DISCUSSION PAPER

Best Practices, Research Gaps, and Future Priorities to Support Tapering Patients on Long-Term Opioid Therapy for Chronic Non-Cancer Pain in Outpatient Settings

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Introduction

Ensuring high-quality, respectful, and appropriate management of chronic non-cancer pain (CNCP) in the context of the US opioid crisis is a critical and complex endeavor. At the end of the twentieth century, opioids became the standard approach to treating CNCP. However, the evidence supporting the use of opioids in managing CNCP is weak, and there is now strong evidence that chronic opioid use among CNCP patients can be detrimental, particularly at high doses [1,2,3]. Potential harms of reliance on prolonged opioid use to treat CNCP include overdose and death [2]. As a result of opioid prescription practices, our health care system must find new ways to effectively treat patients with CNCP who have a history of long-term opioid therapy (LOT). In some cases, these "legacy" patients are at increased risk for morbidity if they are taking other high-risk medications in combination with opioids [4]. Unfortunately, data regarding the best way to proceed with care for these patients in terms of opioid maintenance or tapering are lacking [5]. This paper focuses on key decision points and available evidence to support tapering strategies for specific patient populations of long-term opioid use being treated for CNCP in the outpatient setting. Given the significant knowledge gaps that exist, this paper will also identify priorities for future research that will generate the evidence required to fully support patients and clinicians through what can be a challenging process.

The authors' approach in this discussion paper is to analyze the evidence for different forms of risk reduction regarding opioid use and pain management. The authors emphasize that any medical action taken should involve as much patient buy-in as possible and should not be driven by rigid opioid dose cutoffs and misinterpreted guidelines. The authors of this paper also support sustaining patients on their existing medication at its existing level if patients are continuing to benefit from use, are not experiencing significant side effects, and express the desire to remain on their current medication as opposed to pursuing a taper. In such cases, the risks of a taper would outweigh the potential benefits. For patients who continue to use opioid prescriptions, naloxone co-prescription should be included based on assessment of prescribing risk factors and applicable federal and state guidelines.

Clinical pain management has historically consisted of an overreliance on opioids, which has resulted in the unintended consequence of opioid misuse at epidemic levels. The dangers of opioid use require health care providers to actively assess risk, particularly in the context of LOT, which is often used for CNCP management. Optimal pain management involves mitigating the pain experienced by the patient while minimizing the risk of opioid misuse and harm, including development of an opioid use disorder (OUD). When the risks are greater than the benefits for a patient who has taken opioids consistently enough to develop tolerance, a gradual taper of opioid use may be appropriate and most beneficial for the patient. An opioid taper is undertaken primarily to ensure the safety of the patient, not to improve pain or functioning. Incidentally, many patients do not experience adverse effects during a taper, and some experience pain relief and increased functioning [5]. Unfortunately, tapering long-term opioid analgesics is a practice area in which clear evidence and authoritative guidance remains limited. Recent reports of patients being abruptly discontinued from their opioid therapy and left at risk for accentuated withdrawal symptoms demonstrate the clear need for more research-based guidance. The authors of this paper do not endorse or support abrupt tapering, except in extreme circumstances such as pending patient harm, and similarly find patient "dumping" (i.e., sudden discontinuation of care) unethical. As stated earlier, the authors of this manuscript believe that the decision to taper is ultimately based on whether the risks of a taper are less than the potential benefits a taper could confer.

In an important first step to provide research-based guidance to clinicians who are initiating tapering protocols and to assist legacy patients who could benefit from tapering, the US Department of Health and Human Services (HHS) recently released its *Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics* [6,7]. The HHS Guide identifies and summarizes existing evidence-based clinical practices and guidance related to opioid dosage reduction or discontinuation, and importantly, calls out the urgent need for more research to define optimal strategies for opioid tapering. Building on the work of the HHS Guide, this paper will assess risk reduction strategies by expanding on current best practices while specifically addressing evidence gaps and putting forth areas for future research that should be developed to support evidence-based tapering strategies.

There is a need for evidence-based tapering strategies to support the diversity of CNCP patient populations. The complexity and range of patients who take opioid analgesics cannot be underscored enough—no two patients are the same, and tapering protocols often vary widely from patient to patient. Tapering requires an established relationship between doctor and patient, an individualized assessment of all risks and all benefits, and patient consent and cooperation. For the purposes of this paper, the authors have focused on select groups of patients who are taking opioid analgesics for CNCP, are being treated in an outpatient setting, and do not have OUD or other substance use disorder (SUD). This focus is due to the expertise of the authors in this area, and because the majority of tapers for those with chronic pain will happen in an outpatient setting. The authors do not minimize the complexity of patients who are prescribed opioids for acute pain or who are being treated in an inpatient setting. While an in-depth discussion of acute pain management is outside the scope of this manuscript, the authors note that an individual's response to opioid prescribing in the postoperative period is variable, and many patients will develop tolerance after several days, which would result in withdrawal symptoms if the opioids were then abruptly discontinued [8]. Therefore, structured tapers for patients receiving opioid therapy for acute pain should be considered. Beyond prescribing the lowest and shortest opioid course that is effective for managing acute pain, protocols for tapering post-surgery, including the use of multidisciplinary and patient-specific tapering protocols as soon as possible is important, and certainly before opioid tolerance has built up [9]. After opioid tolerance has been established, a taper becomes much harder. Further, similar to the treatment of chronic pain, providers should consider individual patient circumstances such as behavioral health issues, polypharmacy, and patient preference in the treatment of acute pain and subsequent tapers. For more information on clinical practice guidelines for prescribing opioids for acute pain, providers can refer to the National Academies of Sciences, Engineering, and Medicine publication *Framing Opioid Prescribing Guidelines for Acute Pain: Developing the Evidence* [10]. The authors recognize that more research is needed

on initiating tapers for all patients in all settings, and that this manuscript is just a single step toward a field that requires more research so that tapers, when indicated, can be practiced in an evidence-based and safe manner.

This paper focuses on the best practices based on available evidence and research gaps across the key steps in the tapering process:

- Review of indications for an opioid taper
- Shared decision-making and patient engagement when tapering opioids
- Selecting the speed of an opioid taper
- Considerations and potential approaches when tapering opioids
    - Use of non-opioid pharmacological therapy and non-pharmacological therapies to ensure comprehensive pain management
    - Managing withdrawal symptoms
    - Approaches to managing a challenging taper
    - Tapering a patient who is co-prescribed opioid analgesics, benzodiazepines, and other central nervous system depressants
- Priorities for future research

Please note that the National Academy of Medicine held a webinar on July 22, 2019, that was titled "Tapering Guidance for Opioids: Existing Best Practices and Evidence Standards." This webinar was used as source material for this discussion paper. The statements, evidence gaps, and research priorities stated in this discussion paper have not been endorsed by the speakers on that webinar, unless they are listed as authors of this paper. Attribution for and endorsement of all material contained within this discussion paper rests solely with the listed authors.

Review of Indications for an Opioid Taper

Patient-Initiated Tapers

New or established patients already on LOT may ask their provider for assistance in tapering and/or discontinuing their use of opioids. The circumstances surrounding such requests may include patient concern about the use of opioids after learning about the potential adverse effects of opioid therapy, a decision that their LOT is no longer necessary for management of their CNCP, or an adverse event from using opioid therapy (like an accidental overdose or an injury). It is the belief of the authors of this manuscript that, when presented with such a patient request, it is important that the provider understand the motivation for the patient's request for assistance in a taper, assess what adjunctive therapies may be useful to assist the patient in that process, and then rapidly engage the patient in setting up a taper while the patient is motivated and willing to proceed. As this practice is uncommon, the majority of this manuscript focuses on provider-initiated tapers [11].

Provider-Initiated Tapers

A health care provider, upon consultation with the patient, may suggest initiating a taper if the risks of LOT appear to outweigh the benefits of treatment or if the condition for which opioids were originally prescribed subsides. A taper may be particularly advantageous for patients under the age of 30 who are experiencing significant negative effects from LOT, as early intervention will lessen the impact of opioid physical dependence with the attendant long-term risk of complications, including overdose and death [12]. Tapering may be considered if the patient has an inadequate pain response; when functionality does not improve with moderate increases in opioid dose; if the patient is experiencing unbearable side effects; or if the treatment is harming the patient's ability to function physically, emotionally, or socially. This decrease in functionality could manifest in many ways, including falls, accidents, worsened mental health comorbidities such as anxiety and depression, or excessive fatigue [13]. These indications can be identified by either the patient, a patient's loved ones, or the provider. In regards to identifying decrease in functionality, the 2016 CDC *Guideline for Prescribing Opioids for Chronic Pain* [14] notes that opioid prescribing in patients receiving LOT for CNCP is validated when those patients experience at least a 30 percent improvement in pain and/or functional assessment scores. Validated tools exist that can assist providers in assessing improvement or decrease in functionality, including assessments of pain intensity, interference with enjoyment of life, and interference with general activity as measured by the PEG tool [15]. It should be noted, however, that the 2016 CDC Guideline indicates that the 30 percent improvement in pain and/or functional assessment scores are provided only as a guideline, and individual prescribing patterns should always be guided by an individualized and on-

going risk and benefit assessment conducted by the prescribing physician. Tapering should also be considered in patients who are taking additional medications that affect the central nervous system or illegal drugs, or whose disease process may be hindered by chronic opioid use, such as those with pulmonary deficits and with special populations, such as youth and pregnant women.

