is a 62-year-old with stage IV inoperable pancreatic cancer. They have a large pancreatic mass, as well as metastases in the liver and lungs. Their current treatment is second line, leucovorin calcium (folinic acid), fluorouracil, irinotecan hydrochloride, and oxaliplatin (FOLFIRINOX), and they have received 3 cycles. When they were initially diagnosed with pancreatic cancer, abdominal pain was a significant complaint, and at that time they were started on oxycodone 5 mg by mouth every 4 hours as needed. Their pain was initially uncontrolled on this regimen, and the oxycodone was adjusted to 10 mg every 4 hours as needed. They present today in follow up requesting a refill of oxycodone.

When you ask Chris how they are doing, they report they are “doing well.” They deny pain, nausea, vomiting or constipation. They report loose stools after their treatments, but these are controlled with antidiarrheal medications. They report they do not sleep well at night and use their oxycodone mostly at nighttime to help with sleep. Chris also reports that at times they feel anxious and use their oxycodone as needed for their anxiety. They are taking 1-2 oxycodone 10 mg per day.

Discussion: This case illustrates the nuance around opioid use and why it is important to consistently ask how, when and why patients are using their opioids. Chris is using their oxycodone for sleep and anxiety and not pain which is defined as non-medical opioid use (NMOU). Patients with cancer are at equal if not higher risk of NMOU, with rates reported as 20% [15,16]. Patients with cancer may have multiple other symptoms besides pain, in particular anxiety, insomnia or difficulty coping with their diagnosis that may lead to use of opioids to manage these non-pain symptoms. This situation may create a moral dilemma: is treating the patient with opioids justified when they are not taking the opioid for the intended purpose? Ideally, exploring symptoms more fully, appropriately addressing underlying symptoms outside of pain, and adequately communicating reasoning for management recommendations can help patients and families feel heard and cared for and reduce risk of patients using opioids inappropriately.

Assessment for first time opioid therapy in cancer patient:

In an effort to ensure patients with cancer appropriately receive opioids when indicated, patients with cancer-pain, or receiving palliative care services, are excluded from the updated 2022 CDC chronic pain guidelines [17]. Patients with cancer however, are not excluded from universal safe opioid prescribing (Table 1) [18]. While there has been documented evidence that urine drug screens and pill counts affect cancer disease trajectories they do help with identifying patients in need of more support [7,19,20]. Insurance companies have broadly applied the CDC guideline principles to all patients receiving opioid therapy in varying degrees, such as requiring prior authorizations for long-acting opioids [21], documentation of opioid agreements, and regular

urine drug screens and risk assessments. This can both support safe opioid prescribing and act as a barrier to opioid prescribing if clinicians do not have the resources to complete the screening or support for completion of prior authorizations [22].

Table 1: Safe practices on opioid use, storage and disposal.

Safe utilization	<ul style="list-style-type: none"> ● Use only medications prescribed for you ● Do not share medications ● Follow prescriber instructions carefully ● Do not adjust medications without instructions from prescriber ● Do not stop taking pain medications without talking to your medical provider ● Do not take alcohol or other illicit drugs when taking pain medications. Inform your prescriber if you do ● Update your medication list regularly with your prescriber ● Do not drive a vehicle or operate heavy machinery when taking pain medications ● Use only one prescriber to manage your pain medications
Safe storage	<ul style="list-style-type: none"> ● Store your pain medication in a safe place that is not visible to other people. Keep pain medications away from young children, adolescents, and pets ● Place pain medications in lockboxes ● Keep track of your medications in a pain/medication diary or log ● Do not tell others that you are taking pain medications ● Report lost or stolen medications to law enforcement personnel
Safe disposal	<ul style="list-style-type: none"> ● Use take back programs for unused pain medications via local pharmacies and law enforcement agencies ● Dispose of unused or expired medications using several methods: mix with undesirable material before disposing in a sealed container; flush in the toilet. Fold sticky ends of fentanyl patch prior to disposal ● Visit the DEA website (www.deadiversion.usdoj.gov) to look for the DEA prescription ● Take-Back day in your area

All medication prescribing whether opioids, antibiotics, antihypertensive, or other medications should be based on a detailed clinical history, physical exam, and discussion of risks and benefits with the patient. Opioid prescribing is under more scrutiny than other DEA regulated medications due to the opioid crisis and risk of harm.