Provider-initiated tapers should be seriously considered if the patient is unable to follow the terms of the agreed-upon pain management plan and/or contract—both for the safety of the patient and for others because of the risk of misuse, overdose, or diversion of the prescribed opioid. If a provider identifies or suspects that a patient has an OUD or SUD, the provider should perform a comprehensive assessment using such tools as drug screens, pill counts, and substance abuse screening tools to determine how opioids and any other relevant substances are contributing to a patient's risk. Discussing illegal drug use or intentional misuse of prescription drugs can be a difficult topic for patients who may fear stigma and/or punishment for disclosing their drug use. To ensure an accurate patient response to SUD questions, the provider should query the patient via a nonthreatening, supportive approach and gauge the patient's ability to honestly complete the assessment. Assuring the patient of confidentiality as well as the physician's desire to help is important to the assessment process [16]. The provider's analysis should take into account multiple SUDs, including alcohol use disorder, as well as the possibility of OUD specifically [12].

In addition, a taper should be strongly considered if the patient is taking other medications (or alcohol) that increase the risk of opioid overdose, such as benzodiazepines and gabapentins [17]. Providers may also explore tapers for patients on high opioid dosages, often defined as greater than 90 mg morphine equivalents (MME) per day, because a higher dose of opioids is associated with a greater risk of overdose [12,14]. However, the benefit of routine tapering solely to reduce dosages below this threshold without evidence of harm has not been established.

Special consideration should be given to youth exposure to opioids, when brain development is not complete and the potential for addiction is higher. Special consideration should also be taken for women who are pregnant because of the risks that opioid use and withdrawal pose to the mother and fetus. If the mother is taking opioids while pregnant, there is a chance that the newborn will develop neonatal abstinence syndrome (NAS), which describes the effects of opioid withdrawal on the baby after birth. While the possibility of NAS is a significant concern, opioid withdrawal during pregnancy may lead to spontaneous abortion and premature labor [14]. Thus, providers should be extremely cautious and seek relevant expertise when initiating tapers in pregnant patients.

Current Gaps in Research

In reviewing the available evidence regarding tapering indications, further research is needed to identify which medications, when taken in combination with opioids (besides benzodiazepines and hypnotics), increase the risk of accidental overdose and should prompt a provider to explore a taper. Similarly, evidence gaps exist regarding which coexisting medical conditions (besides kidney or liver disease) could make continuation of opioid therapy dangerous and should prompt a provider to explore a taper. In the present practice environment, a bias exists on the part of many—including providers, insurers, health systems, and regulatory agencies—that most patients on LOT for CNCP should be tapered and opioid use should be discontinued. As proposed in the aforementioned CDC prescribing and HHS tapering guidelines, the use of risk assessment tools may better define the patient in need of tapering based on the increased risk of adverse events. The authors of this paper propose that better tools are needed to help determine those patients for whom tapering should not be attempted (or at least postponed) with such tools facilitating the documentation for such decision-making.

Shared Decision-Making and Patient Engagement When Tapering Opioids

Irrespective of whether a taper is patient-initiated or provider-initiated, every taper should be initiated through a supportive, shared decision-making strategy in which the patient is fully aware of the reasons for the taper, the protocols that the taper will include, and how the patient will likely feel at each stage of the taper [18]. Patient concerns must be addressed prior to initiating the taper and throughout the tapering process, as patient buy-in may lead to improved efficacy of the taper and extend compliance. Primary care providers have reported that including patients in tapering decisions has helped get reluctant patients on board with tapering [19]. Initiation of a tapering process may be very stressful for the patient. Patient concerns about tapering include the potential for worsened pain and function and development of withdrawal symptoms,

among others. All of these concerns are valid and must be addressed prior to beginning a taper, as well as throughout the process. The use of motivational interviewing to increase the patient's desire to taper, as well as assessing readiness to change may be beneficial [20].

Provider-guided counseling about the expected progression of withdrawal and the development of a plan for managing withdrawal symptoms during the taper may help reduce anxiety. The provider should first explain why a taper is needed. This explanation may include an analysis of risks and benefits of LOT, including the benefits of risk reduction. Further, the provider should be up-front about the possible symptoms of opioid withdrawal. The provider should explain to the patient that tapering and/or discontinuation of LOT may ultimately result in long-term decreased pain, and that the patient may temporarily experience increased discomfort from withdrawal during the taper [21]. The provider should also emphasize that these symptoms are expected and that medical attention will be available if needed to treat them, including the use of medications [22].

Patient involvement in the development of a tapering plan (after appropriate education about the tapering process) is an important part of patient-provider communication and tapering success [19,22]. It may be difficult for providers to decide how much control to give patients over the tapering process. When there is not an immediate safety risk, the provider generally should give the patient some autonomy [22]. This does not mean that the provider needs to give up decision-making authority, but rather offer patients choices within the tapering process. Such choices could include allowing patients on multiple opioids to decide which opioid to taper first and agreeing on how much and how fast to taper, within reason.

As part of a shared decision-making process, a tapering agreement developed in conjunction with the patient may be a useful tool to define the expectations for the process, minimize misunderstanding, and facilitate adherence [13]. Elements contained in such an agreement could include start and stop dates as well as endpoints of therapy; the proposed speed of the taper process; risks, including the development of withdrawal symptoms; agreed-upon points of the taper process; provisions for taper failure, including needs for consultation; and interventions to deal with breakthrough pain. While there is very little existing evidence-based research into the utility of tapering agreements, the authors of this paper have found anecdotally that the use of such tools for selected patients helps to facilitate the tapering process by having a conversation, minimizing misunderstandings, and building trust between a patient and a provider.

Interdisciplinary teams can also help support the patient throughout the tapering process, as well as support increased quality, safety, efficiency, and outcomes during the tapering process [25]. They can also facilitate the integration and use of more comprehensive, multimodal pain management approaches. Interdisciplinary teams have primarily been studied in the inpatient setting, but their findings may be generalizable to use in the outpatient setting. Depending on a patient's particular needs, health care professionals in a variety of specialties may be needed and should be used according to their abilities and expertise [26]. In addition, opioid tapering in unique clinical scenarios may lack evidence-based guidelines and require specialized expertise from interdisciplinary team members. Overall, long-term evidence in the use of interdisciplinary teams is limited, and the role of interdisciplinary teams warrants consideration in practice and further research. Some promising studies suggest high rates of 6- and 12-month abstinence rates when patient tapers are managed by interdisciplinary teams; however, some studies have shown little to no difference in functional improvement [26,27].

Current Gaps in Research

In reviewing the evidence base for the tapering process, there exists a need for a better definition of the suggested components of an interdisciplinary tapering team, including the roles of behavioral health providers, community support workers, and pharmacists, amongst others. Similarly, there exists a need for an exploration of the appropriate role of family members, caregivers, and loved ones as part of the tapering team. Relatedly, gaps in evidence exist around the recommended duration of involvement of the tapering team in the patient's care, and a definition of the utility of tapering agreements and what components a tapering agreement should contain. Finally, a gap in evidence remains around best practices for frequency of follow-up and interaction between the physician and patient while a taper is ongoing to ensure a safe and well-tolerated taper.

Selecting the Speed of an Opioid Taper

A key decision point in the tapering process is the speed of the taper. Unfortunately, the existing medical literature offers little evidence to guide opioid tapering regimens for patients with CNCP. Many clinical trials that have sought to establish best practices for opioid tapering have provided low-quality evidence because of ungeneralizable studies and high patient dropout rates [28]. The 2016 CDC Guideline suggests that a starting point for tapering CNCP patients to be a 10 percent decrease of their starting dose each week, and also cautions that tapers slower than 10 percent per week may be appropriate and better tolerated in patients who have taken opioids long term (e.g., for years) [14]. In a follow-up paper published in 2019, the CDC Guideline authors stated that there are no shortcuts to safer opioid prescribing (which includes assessment of benefits and risks, patient education, and risk mitigation) or to appropriate and safe reduction or discontinuation of opioid use [14].

There is some evidence that patients on slower tapers, as compared to patients on faster tapers, may be more likely to remain compliant with their new regimen 6 months after the tapering intervention [13]. However, adequate randomized clinical trials have not yet taken place to best compare the effectiveness of fast and ultrafast tapers (ultrafast tapers are defined as those that take place in 1 to 7 days) compared to slower tapers. It should be noted that, for patients on LOT, ultrafast tapers are generally not indicated and are more likely to be associated with increased adverse impacts for the patient [29]. It appears, from the evidence available, that tapering speed should be inversely correlated with patient time on opioid therapy and dose. Hence, a taper for a patient starting at a 90 mg morphine equivalent daily dose will likely take longer than for a patient starting at a 40 mg morphine equivalent daily dose. The authors of this manuscript agree and propose that the higher the starting dose, the more gradual the taper will need to be to successfully taper the patient off opioids [12,13], but this needs further validation to ensure tapering best practices are used for all patients.

Secondary to the insufficient evidence to inform opioid tapering strategies, providers have developed internal tapering strategies derived from clinical experience, which are, by their nature, varied and difficult to compare and validate for purposes of formal recommendations. For example, the Mayo Clinic reports success with a stepwise initial taper of 10 percent every 5 to 7 days until complete discontinuation of opioids or whatever the end dose might be. In contrast, the United States Department of Veterans Affairs (VA) recommends a taper of 5–20 percent every four weeks or a 5–20 percent taper each week depending on patient circumstances until the lowest dose possible is reached [12,13]. The VA suggests a gradual taper if the patient has been on opioid therapy for a long duration of time, if the patient is currently on a relatively high MME dose, and if the provider feels that it is safe to start with a slow taper. This patient scenario reflects the status of most patients with chronic pain who are receiving opioid therapy and being seen in the primary care setting. It should be noted that in the citations listed as well as from the authors' experience, the percentage of taper listed is that percentage of taper applied to the initial dosage.

Special consideration should be taken for complex patients with chronic pain. A complex patient, for the purposes of this paper, is defined as someone who is on a daily opioid dose of greater than 90 mg morphine equivalent and presents with comorbidities such as mental health disorders, among other complications. For such patients, a much more gradual taper may be needed compared to patients who do not have any comorbidities and are adherent to their treatment plans, in order to minimize withdrawal symptoms and to increase the chance of success. Some complex patients may need to decrease their doses at 5 percent per month or slower. As a result, a minority of patients may need years to taper off their doses completely [22].

While a taper is ongoing, it can be slowed or paused if adverse symptoms or effects present, but in general should not be reversed without first maximizing adjunctive therapies to manage pain and any potential underlying behavioral health disorders. The available guidelines addressing tapering suggest that slowing or pausing a taper be guided by objective assessments of pain and function—such as the PEG scale [15] or the Quality of Life Scale by the American Chronic Pain Association—with the process slowed or paused after significant deterioration in either. It is recommended that any SUD or other behavioral health disorder uncovered during the taper be fully addressed and that any withdrawal symptoms encountered be treated as outlined above avoiding use of benzodiazepines or opioids. Methods to objectively assess whether a patient

may have underlying SUD are included in the section titled "Approaches to Managing a Challenging Taper" in this paper.

Restarting or escalating LOT is not recommended without reassessment of a patient's status including pain, functional status, and health. The question of restarting or escalating LOT is commonly encountered when patients change providers, so a full assessment of factors surrounding the LOT should be completed before changes in therapy are made. Worsening behavioral health issues in the CNCP patient must be addressed with the appropriate pharmacologic and non-pharmacologic therapies to avoid a desire by the patient to hide and self-medicate behavioral health symptoms with opioids. Increase of pain and/or deterioration of functional status in these patients is best addressed by maximizing the adjunctive and alternative therapies described in the following section. A request to reverse the tapering process by the patient should trigger further investigation by the provider into the possibility of unrecognized coexisting physical or behavioral issues and would be an ideal time to obtain additional consultation, particularly in the primary care setting. Providers are reminded that patients who have successfully tapered and/or discontinued opioids are at a higher risk of accidental overdose and death with resumption of their previous opioid dosing secondary to their loss of tolerance to opioids. Any reversal of the opioid taper must be carefully considered in view of risks versus benefits in a shared decision-making process, and that process must be fully documented in the medical record. Additional evidence is needed on the safe and effective determination of selecting the speed of an opioid taper.

Considerations and Potential Approaches When Tapering Opioids

In addition to standard tapering protocols, a number of special considerations regarding further research is needed. While these special considerations may be critical to ensure a safe and effective taper and long-term adherence, such as the use of complementary treatments and patient engagement, further research is needed to provide more definitive evidence to support their inclusion in standard tapering protocols.

Any conversation around the topic of tapering can be an emotional one, and it is essential to emphasize the importance of maintaining or improving pain management. With an effective pain management strategy, there is no need to rely on opioids as the sole analgesic agent. Non-opioid medications and non-pharmacologic therapies can also be employed. These approaches have been well described in the acute setting for surgical patients and can be used as examples for multimodal chronic pain management as well [23,24].

Considerations when using a taper include assessing the risk of withdrawal among physically dependent patients. Managing withdrawal symptoms requires close monitoring and individualized adaptations to care. In addition, behavioral health comorbidities are often present in patients who are on opioids, and require proactive screening and appropriate therapeutic approaches to be included in the tapering process. Finally, there are important considerations for polypharmacy patients, who may be at risk for complications. Overall, the tapering process should be carefully managed and involve shared decision-making, with attention toward special considerations and individualized, evidence-driven approaches.

Providers can take certain steps to decrease the risks associated with an opioid taper. Naloxone can reverse respiratory depression in the event of an opioid overdose and prevent patient death [30]. The FDA recently recommended that "health care professionals discuss naloxone with all patients when prescribing opioid pain relievers or medicines to treat opioid use disorder" [66]. The authors of this manuscript believe that patients with an increased risk of overdose, such as those dependent on high doses of opioids or those on LOT in combination with other high-risk medications should be co-prescribed naloxone. An opioid taper can cause a CNCP patient with a history of chronic opioid therapy to lose tolerance to the original prescribed dose, which increases the patient's risk of overdose in the event of a sudden increase in opioid intake [30]. To help mitigate the increased risk of a life-threatening overdose, the authors of this paper propose sustained co-prescription of naloxone at initial patient assessment, throughout the tapering process, and especially when tapering to abstinence. Providers should inform patients that their tolerance can decrease quickly in response to a taper and emphasize the risk of an overdose [31].

Use of Non-Opioid Pharmacological Therapy and Non-Pharmacological Therapies to Ensure Comprehensive Pain Management

In terms of non-pharmacologic pain management in-

terventions, cognitive behavioral therapy (CBT) is effective in durably decreasing chronic pain intensity and improving function, particularly in select groups of patients [32,33,34]. While evidence exists specifically for the use of psychological and mindfulness therapies, multidisciplinary rehabilitation, exercise, and acupuncture for chronic pain, testing has been limited to select indications and populations, and additional evidence is needed on the sustainable effects of these therapies over time [34]. Evidence-based research is needed to address these limitations and to examine the efficacy of further non-pharmacologic modalities such as cryotherapy, compression, transcutaneous electrical nerve stimulation, trigger point injections, dry needling, physical therapy, and regional anesthesia.

Physical activity and exercise are generally low-risk therapies that may improve pain severity and functional independence, although the overall quality of evidence supporting these claims is low [35]. Another key intervention is educating patients and engaging them in their own pain management. One study has shown that an educational intervention that provides patients with a detailed list of pain management modalities that are scheduled or available to them can decrease inpatient use of opioids after surgery [36]. Educational intervention has yet to be studied in terms of its impact on long-term opioid use and opioid tapering, but such an intervention should be explored.

There are multiple classes of non-opioid medications and interventions that can be effectively used to manage chronic pain. Classes of medications commonly used for pain include selective and non-selective nonsteroidal anti-inflammatory drugs (NSAIDs) (e.g., ibuprofen, celecoxib), acetaminophen, gabapentinoids, local anesthetics, antiseizure medications, antidepressants, and corticosteroids [23,24,37]. While there is evidence to support the use of anticonvulsants, antidepressants, and NSAIDs to decrease pain and improve function in the short term for certain patient populations, the evidence of benefit of these medications in the intermediate and long term is limited [37]. Further, these medications present potential risks of contraindications and side effects, such as potential dose-dependent increases in withdrawal that deserve careful consideration before recommending or prescribing for a patient [37]. For example, NSAIDs are contraindicated in patients with chronic kidney disease, with heart failure, or at increased risk of bleeding; and gabapentinoids, through their central nervous system activity, may be associated with risk of misuse and carry new warnings from the Food and Drug Administration (FDA) because of their risk of respiratory depression. As it relates to the patient population of focus in this paper, the FDA seeks to raise awareness of the potential risk of opioid overdose death with the concomitant use of gabapentinoids and opioids; however, it cautions against the potential to "unintentionally increase opioid use by turning prescribers away from this class of pain medications" [38].