Increased adoption of routine screening for distress and suicidal ideation may facilitate identification of patients at-risk for NMOU. The incidence of mental health disorders among patients with cancer is estimated at 35-40% [23] but these symptoms may go undetected unless specifically assessed. As of 2015, universal distress-screening practices have been mandated at all Commissions on Cancer-accredited cancer centers as part of standard of care [24]. Incorporation of brief screening tools for distress, depression and anxiety such as the NCCN Distress Thermometer [25], Patient Health Questionnaire (PHQ)-2 [26] or Generalized Anxiety Disorder (GAD) 7 [27] may elucidate underlying mood and anxiety symptoms contributing to NMOU, and create opportunities for conversations regarding symptom patterns and other possible interventions.

From the vignette, Chris has more anxiety in the evening that affects their sleep but also has periods of feeling anxious during the daytime. They are taking their oxycodone to help with sleep in the setting of anxiety. In this example, Chris was aware that they were using their oxycodone for non-pain-related purposes. In many cases, trying to distinguish between pain versus non-pain

distress can be difficult due to the reciprocal nature of pain, anxiety and distress whereby the presence of anxiety and distress can heighten the subjective experience of pain, which can then exacerbate anxiety.

Next steps should include further assessment of Chris's mood and sleep symptoms, including prior management strategies, if any, to guide further treatment options and to align with the patient's treatment goals. Other options to offer may include antidepressant medications with anxiolytic properties, anxiolytic medications (however should be avoided with opioids as the combination can lead to sedation or other adverse effects), as well as non-pharmacologic approaches such as cognitive behavioral psychotherapy, relaxation training, and meaning-centered approaches [28].

Risk assessment tools for NMOU/SUD: Multiple assessment tools are available to identify patients at risk of opioid misuse, none of which have been validated in a palliative care population. General screening tools prior to a first prescription of a controlled substance include: the Opioid Risk Tool (ORT), Opioid Risk Tool - Revised (ORT-R), Screener and Opioid Assessment for Patients with Pain (SOAPP), Concurrent Opioid Misuse Measure (COMM), Cutting down, Annoyance by criticism, Guilty feeling, Eye-openers (CAGE) [29,30]. These are not tools to deny patients a prescription, rather to tailor care to the needs of the patient [31]. Screening tools can be a useful indication of those patients that may need more support earlier in the course of treatment. Healthcare pro-

viders eliciting this history should do so with open-ended, non-judgmental questions to encourage open conversation, and do so universally to limit implicit bias in choosing which patients to screen. Figure 1 provides an algorithm to help guide evaluation and management of opioid therapy including suggestions for frequency of monitoring with risk scores, urine drug screens, and when to utilize the support of the interdisciplinary team.

Case 2

Sam is a 37 year-old with stage 3a squamous cell carcinoma of the tongue diagnosed after presenting with odynophagia. They were prescribed oxycodone by their primary care provider 3 days ago, 30 tablets total. As a new patient to their primary care provider, they did not disclose that they had treatment for SUD in the past. They are calling the oncology office in pain asking for a refill. They are asked to come in to be evaluated. Sam is asked to give a urine sample for drug screen and results show presence of morphine, oxycodone, fentanyl and cocaine. The oncologist knows that prescribed oxycodone does not have metabolic products that would be detected as morphine, fentanyl, or cocaine on toxicology testing. The oncologist is worried that Sam is using non-prescribed substances suggesting that their SUD is active again, and is unsure how to proceed.

Discussion: Although the case above gives minimal information on the patient’s pain, past history, and their current situation, an oncologist may find themselves confronted with a similar scenario. At this point, the oncologist is right to be concerned for re-activated SUD, though this one instance of calling for an early refill and one urine toxicology test with unexpected findings alone cannot be interpreted as indicating an SUD diagnosis. Recognizing a concern for SUD is critical for all clinicians who prescribe opioids in order to comprehensively treat patients. Patients with cancer and OUD require treatment for both conditions concurrently. Patients with OUD and cancer have a mortality that is 2.5 times the rate of patients without an OUD [32]. Of note, patients with cancer prescribed moderate or high dose opioids are equally at risk of overdose to patients without cancer [1]. It has only been in the past few years that the intersection of OUD and cancer care has gained more traction in the literature, and within the National Comprehensive Cancer Network (NCCN) guidelines [34].

Recognizing the signs of NMOU/SUD: As oncologists who may often initiate and maintain opioid therapy, it is crucial to identify signs that a patient with NMOU or SUD. SUDs are characterized by the ongoing compulsive use of substances despite harm. While SUD are formally diagnosed by DSM5 criteria [42], they are more easily remembered through the 4C’s mnemonic [43] (Table 5):

While a formal diagnosis of SUD using DSM-V is out of the scope of non-addiction clinicians, best practice in the current era includes familiarity with assessing the 4C’s to guide management decisions for further specialty addiction assessment.

It is important to remember SUDs are chronic, treatable conditions, like diabetes or hypertension, whose natural courses may include periods of increased disease activity, and that these periods are not signs of treatment failure or lack of motivation to be healthier. Similarly, when patients with SUD experience increased disease activity, such as a return to use of non-prescribed substances, or using more opioids than prescribed, clinicians should

Table 2: 4C’s for evaluating patient for possible substance use disorder.

4C’s	Examples
Loss of Control	Repeated requests for early refills or being unable to make a prescription last
Compulsive use	Use of substances despite prior accidental overdose or use despite excess sedation
Consequences of use	Disruption of roles or duties with work, parenting, hobbies, and relationships including use despite concern or conflict with family or clinicians over use
Cravings to use	Wanting the feeling of relaxation from substance when stressed

similarly view these events as indications for increasing intensity of care, such as more frequent visits and shorter prescription fills. It would not be compassionate or recommended to discharge a patient from the practice, which would be punishing them.

Approach to the cancer patient with pain and NMOU/SUD:

Oncologists commonly worry that a patient’s cancer pain will be undertreated [22]. The question remains how to meet the patient’s needs during cancer treatment safely and effectively when there is concurrent SUD [35]. Specialists in addiction medicine, pain management and palliative care all have their respective niches in management of these patients, and while some specialists find space to practice comfortably at the intersection of cancer pain and SUD, many healthcare professionals do not feel comfortable doing so if given other options [11]. Finding an interdisciplinary team that works together towards the goal of meeting all of the patient’s needs remains the ideal scenario, and this may occur in the form of a symptom management “tumor board” using an interdisciplinary team. National working groups that give space to case discussions, access to specialists, and learning about the intersection of pain and SUD can include programs such as Managing Addiction and Pain in the Palliative Care Interdisciplinary Team (MAPFIT) [36]. This team has improved the comfort level of healthcare professionals who work with patients with SUD and serious illness. The National Clinician Consultation Center provides a national Substance Use Warmline 1 (855) 300-3595 staffed by addiction specialists for healthcare providers to call for individual case support and resources when there is concern for SUD.

Oncology, addiction medicine and palliative care clinicians all value communication, team-based care, attention to quality of life, social and structural determinants of health and ethical principles [37]. Patients with SUD deserve specialized services to optimize treatment of their SUD, management of suffering and improvement in quality of life. In health care centers that do not have access or only limited access to these resources, oncology teams are faced with managing symptoms or illnesses without adequate support. A recent modified delphi study performed among specialists in addiction medicine and palliative care clinicians attempted to identify primary addiction medicine skills that would be important to include in palliative medicine training. These skills are also vital for oncology clinicians to obtain, especially when they are providing primary palliative care. Please see Table 3 for further detail [38].

Table 3: Addiction medicine skills appropriate for oncologists prescribing opioids.

<p>Medical knowledge</p> <p>Strategies for preventing diversion Understand non-medical opioid use Define DSM-V criteria for OUD</p>
<p>Patient care</p> <p>Manage opioid overdose Practice risk mitigation Patient-centered decisions about opioid prescribing Manage opioid withdrawal</p>
<p>Communication</p> <p>Use patient-centered and non-judgmental language Establish rapport</p>
<p>Professionalism</p> <p>Recognize and address stigma</p>
<p>Systems-based practice</p> <p>Coordination of care with addiction medicine specialists Refer patients for behavioral interventions</p>