Managing Withdrawal Symptoms

The cessation or tapering of opioids among physically dependent patients can lead to temporary withdrawal symptoms, which can cause significant discomfort and debilitating effects. Given the side effects associated with opioid withdrawal, it is not surprising that untreated withdrawal symptoms may increase the chance of patient dosage re-escalation [39]. The intensity and severity of withdrawal will depend on the opioid formulation, dose change, and other factors. Most patients will experience some withdrawal symptoms within 8 to 24 hours of their last opioid dose, and these symptoms will generally peak at 36 to 72 hours. However, withdrawal symptoms may last beyond the 72-hour threshold. Methadone, while used to help treat OUD, is also associated with withdrawal symptoms if abruptly discontinued with those symptoms lasting weeks to potentially months in individual patients. Initial symptoms of withdrawal may include anxiety, watery eyes, and headaches, and symptoms at withdrawal's peak can include nausea, muscle aches, and insomnia. Patients undergoing a taper may experience some, all, or none of these symptoms, and in varying stages of intensity. However, as withdrawal symptoms are a major factor for continued opioid use, fear of these symptoms must be taken seriously and addressed with patients prior to initiating a taper and throughout the taper's course.

As outlined by the 2016 CDC Guideline and the 2019 HHS Guide, development of withdrawal symptoms should clue the provider to slow or even pause the taper. However, should withdrawal symptoms appear, current treatment strategies include the use of alpha-2 adrenergic agonists, antiemetics, antidiarrheal agents, muscle relaxing agents, acetaminophen, and NSAIDs. Benzodiazepines are not recommended to manage withdrawal symptoms because of their risk of dependence and abuse and their side-effect profile. With the exception of lofexidine, described below, the agents outlined in this section do not have FDA approval to treat opioid withdrawal. Their use is considered off label or indicated to manage specific symptoms associated with withdrawal, such as nausea and diarrhea. Al-

pha-2 adrenergic agonists, clonidine, guanfacine, and lofexidine have been found to mitigate symptoms associated with opioid withdrawal [13,40]. Clonidine can decrease the intensity of physical symptoms such as tachycardia, sweating, vomiting, and insomnia [40,41]. Lofexidine, the newest centrally acting alpha-2 agonist to come to market, is indicated for short-term use to mitigate withdrawal symptoms to enable the abrupt discontinuation of opioids [42]. Although they can provide relief to the patient, alpha-2 adrenergic agonists may also cause undesirable side effects such as low blood pressure and sleepiness. They can be safely combined with non-narcotic medications used for managing withdrawal symptoms such as loperamide for diarrhea (should be used with caution because of potential for misuse), acetaminophen or NSAIDs for pain, and ondansetron or other histamine antagonists for nausea. However, because these agents act in the central nervous system, they may increase CNS-depressive effects of alcohol and other sedating medications, and, therefore, caution should be used when an alpha-2 adrenergic agonist is used concomitantly with an opioid [16]. While there is good evidence for the use of these agents for the management of withdrawal in a patient with OUD, there is minimal current evidence for their use in managing withdrawal symptoms in an opioid taper from LOT. This is an evidence gap that should be addressed.

Providers should consistently monitor patients undergoing opioid withdrawal and adapt withdrawal management treatment accordingly. The Subjective Opioid Withdrawal Scale (SOWS) is one of several tools that can be used to assess withdrawal symptoms [16]. For mild symptoms, the recommended treatment includes staying hydrated, vitamin B and C supplements, and non-opioid medication, such as ibuprofen, as needed for symptomatic treatment. If withdrawal progresses to the moderate or severe level, the patient may additionally need an alpha-2 adrenergic agonist, as described earlier, or an opioid medication, such as buprenorphine or methadone, to manage the symptoms [16]. As mentioned previously, if withdrawal symptoms present themselves and/or become unmanageable, the provider should strongly consider slowing or pausing the tapering protocol.

Some patients on LOT receiving high dose opioids may experience opioid-induced hyperalgesia or the increased sensitivity to pain stimuli as a direct result of the opioids [43]. The treatment for this phenomenon is the reduction of the opioid dose via opioid tapering, acknowledging that the patient response to the taper should be a reduction in pain, although individual responses to the taper will vary [44]. As with all tapering efforts, the process for the patient with opioid-induced hyperalgesia may be uncomfortable at times, and the provider must closely support the patient throughout.

Approaches to Managing a Challenging Taper

In the event of dosage re-escalation, defined for this manuscript as the unapproved escalation of opioid dosing by the patient, the provider must first reevaluate the patient for unrecognized behavioral health disorders, including SUD. To assist in that process, the provider should use the validated assessment tools available to the provider to assist in that reassessment (see the following paragraph below). If behavioral health disorders are detected upon reassessment, treatment must be directed toward the management of those disorders first, particularly SUD where transition to SUD treatment with buprenorphine and related agents may be needed before further attempts at tapering. With the suspicion of an underlying SUD, therapy may need to involve the assistance of an addiction specialist to manage the SUD, particularly for cases that may be too challenging to treat in the primary care setting. This may change the goal of treatment from tapering LOT to active management of a SUD. Similarly, a primary care provider may need to involve further behavioral health support, including the assistance of psychiatry for those patients with complicated behavioral health diagnoses, which may have been revealed during the tapering process. In addition, behavioral health and pharmacologic therapy should be considered (often in consultation with behavioral health providers) and other complimentary and integrative therapies added and/or maximized as noted above.

A significant percentage of patients receiving opioid pain relievers have underlying behavioral health comorbidities that may impact the success of efforts to taper and/or discontinue opioid therapy. The exact percentage of CNCP patients receiving LOT with coexisting behavioral health disorders is currently uncertain, but one study revealed that 18.7 percent of the US population with behavioral health disorders were using opioids, whereas only 5 percent of the US population without behavioral health disorders were on opioids [45]. In another study that looked at the misuse of prescription opioids in those patients on LOT without a history of SUD, those patients with depression tool scores in the moderate to severe depression range were 1.8 to 2.4 times more likely to misuse opioids compared to patients who were not depressed, based

on their scores [46]. Providers are likely to encounter patients with coexisting behavioral health comorbidities, like personality disorders or mood disorders, such as depression [47]. Those same patients may also manifest poor coping strategies, which may impact their use of opioids for CNCP, their use of health care resources [48], and, it could be assumed, the patients' ability to tolerate and/or complete a taper of opioid therapy.

Addressing behavioral health needs is important in the treatment of patients on chronic opioids and those who require tapering. Patient care should involve collaboration between the mental health provider and the provider who is managing the opioid taper. To facilitate the diagnosis of behavioral health issues in CNCP patients, providers can use several patient- and/or staff-administered assessment tools to screen for behavioral health or SUDs. Commonly used tools to screen for behavioral health disorders include the Patient Health Questionnaire 9 (PHQ-9) [49] for general mood disorders, the GAD -7 for anxiety disorder [50], and the PC-PTSD for post-traumatic stress disorder [51]. Screening tools available to screen for SUD include the Opioid Risk Tool (ORT) [52], the CAGE Adapted to Include Drugs (CAGE-AID) [53], the DIRE tool (diagnosis, intractability, risk efficacy), and the Alcohol Use Disorders Identification Test (AUDIT) [54]. All of the noted screening tools are free, publicly available, and typically consist of no more than 10 questions, requiring 5 minutes or less to complete in most situations. All of the listed tools have been validated for screening and monitoring in patients receiving opioid therapy [55].

Once underlying behavioral health disorders are adequately addressed, as well as any other drivers of the patient's response to pain and the stimulus for that pain, a taper should be reattempted. This tapering process should maximize patient involvement in the decision-making process about the taper and maximize education about expectations about the taper, including management of withdrawal symptoms, the goals of the taper, and appropriate endpoints of the taper. This shared decision-making process will probably involve revised goals for the speed, duration, and endpoint of the taper. However, shared decision making does not necessitate continuation of risky prescribing just because the patient refuses to attempt a taper. Similarly, the goal of the taper may need to change from one of complete elimination of the opioid therapy to one involving a reduction to the lowest effective dose as guided by assessment of patient function, activity goals, and pain levels. Greater use of interdisciplinary teams and psychological support for these patients during the taper should improve the likelihood of a successful taper, although the evidence for use of interdisciplinary teams in the process has not been sufficiently validated by studies.

While a review article from Berna and colleagues [13] suggested that there is lack of high-quality evidence for the use of CBT and other behavioral therapies in tapering LOT, another randomized controlled trial found that intensive behavioral health support compared to usual care was associated with improvement in self-reported pain measures and prescription opioid problems at study conclusion [56]. In view of the percentage of CNCP patients with underlying behavioral health issues and with the success of these therapies in patients with behavioral health disorders, many clinicians are utilizing behavioral health therapies where available in the treatment of patients with CNCP and subsequent opioid tapering. Because of the limitations listed, the question of how behavioral health therapies should be used as an adjunct to tapering needs further research.

As opioid tapers are complex, often involving physical and mental changes, providers need to be aware of and guard against the possibility of patient death—either by unintentional overdose or by suicide. While studies have demonstrated a link between chronic pain and an increased risk for death by suicide [57], the risk associated with opioid tapering is currently undetermined and is a research gap needing further investigation. Opioid pain medication characteristics such as higher dosing and taking opioid pain relievers in conjunction with anxiety medications such as benzodiazepines have also been positively linked with an increased risk of death by suicide [58,59]. As there are no established protocols for mitigating suicidal behavior or thoughts in patients undergoing a taper, it is critical to ensure that behavioral health issues are addressed and that, in an optimal environment, behavioral health professionals are part of the tapering team supporting the patient. As part of the management of those tapering patients at possible risk for death by suicide, tapering team members need to maintain contact with the patient throughout that process, monitoring the suicide risk by validated tools and frequent observations, with that period of close surveillance reduced only after a reduction in those risk assessments. The authors acknowledge that accessing behavioral health professionals for tapering support is difficult in various practice environments, but every effort should be made when working with those patients at high risk.

Consideration should be given for use of alternative care strategies such as telemedicine and greater use of ancillary behavioral health personnel to extend limited behavioral health resources.

Tapering a Patient Who is Co-Prescribed Opioid Analgesics, Benzodiazepines, and Other Central Nervous System Depressants

The use of multiple medications simultaneously may exacerbate medical problems and increase the risk of adverse effects because of drug interactions and patient difficulty in safely managing their medications [60,61]. Polypharmacy with opioids and other sedative hypnotics is associated with increased risk of cognitive impairment and overdose. This risk is extensively documented in the case of opioids and benzodiazepines, where both medications were present in over 30 percent of patients who overdosed [62,63]. Accordingly, the CDC recommends that their concomitant use be done with caution [14].

Sequential tapers present a possible approach to taper patients concomitantly taking opioids, benzodiazepines, and/or sedative hypnotics. However, evidence is lacking regarding which medication to taper first. Factoring in patient-specific needs and conversations with the patient need to inform decision making about tapering and order of taper. For example, if a patient would benefit from an anxiolytic because of concerns with an opioid taper, then the opioid should be tapered first [14]. In addition, abrupt benzodiazepine tapering may result in seizures and death, therefore requiring a longer discontinuation plan. However, if the daily MME is significantly high and the benzodiazepine use is intermittent, then benzodiazepine tapering should occur first [14,64]. More research is needed to understand how best to taper the polypharmacy patient and ensure the patient's safety and well-being throughout.

As is clear from the many considerations for the taper presented in this section, initiating a taper is a complex process that needs to be approached thoughtfully and as a shared decision-making process between patient and provider. In addition, efforts such as the coprescription of naloxone can help decrease the risks of a taper [31]. More research is needed on the use of adjunctive medications, managing withdrawal effectively, approaches for coexisting behavioral health disorders, and strategies for safely tapering polypharmacy patients to ensure that protocols being followed are evidence-based and do not cause patients additional physical or psychological harm.

As the process of opioid tapering is a complex endeavor for any patient, the authors of this manuscript have assembled a decision aid (see *Figure 1*) to help in navigating the process of an opioid taper. Please note that the decision aid is only a guide. The needs of each patient are unique and should be approached on a case by case basis. Clinicians should review the risks and benefits with the patient, and decide how to proceed with the tapering process in a way that is appropriately informed by individual circumstances and should minimize symptoms of opioid withdrawal.

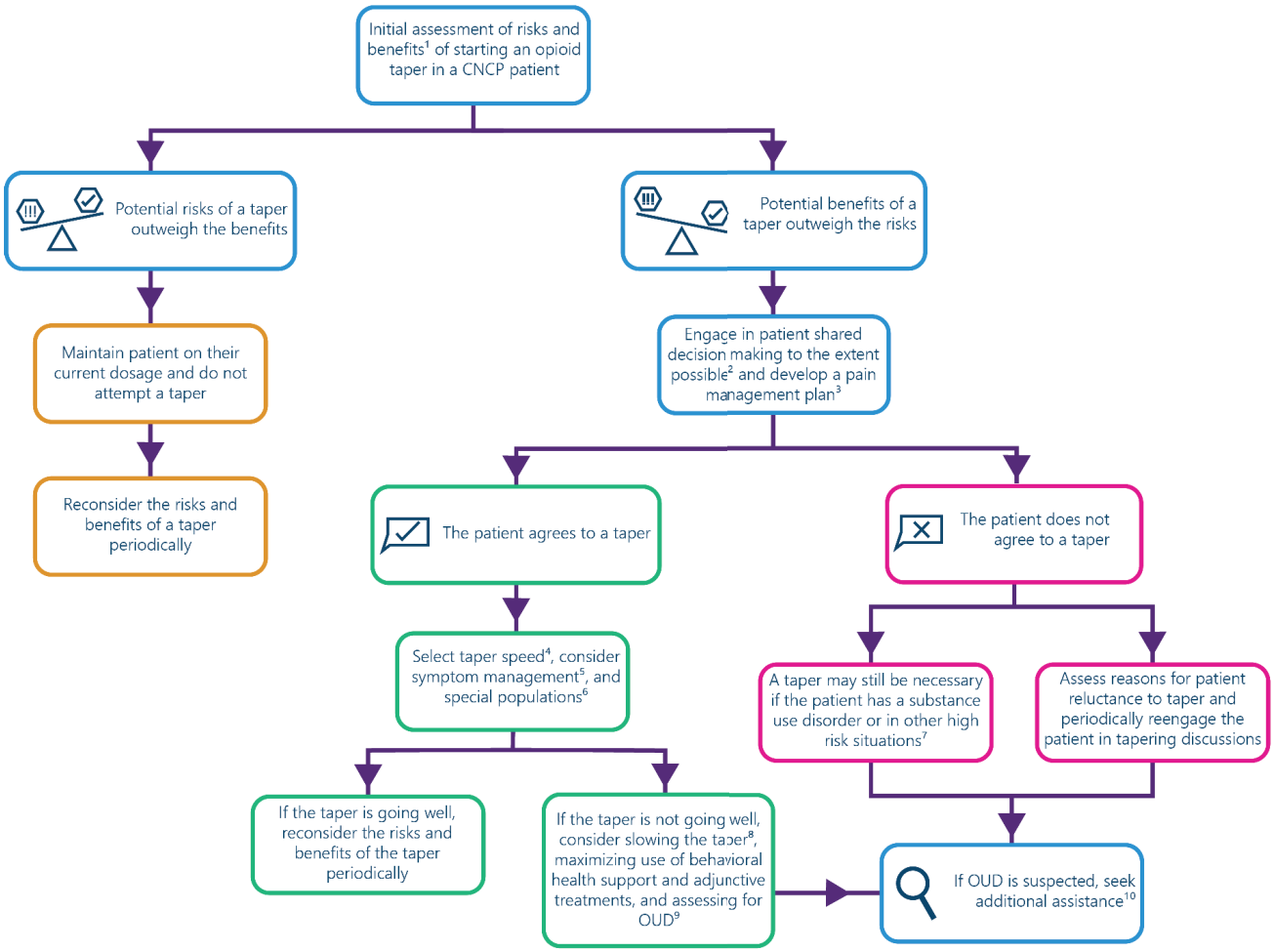
Priorities for Future Research

This manuscript has addressed the state of the evidence for major aspects of the planning, initiation, and management of opioid tapers. Evidence is lacking in a significant portion of these considerations and approaches, and more research is needed on population-specific tapering protocols to ensure efficacious and safe tapers for all patients. The authors of this manuscript have highlighted, below, priority areas for research that they believe will most immediately impact the safety and efficacy of tapers and that will make the biggest difference in the implementation of opioid tapers. The authors note that the underlying theme implicit in the research priorities is that opioid tapering, as noted in the introduction, is a risk reduction exercise in which the benefits of tapering outweigh the risks of usage as currently prescribed. The aforementioned CDC Guideline and HHS Guide are tools to help facilitate risk assessment, but risk assessment and decisions about tapering in this population very much reflect the "art of medicine" and the need for an improved evidence base.

1. Identify the appropriate taper speed for individual patients within distinct patient populations, beginning with those patients on high-dose opioid therapy (greater than 90 MME per day); patients with suspected OUD; and patients with coexisting behavioral health disorders.

As reviewed in the section "Selecting the Speed of an Opioid Taper," little to no evidence exists to guide providers on the speed of a taper for a particular patient. As the speed of the taper often dictates the onset and severity of adverse symptoms for the patient, contributes to patient fear and apprehension, and can impact taper adherence, the authors of this manuscript feel that this research priority is critical and immediately

Figure 1 | Key Decision Points to Support Tapering Strategies



NOTE: This decision aid serves as a guide. The needs of each patient are unique and should be approached on a case by case basis. Clinicians should review the risks and benefits with the patient, and decide how to proceed with the tapering process in a way that is appropriately informed by individual circumstances and should minimize symptoms of opioid withdrawal.