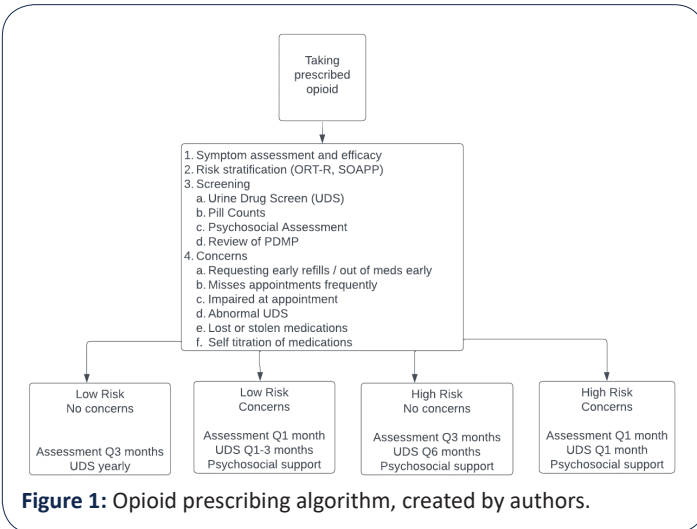


Figure 1: Opioid prescribing algorithm, created by authors.

Communication strategies in patients with NMOU/SUD: Few interventions have been dedicated to the intersection of cancer and NMOU in the medical literature, with all based in larger clinical centers [7,19,32]. Guidance for clinicians on how to approach these conversations with concomitant NMOU and cancer care is lacking and not easily extrapolated from the chronic non-cancer pain literature. Shared decision making tools and applications have gained traction in the non-cancer pain realm focusing on the patient’s goals and creating a space to come together towards a common goal [33,34]. Shared decision making is only one part of the puzzle of success. The PARTNERS motivational interviewing framework is a compassionate communication approach that may be used with a patient who has NMOU and concerning behaviors. The goal is to create a safe, empathetic space to improve satisfaction and rapport during the patient and clinician encounter, reducing confrontational or stressful interactions. The components of the intervention include: understanding things from the patient’s perspective, avoiding judgment, discussing risks, giving tender loving care to build trust over time, naming emotions, eliciting the patient’s own reasons for change and empowering them, reframing beliefs about barriers, and emphasizing need for safety in the future (Table 4) [19]. The framework recommendations in-

clude five components: preparing with intention, listening closely, setting an agreed upon agenda, connecting with the patient and celebrating successes, and lastly, notice the emotions [34].

Table 4: PARTNERS: A structured motivational interviewing framework for addressing NMOU.

PARTNERS	
P: PERSPECTIVE	<ul style="list-style-type: none"> WHAT SHOULD WE BE TRYING TO ACHIEVE WITH YOUR PAIN CONTROL? WHAT’S MOST IMPORTANT TO YOU? WHAT WORRIES YOU?
A: AVOID JUDGEMENT/ALIGN	<ul style="list-style-type: none"> THIS IS A VERY DIFFICULT SITUATION I DO NOT THINK YOU ARE A BAD PERSON, AND I WOULD LIKE TO HELP YOU GET BETTER I WILL NOT ABANDON YOU
R: RISK	<ul style="list-style-type: none"> I WORRY YOU COULD HARM YOURSELF OR OVERDOSE I THINK THESE MEDICINES ARE MAKING YOU FEEL WORSE (MORE FATIGUED, DEPRESSED, ETC) AND ARE HURTING MORE THAN HELPING
T: TENDER LOVING CARE/TRUST	<ul style="list-style-type: none"> I CARE ABOUT WHAT HAPPENS TO YOU WE’VE COME SUCH A LONG WAY
N: NAMING	<ul style="list-style-type: none"> I CAN SEE THIS IS UPSETTING TO YOU IT MUST BE FRUSTRATING TO FEEL TIED TO A MEDICATION
E: EMPOWER/ELICIT	<ul style="list-style-type: none"> YOU ARE RESILIENT AND HAVE BEEN THROUGH A LOT I’M SO GLAD YOU ARE HERE TODAY TO ADVOCATE FOR YOURSELF
R: REFRAME	<ul style="list-style-type: none"> WHAT BRINGS JOY TO YOUR LIFE? IT SEEMS YOU ARE SUFFERING, BOTH PHYSICALLY AND EMOTIONALLY, WE ARE COMMITTED TO HELPING YOU WITH BOTH
S: SAFETY	<ul style="list-style-type: none"> I CARE ABOUT YOU AND YOUR SAFETY LET’S WORK TOGETHER TO MAKE A PLAN THAT IS BOTH EFFECTIVE AND SAFE