Footnotes:

1. Example risks and benefits to consider include suspected OUD, history of opioid overdose, inadequate pain response, lack of functionality improvement, unbearable side effects, concurrent use of other sedatives, high opioid dosages, diagnoses of other medical conditions; if the treatment is harming the patient's ability to function physically, emotionally, or socially or if the patient is unable to follow the terms of the agreed-upon pain management plan and/or contract.
2. Consider the goals of the taper with the patient. In general, tapering should be continued as long as the benefits continue to outweigh the risks. For example, the best strategy for many patients may be to taper to a lower opioid dose, rather than to abstinence.
3. Development and periodic reevaluation of a pain management plan with the patient throughout the tapering process can reduce patient anxiety. A combination of multimodal elements can be used to manage patient pain during a taper which allow for pain management to be as effective, or possibly more effective, than prior to the taper.
4. Evidence regarding the selection of tapering speed is lacking. The 2019 HHS Guidelines suggest that slower tapers, or a 10% dose reduction per month or slower, as opposed to faster tapers, are generally better tolerated by patients, and especially by those who have been on opioid therapy for a year or longer. When possible, the speed of the taper should be as slow as needed to limit withdrawal symptoms. In addition, in general, the longer the patient has received opioid therapy, the slower the taper should be.
5. Current treatment strategies to manage withdrawal symptoms include the use of alpha-2 adrenergic agonists, antiemetics, antidiarrheal agents, muscle relaxing agents, acetaminophen, and NSAIDs.
6. Pregnant women, youth, patients with behavioral health disorders and those who are co-prescribed other central nervous system depressants deserve special consideration in the tapering process.
7. Other high risk situations include patient history of opioid overdose, when the treatment is harming function, and patient failure to follow the terms of the treatment plan.
8. A taper can be paused but should generally not be reversed, although there are exceptions.
9. Consider the use of the DSM-5 criteria when assessing for OUD.
10. Healthcare professionals who could provide assistance include addiction medicine specialists, behavioral health specialists and pain medicine specialists, among others.

needed. Research is needed to develop the evidence base and guidance for determining patient-specific tapering speeds.

2. Determine the optimal non-opioid pharmacologic and non-pharmacologic treatments to manage pain for different patient populations, beginning with the use of CBT in tapering; use of antidepressant therapy in tapering, specifically in patients with and without behavioral health disorders; and use of gabapentinoids in tapering.

There are a number of pharmacologic and non-pharmacologic treatments that have demonstrated utility in helping to manage chronic pain. Yet, there has been little investigation into how these treatments might facilitate tapering of LOT in the CNCP not currently receiving such therapies. This leaves investigators multiple opportunities for evidence-based research, including not only the value of those treatments in opioid tapering but also investigations into the timing and/or the sequence of their use. With better documentation of the indications for their use as adjuncts in tapering, insurance coverage of those treatments can be better validated, and these adjunctive therapies can become available to a broader swath of the population. For now, the authors of this manuscript agree that offering and potentially maximizing the use of adjunctive therapies on a case-by-case basis in those patients willing to use those therapies when available is a good practice. Research is needed on non-pharmacological treatment for chronic pain to include patients on LOT who are not receiving these therapies, and expand the evidence base for how non-pharmacological therapies may be best utilized for tapering practices.

3. Determine the efficacy around use of interdisciplinary teams in opioid tapering.

Similarly, the use of interdisciplinary teams would benefit from longer duration studies with larger patient pools to validate how the presence of such a team is beneficial to or detracts from an opioid tapering process. The studies should look at not only the value of integrative care in tapering but also which type of integrative care is beneficial, administered by which personnel, and at what point integrative care is most beneficial in the tapering process. As noted previously, an improved evidence basis for integrative care should therefore improve insurance coverage for and the availability of integrative care for tapering. Research is needed to determine the impact of integrative care and recommendations for incorporating integrative care practices into tapering procedures.

4. Determine how best to employ opioid agonists in patients with OUD and chronic pain and on the use of buprenorphine and methadone in patients with persistent opioid dependence.

The safety of the FDA-approved medications used to treat OUD is well researched, and these medications continue to demonstrate efficacy. In those patients on LOT for CNCP who have a coexisting SUD, those same treatments can be applied to the management of the SUD and those patients transitioned off LOT to those medications. For those patients who do not have an SUD, the evidence base for the use of methadone and buprenorphine in the tapering process is less clear. Research is needed to identify whether these treatments should be considered primary approaches in tapering LOT in patients without OUD; to clearly identify the point at which a provider transitions a patient from LOT to SUD treatment medications; to determine the speed of tapering once the patient is transitioned to these medications; and to clearly illuminate the role of maintenance therapies in those patients tapered off LOT with the use of SUD therapies. In determining whether SUD therapies should be considered a primary treatment for tapering in those patients with CNCP receiving LOT, data comparisons would need such endpoints of the rates of dosage re-escalation, risks of complications including suicide and death, amongst other endpoints when compared to other tapering strategies. While not a research point, policy makers should consider whether a provider would be required to undergo waiver training to prescribe buprenorphine for OUDs, whether they should complete the waiver application process, and what the role of prescribing limits (i.e., panel size caps) associated with the use of these medications for SUD should be. Further, while waiver training is not required to use buprenorphine for pain treatment, the authors propose that deleting the requirement for waiver training to prescribe buprenorphine for treating OUD may expand the pool of providers treating OUD and should be further investigated. Research is needed on the use of SUD therapies for CNCP patients and on consideration of policy changes needed to address barriers to access and effective implementation.

5. Identify best practices to taper opioids in polypharmacy patients.

A sizable portion of patients on LOT for CNCP also receive combinations of medications such as benzodiazepines, sleep aids, muscle relaxants, gabapentin, and other sedating medications, increasing the risk of accidental overdose and death. Patients often do not realize that they are taking medications with drug interactions, and patient-physician engagement is critical in deciding which drug to taper first. While the theme of this paper focuses on the tapering of LOT, there is a lack of evidence to guide the provider about how to also taper these other medications in addition to LOT. Research is needed on how clinicians should consider whether to taper these medications concurrently, on whether one or other categories of medications should be tapered prior to tapering the LOT, and the speed at which these other categories should be tapered in the LOT patient. Research is needed to establish best practices on opioid tapering for patients on LOT and combination medications.

6. Identify optimal treatments for concomitant behavioral health conditions in patients undergoing an opioid taper.

A percentage of patients who are receiving LOT to treat CNCP also have undiagnosed and unaddressed behavioral health conditions, which complicates the management of their pain and complicates tapering efforts. The need to manage behavioral health disorders in the population of LOT patients being tapered is generally accepted, although the evidence base to fully support this as described is limited by small sample size, short duration of the available studies, and endpoints not dedicated to their utility in the tapering process. These and other evidence gaps would benefit from larger long duration studies tailored to look at dosage re-escalation rates and maintenance of the LOT patient that has been tapered, not only from the standpoint of pain but also measures of their functional status and as well as behavioral health scores. There is substantial need for further research into which behavioral health therapies are of benefit to the care of the CNCP patient receiving LOT as well to their role in the tapering process including when those therapies should be started as part of the taper, how long those therapies should be used during the taper, and their role if any in maintenance of the taper and avoiding dosage re-escalation. Research is needed to identify which behavioral health interventions are useful while a taper is ongoing, which measures of tapering success are positively impacted by behavioral health therapies used during tapering, and which behavioral health therapies have the most positive benefit. Research is needed to develop effective behavioral health interventions and the impact of incorporating these therapies into the opioid tapering process.

7. Strengthen the evidence behind associated benefits and risks of opioid tapering.

As noted in introductory comments and throughout the text of this paper, the authors have approached opioid tapering as a risk reduction exercise. In looking at the most recent reviews of the available research examining the risk and benefits of opioid tapering [21,65], the evidence supporting improvement in measurements in pain, function, and quality of life is currently of low quality and in need of more extensive, higher quality, and longer duration studies. Similarly, the quality and availability of research into possible risks of opioid tapering is more limited, including the investigation of anecdotal reports of increased risks of overdose, suicidality, and death [65]. The authors acknowledge the need for more robust research into the benefits and risks of opioid tapering including long duration (> than a year) studies of those benefits/risks. Research is needed on the benefits and risks of opioid tapering to improve the evidence base for key decision-making points in the tapering process.

Conclusion

In caring for a patient with CNCP on LOT, there are many reasons to consider tapering the opioid therapy, particularly if the patient is on high dose (>90 MME) or taking the opioids in combination with other high-risk medications such as benzodiazepines. Ideally, the patient will present to the provider with a desire to taper therapy, but for the majority of patients, this is not the usual scenario. More commonly, the provider initiates the discussion about tapering after a review of clinical data, including medical records, the results from behavioral health and substance abuse screening tools, and conversations with the patient and loved ones about the impact of opioids on the patient's pain and functioning. Once the decision to taper has been made in a shared decision-making process with adequate planning and patient education, including possible

use of tapering agreements, a tapering process can be started. As part of the preparation for tapering, ideally, assessment for and treatment of coexisting behavioral health disorders, including SUD, should be undertaken to increase the likelihood of a successful taper. If not already done, naloxone should also be co-prescribed at the start of a taper to help mitigate the increased risk of overdose while taking into account federal and state guidelines. Once the taper has begun, there is little evidence to guide the clinician about the proper speed of tapering other than consensus recommendations to take into account the patient's length of time and dosage of LOT when planning the speed of the taper and to taper based upon ongoing assessments of pain and function. With completion of the taper at an endpoint agreed upon by patient and provider, ongoing surveillance of the CNCP patient should continue to detect and manage any dosage re-escalation and avoid resumption of high-risk opioid dosages and medication combinations.

With future research, we hope to better understand the overall benefits of opioid tapering as well as unintended consequences, how to better tailor the use of adjunctive medications in that process, how to adjust tapering speed to minimize the risk of withdrawal while maintaining a pathway to each individual patient's endpoint, and finally, how to guide the practitioner regarding the request to reverse or abandon a previously successful opioid taper. The authors remind the reader of this paper that each patient is an individual and that each taper will need to be tailored to individual patient endpoints with some patients completely tapered off their LOT whereas others are tapered to a lower level of LOT use guided by ongoing assessment of pain, function, and other parameters. The authors do acknowledge that in an ideal setting, there should be a team of individuals assisting the patient and the practitioner in the tapering process, particularly behavioral health support, but this is not possible in many areas. To scale up the processes discussed in this paper, health care systems will need to commit to incentivizing team-based tapering support; building out greater behavioral health services, including primary care-based behavioral services with the financing to support those services; incentivizing more primary care providers to provide tapering services, since that is where most CNCP patients continue to receive their LOT; and supporting greater access to adjunctive treatments and medications for the CNCP patient to lessen their reliance on LOT.

References

1. Ballantyne, J. C. 2017. Opioids for the Treatment of Chronic Pain. *Anesthesia & Analgesia* 125(5):1769–1778. https://doi.org/10.1213/ane.0000000000002500.
2. Dunn, K. M., K. W. Saunders, C. M. Rutter, C. J. Banta-Green, J. O. Merrill, M. D. Sullivan, C. M. Weisner, M. J. Silverberg, C. I. Campbell, B. M. Psaty, and M. Von Korff. 2010. Opioid Prescriptions for Chronic Pain and Overdose. *Annals of Internal Medicine* 152(2):85–92. https://doi.org/10.7326/0003-4819-152-2-201001190-00006.
3. Els, C., R. Hagtvedt, D. Kunyk, B. Sonnenberg, V. G. Lappi, and S. Straube. 2016. High-dose opioids for chronic non-cancer pain: an overview of Cochrane reviews. *Cochrane Database of Systematic Reviews.* https://doi.org/10.1002/14651858.cd012299.
4. National Academies of Sciences, Engineering, and Medicine. 2017. *Pain Management and the Opioid Epidemic: Balancing Societal and Individual Benefits and Risks of Prescription Opioid Use.* Washington, DC: The National Academies Press. https://doi.org/10.17226/24781.
5. Fishbain, D. A., and A. Pulikal. 2019. Does opioid tapering in chronic pain patients result in improved pain or same pain vs increased pain at taper completion? A structured evidence-based systematic review. *Pain Medicine* 20(11):2179–2197. https://doi.org/10.1093/pm/pny231.
6. United States Department of Health and Human Services (HHS). 2019. *HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-term Opioid Analgesics.* Available at: https://www.hhs.gov/opioids/sites/default/files/2019-10/Dosage_Reduction_Discontinuation.pdf (accessed November 8, 2019).
7. Dowell, D., W. M. Compton, and B. P. Giroir. 2019. Patient-Centered Reduction or Discontinuation of Long-term Opioid Analgesics: The HHS Guide for Clinicians. *JAMA* 322(19):1855–1856. https://doi.org/10.1001/jama.2019.16409
8. Brummett, C. M., J. F. Waljee, J. Goesling, S. Moser, P. Lin, M. J. Englesbe, A. S. B. Bohnert, S. Kheterpal, and B. K. Nallamothu. 2017. New Persistent Opioid Use After Minor and Major Surgical Procedures in US Adults. *JAMA Surgery* 152(6):e170504. https://doi.org/10.1001/jamasurg.2017.0504.
9. Tamboli, M., E. R. Mariano, K. E. Gustafson, B. L. Briones, O. O. Hunter, R. R. Wang, T. K. Harrison, A. Kou, S. C. Mudumbai, T. E. Kim, P. F. Indelli, and N. J.

Giori. 2019. A multidisciplinary patient-specific opioid prescribing and tapering protocol is associated with a decrease in total opioid dose prescribed for six weeks after total hip arthroplasty. *Pain Medicine* 21(7):1474–1481. https://doi.org/10.093/pm/pnz260.

10. National Academies of Sciences, Engineering, and Medicine. 2020. *Framing Opioid Prescribing Guidelines for Acute Pain: Developing the Evidence.* Washington, DC: The National Academies Press. https://doi.org/10.17226/25555
11. Lovejoy, T. I., B. J. Morasco, M. I. Demidenko, T. H. A. Meath, and S. K. Dobscha. 2018. Clinician Referrals for Non-opioid Pain Care Following Discontinuation of Long-term Opioid Therapy Differ Based on Reasons for Discontinuation. *Journal of General Internal Medicine* 33:24–30. https://doi.org/10.1007/s11606-018-4329-6.
12. United States Department of Veterans Affairs and Department of Defense. 2017. *VA/DoD Clinical Practice Guideline for Opioid Therapy for Chronic Pain.* Available at: https://www.healthquality.va.gov/guidelines/Pain/cot/VADoDOTCPG022717.pdf (accessed on October 31, 2019).
13. Berna, C., R. J. Kulich, and J. P. Rathmell. 2015. Tapering long-term opioid therapy in chronic noncancer pain: Evidence and recommendations for everyday practice. *Mayo Clinic Proceedings* 90(6):828–842. https://doi.org/10.1016/j.mayocp.2015.04.003.
14. Dowell, D., T. M. Haegerich, and R. Chou. 2016. CDC guideline for prescribing opioids for chronic pain—United States. *JAMA* 315(15):1624–1645. https://doi.org/10.1001/jama.2016.1464.
15. Krebs, E. E., K. A. Lorenz, M. J. Bair, T. M. Damush, J. Wu, J. M. Sutherland, S. M. Asch, and K. Kroenke. 2009. Development and Initial Validation of the PEG, a Three-item Scale Assessing Pain Intensity and Interference. *Journal of General Internal Medicine* 24(6):733–738. https://doi.org/ 10.1007/s11606-009-0981-1.
16. World Health Organization. 2009. *Clinical guidelines for withdrawal management and treatment of drug dependence in closed settings.* Geneva: World Health Organization. Available at: https://www.who.int/hiv/pub/idu/wpro_withdrawl/en/ (accessed on October 31, 2019).
17. Gomes, T., D. N. Juurlink, T. Antoniou, M. M. Mamdani, J. M. Paterson, and W. van den Brink. 2017. Gabapentin, opioids, and the risk of opioid-related death: A population-based nested case–control study. *PLoS Medicine* 14(10):e1002396. https://doi.org/10.1371/journal.pmed.1002396.
18. Dowell, D., and T. M. Haegerich. 2017. Changing the conversation about opioid tapering. *Annals of Internal Medicine* 167:208–209. https://doi.org/10.7326/M17-1402.
19. Matthias, M. S., N. L. Johnson, C. G. Shields, M. J. Bair, P. MacKie, M. Huffman, and S. C. Alexander. 2017. "I'm not gonna pull the rug out from under you": Patient-provider communication about opioid tapering. *Journal of Pain* 18(11):1365–1373. https://doi.org/10.1016/j.jpain.2017.06.008.
20. Crawley, A., L. Murphy, L. Regier, and N. McKee. 2018. Tapering opioids using motivational interviewing. *Canadian Family Physician* 64(8):584–587. Available at: https://pubmed.ncbi.nlm.nih.gov/30108077/ (accessed June 30, 2020).
21. Frank, J. W., T. I. Lovejoy, W. C. Becker, B. J. Morasco, C. J. Koenig, L. Hoffecker, H. R. Dischinger, S. K. Dobscha, and E. E. Krebs. 2017. Patient Outcomes in Dose Reduction or Discontinuation of Long-Term Opioid Therapy: A Systematic Review. *Annals of Internal Medicine.* 167(3):181–191. https://doi.org/10.7326/M17-0598.
22. Lembke, A. 2018. *Opioid taper/discontinuation (The BRAVO Protocol).* Available at: https://www.oregonpainguidance.org/wp-content/uploads/2019/02/BRAVO-updated-2019.pdf?x91687 (accessed on October 31, 2019).
23. Kandarian, B. S., N. M. Elkassabany, M. Tamboli, and E. R. Mariano. 2019. Updates on multimodal analgesia and regional anesthesia for total knee arthroplasty patients. Best Practice and Research, *Clinical Anaesthesiology* 33:111–123. https://doi.org/10.1016/j.bpa.2019.02.004.
24. Schwenk, E. S., and E. R. Mariano. 2018. Designing the ideal perioperative pain management plan starts with multimodal analgesia. *Korean Journal of Anesthesiology* 71:345–352. https://doi.org/10.4097/kja.d.18.00217.
25. Epstein, N. E. 2014. Multidisciplinary in-hospital teams improve patient outcomes: A review. *Surgical Neurology International* 5(7 Suppl):S295–S303. https://doi.org/10.4103/2152-7806.139612.
26. Henry, S. G., D. A. Paterniti, B. Feng, A. M. Iosif, R. L. Kravitz, G. Weinberg, P. Cowan, and S. Verba. 2019. Patients' experience with opioid tapering: A conceptual model with recommendations for clinicians. *The Journal of Pain* 20(2):181–191. https://doi.org/10.1016/j.jpain.2018.09.001.