When to refer to a specialist SUD/OUD: Oncologists may get to a point in the care of their patient where they feel out of their scope managing a patient with SUD and they should be aware of what specialty SUD treatment is available in their area. Some regions may have limited specialists and oncologists may assume the primary treatment of a patient with SUD/OUD. Approaching care for SUD/OUD as a chronic illness can help patients stabilize and remain engaged in care for other conditions, like cancer [35]. Overwhelming evidence supports the use of medication assisted therapy (MAT), such as methadone and buprenorphine, as medication for the treatment of opioid use disorder (MOUD) to reduce overdose and mortality [36], and improve treatment retention and outcomes. Buprenorphine is the only FDA approved medication for office-based treatment of OUD, and as of December 2022, is available for all clinicians with DEA licenses to prescribe without an X-waiver. As a partial opioid agonist, buprenorphine is also FDA approved for the treatment of pain, which makes it a unique opioid in the treatment of cancer-related pain for patients with NMOU and OUD. Integrating office-based buprenorphine treatment into oncology practice ensures timely access to evidence-based care, reduces stigma associated with SUD treatment, and allows patients to receive treatment in a familiar and accessible setting. Resources are growing tailored to the initiation, management, and use of all formulations of buprenorphine (transdermal patch, buccal, sublingual, and IV) in the oncology and palliative care literature [37,38].

Recognizing and addressing stigma of NMOU/SUD: Historical stigma towards NMOU and SUD remains omnipresent in healthcare, resulting in punitive approaches to SUD, gaps in access to

life-saving buprenorphine (less available in communities of color), and race-based disparities in pain and SUD treatment (lower treatment of both for patients of color) [39]. Unfortunately, health care providers continue to use stigmatizing language frequently (in the scholarly literature, in clinical notes, in education) [40], and there is powerful intersectionality with race, gender, and age. Specialists offering buprenorphine treatment is one way to

provide anti-racist care [41,42]. Choosing to use accurate, person-first language is another way to shift practice culture. Subtle differences in the words and phrases we use can create or dispel stigma and have profound impacts on our patients, clinical care, and colleagues. Table 6 shares preferred language when talking about NMOU.

Table 5: Preferred patient-centered language for patients with NMOU/OD.

Patient-centered language	Stigmatizing, Non-preferred language
Substance use disorder (SUD), opioid use disorder (OUD), alcohol use disorder (AUD), unhealthy/risky use (preferred to misuse), non-medical use, addiction (which can be used to mean severe SUD per the DSM-V	Substance/drug/alcohol abuse, drug/drinking problem. Dependence and addiction are both used by patients, however dependence clinically refers to physiologic withdrawal reactions when a substance is stopped that may occur without a SUD and should not be used by clinicians as a synonym for SUD/addiction
SUD is a chronic condition characterized by the compulsive use of a substance despite harmful consequences.	Addiction is a choice, life-style, moral failing, lack of willpower, or personal failure
Person with a SUD, person with an addiction, person who uses drugs, person with injection drug use or person who injects drugs (PWID)	Addict, drug/substance abuser, person with a drug habit, alcoholic, IVDU (IV drug user), drug-seeker
Person not actively using, person in remission from SUD, person in recovery	Clean, former addict. Sober is generally not used by clinicians, though some patients use it themselves.
Substance present/not present in urine screen	Dirty/clean urine. Urine positive or negative for a substance are also not preferred due to being confusing.
Medications for OUD (MOUD), Medication for addiction treatment (MAT), Opioid agonist therapy (OAT)	Opioid replacement therapy, opioid substitution are not preferred as they stigmatize MOUD as ‘replacing one addiction with another.’ Medication assisted treatment is not preferred because MOUD alone can save lives and no other treatment may be needed for some patients.
Undertreated pain, risky opioid use (e.g. self-titration of meds, etc.) related to undertreated pain (instead of pseudoaddiction) Using opioids to treat non-pain symptoms (NMOU) instead of chemical coping	Pseudoaddiction, chemical coping (these non-diagnostic euphemisms are applied inconsistently and are subject to unconscious bias in application to patients by, for example, being used by clinicians to describe patients with OUD, for whom the clinician does not feel comfortable ‘labeling’ as having OUD. This stigmatizes OUD and can prevent appropriate treatment) (23)
Opioids	Narcotics (which is used in a legal context to refer to multiple classes of illegal substances not just opioids)

Recognizing patient trauma experiences and NMOU/SUD:

Trauma and its effects are often invisible to the eye; however, awareness of risk factors and inclusion of Trauma Informed Care (TIC) can increase ability to provide person centered care with improved outcomes in the medical setting. Providers in medical settings can avoid unintentionally re-traumatizing patients with the use of “universal trauma precautions,” which is the assumption that every person has experienced adverse events and could be at risk of becoming re-traumatized. Integrating universal trauma precautions into practice also encourages collaboration with patients which leads to a higher level of and trust [43]. Adverse childhood experience study (ACEs) provides evidence that stressful childhood events influence mental health and physical health. ACEs such as abuse, neglect, poverty, food insecurity, violence, victimization, substance misuse in the home, incarceration of a family member, or witnessing intimate partner violence, have all been linked to adult morbidity and mortality. As a result, ACEs increase the risk for these outcomes, substance use, chronic health conditions, depressive disorder, cancer, coronary heart disease, stroke, diabetes, kidney disease, chronic obstructive pulmonary disease, asthma and obesity [44]. Awareness of possible challenges and integrating the principles of TIC into daily practice can reduce the possibility of triggering and unintentionally re-traumatizing individuals [45]. The five guiding principles of TIC are safety, choice, collaboration, trustworthiness, and empowerment. By creating a

physically and emotionally safe environment, establishing trust and boundaries, supporting autonomy and choice, creating collaborative relationships and participation opportunities, and using a strengths and empowerment-focused perspective to promote resilience are ways in which the principles of TIC work to reduce re-traumatization and promote healing [46]. Team education and collaboration using TIC are key to successfully engaging with patients and promoting quality health care experiences with vulnerable people [47].

Clinician wellness and self care in caring for patients with NMOU/SUD:

The prevalence of burnout for physicians has now reached epidemic proportions with a prevalence as high as 50% or greater, with oncology being higher risk [48]. Physicians have been shown to experience three primary barriers when working with patients with NMOU or SUD: inadequate knowledge and training, limited external community support and resources, and an incomplete context for understanding concerning patient behaviors. 70% of physicians reported feeling negative emotions when working with patients who had NMOU [49]. Increased contact with patients with NMOU was significantly and positively associated with burnout scores [49,50]. The negative relationships between bias, physician burnout, and stress induced by working with patients with NMOU and physicians’ willingness to work with this patient population are each exacerbated when contact with

patients with NMOU is high [50]. In one study of physicians who attended an educational conference that discussed NMOU, most clinicians expressed concerns about under-detection and under-treatment of pain among patients with cancer. There were self-reported knowledge and confidence deficits in caring for patients with cancer with NMOU. Seminar participation was associated with an increase in the number of participants with self-perceived knowledge and confidence [51]. Although intervention studies have shown promise for the role that increased contact may have in reducing stigma toward patients with NMOU, these interventions may not be appropriate for physicians who are experiencing strain or who hold preexisting negative perceptions or attitudes toward this patient population. Future interventions may need to target bias, burnout, and stress, in addition to facilitating contact, to increase physician willingness to work with these patients [50].

Conclusions

Patients and clinicians may both bring preconceptions about opioid use and SUD into the patient provider relationship. When patients are experiencing a cancer diagnosis, they may also experience NMOU or SUD. Partnering with a comprehensive interdisciplinary care team, as well as the patient and their caregiver, may increase successful management of NMOU or SUD while undergoing cancer treatment. The tools that guide clinicians include safe opioid prescribing guidelines, the PARTNERS communication framework, recognizing SUD (4 C's), and offering buprenorphine as treatment for comorbid pain and NMOU. Recognition and understanding remains a fundamental part of caring for patients with NMOU and SUD and preventing burnout. Communication and consultation with palliative care, addiction medicine colleagues and following best practices increases clinician comfort and in turn improves patient outcomes.

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