27. Townsend, C. O., J. L. Kerkvliet, B. K. Bruce, J. D. Rome, W. M. Hooten, C. A. Luedtke, and J. E. Hodgson. 2008. A longitudinal study of the efficacy of a comprehensive pain rehabilitation program with opioid withdrawal: Comparison of treatment outcomes based on opioid use status at admission. *Pain* 140(1):177–189. https://doi.org/10.1016/j.pain.2008.08.005.
28. Sandhu, H., M. Underwood, A. D. Furlan, J. Noyes, and S. Eldabe. 2018. What interventions are effective to taper opioids in patients with chronic pain? *BMJ* 362:k2990. https://doi.org/10.1136/bmj.k2990.
29. Mark, T. L., and W. Parish. 2019. Opioid Medication Discontinuation and Risk of Adverse Opioid-Related Health Care Events. *Journal of Substance Abuse Treatment* 103:58–63. https://doi.org/ 10.1016/j.jsat.2019.05.001.
30. HHS. 2018. *Naloxone: the opioid reversal drug that saves lives—how healthcare providers and patients can better utilize this life-saving drug.* Washington, DC: HHS. Available at: https://www.hhs.gov/opioids/sites/default/files/2018-12/naloxone-coprescribing-guidance.pdf. (accessed June 10, 2020).
31. HHS. 2019. *Naloxone: HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics.* Available at: https://www.hhs.gov/opioids/sites/default/files/2019-10/Dosage_Reduction_Discontinuation.pdf (accessed June 10, 2020).
32. Gatchel, R. J., D. D. McGeary, C. A. McGeary, and B. Lippe. 2014. Interdisciplinary chronic pain management: past, present, and future. *The American Psychologist* 69:119–30. https://doi.org/10.1037/a0035514.
33. Knoerl, R., E. M. Lavoie Smith, and J. Weisberg. 2015. Chronic Pain and Cognitive Behavioral Therapy: An Integrative Review. *Western Journal of Nursing Research* 38(5):596–628. https://doi.org/10.1177/0193945915615869.
34. Skelly, A.C., R. Chou, J. R. Dettori, J. A. Turner, J. L. Friedly, S. D. Rundell, R. Fu, E. D. Brodt, N. Wasson, S. Kantner, and A. J. R. Ferguson. 2020. *Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review Update. Comparative Effectiveness Review No. 227.* (Prepared by the Pacific Northwest Evidence-based Practice Center under Contract No. 290- 2015-00009-I.) AHRQ Publication No. 20-EHC009. Rockville, MD: Agency for Healthcare Research and Quality. Available at: https://pubmed.ncbi.nlm.nih.gov/32338846/ (accessed June 30, 2020).
35. Geneen, L. J., R. A. Moore, C. Clarke, D. Martin, L. A. Colvin, and B. H. Smith. 2017. Physical activity and exercise for chronic pain in adults: an overview of Cochrane Reviews. *The Cochrane Database of Systematic Reviews* 4:CD011279. https://doi.org/10.1002/14651858.CD011279.pub2.
36. Yajnik, M., J. N. Hill, O. O. Hunter, S. K. Howard, T. E. Kim, T. K. Harrison, and E. R. Mariano. 2019. Patient education and engagement in postoperative pain management decreases opioid use following knee replacement surgery. *Patient Education and Counseling* 102(2):383–387. https://doi.org/10.1016/j.pec.2018.09.001.
37. McDonagh, M.S, S. S. Selph, D. I. Buckley, R. S. Holmes, K. Mauer, S. Ramirez, F. C. Hsu, T. Dana, R. Fu, and R. Chou. 2020. *Nonopioid Pharmacologic Treatments for Chronic Pain. Comparative Effectiveness Review No. 228.* (Prepared by the Pacific Northwest Evidence-based Practice Center under Contract No. 290-2015-00009-I.) AHRQ Publication No. 20-EHC010. Rockville, MD: Agency for Healthcare Research and Quality. https://doi.org/10.23970/AHRQEPCCER228.
38. Food and Drug Administration. 2019. *FDA In Brief: FDA requires new warnings for gabapentinoids about risk of respiratory depression.* Available at: https://www.fda.gov/news-events/fda-brief/fda-brief-fda-requires-new-warnings-gabapentinoids-about-risk-respiratory-depression (accessed June 30, 2020).
39. Burma, N. E., C. H. Kwok, and T. Trang. 2017. Therapies and mechanisms of opioid withdrawal. *Pain Management* 7(6):455–459. https://doi.org/10.2217/pmt-2017-0028.
40. Jahagirdar, D., and K. Campbell. 2018. *Alpha2-adrenergic agonists for the reduction or discontinuation of opioids or opioid substitution therapy: a review of clinical effectiveness and guidelines.* Ottawa: CADTH. Available at: https://www.cadth.ca/sites/default/files/pdf/htis/2018/RC0968%20Clonidine%20for%20Opioid%20Tapering%20Final.pdf (accessed June 30, 2020).
41. Stotts, A. L., C. L. Dodrill, and T. R. Kosten. 2009. Opioid dependence treatment: options in pharmacotherapy. *Expert Opinion on Pharmacotherapy* 10(11):1727–40. https://doi.org/10.1517/14656560903037168.
42. Lucemyra [package insert]. 2018. Louisville, KY: US

WorldMeds, LLC.

43. Roeckel, L. A., G. M. Le Coz, C. Gaveriaux-Ruff, and F. Simonin. 2016. Opioid-induced hyperalgesia: Cellular and molecular mechanisms. *Neuroscience* 338:160–182. https://doi.org/10.1016/j.neuroscience.2016.06.029.
44. Lee, M., S. M. Silverman, H. Hansen, V. B. Patel, and L. Manchikanti. 2011. A comprehensive review of opioid-induced hyperalgesia. *Pain Physician* 14(2):145–161. Available at: https://www.painphysicianjournal.com/current/pdf?article=MTQ0Ng%3D%3D&journal=60 (accessed June 30, 2020).
45. Davis, M. A., L. A. Lin, H. Liu, and B. D. Sites. 2017. Prescription Opioid Use Among Adults with Mental Health Disorders in the United States. *Journal of the American Board of Family Medicine* 30(4):407–417. https://doi.org/ 10.3122/jabfm.2017.04.170112.
46. Grattan, A., M. D. Sullivan, K. W. Saunders, C. I. Campbell, and M. R. Von Korff. 2012. Depression and prescription opioid misuse among chronic opioid therapy recipients with no history of substance abuse. *Annals of Family Medicine* 10(4):304–311. https://doi.org/10.1370/afm.1371.
47. Braden, J. B., M. D. Sullivan, G. T. Ray, K. Saunders, J. Merrill, M. J. Silverberg, C. M. Rutter, C. Weisner, C. Banta-Green, C. Campbell, and M. Von Korff. 2009. Trends in long-term opioid therapy for noncancer pain among persons with a history of depression. *General Hospital Psychiatry* 31(6):546–570. https://doi.org/10.1016/j.genhosppsych.2009.07.003.
48. Jensen, M. K., A. B. Thomsen, and J. Hojsted. 2006. 10-year follow-up of chronic non-malignant pain among pain patients: opioid use, health related quality of life and health care utilization. *European Journal of Pain* 10(5):423–433. https://doi.org/10.1016/j.ejpain.2005.06.001.
49. Kroenke, K., and R. L. Spitzer. 2002. The PHQ-9: a new depression diagnostic and severity measure. *Psychiatric Annals* 32:509–521. Available at: http://jacobimed.org/public/Ambulatory_files/mlove/CurriculumWomenandGeri/Depression/Depression%20articles/PHQ-9ReviewKroenke.pdf (accessed on October 31, 2019).
50. Spitzer, R. L., K. Kroenke, J. B. Williams, and B. Lowe. 2006. A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine* 166:1092–1097. https://doi.org/10.1001/archinte.166.10.1092.
51. Prins, A., M. J. Bovin, D. J. Smolenski, B. P. Marx, R. Kimerling, M. A. Jenkins-Guarnieri, D. G. Kaloupek, P. P. Schnurr, A. P. Kaiser, Y. E. Leyva, and Q. Q. Tiet. 2016. The primary care PTSD screen for DSM-5 (PC-PTSD-5); Development and evaluation within a veteran primary care sample. *Journal of General Internal Medicine* 31:1206–1211. https://doi.org/10.1007/s11606-016-3703-5.
52. Webster, L. R. and R. M. Webster. 2005. Predicting aberrant behaviors in opioid-treated patients: preliminary validation of the Opioid Risk Tool. *Pain Medicine* 6(6):432–42. https://doi.org/10.1111/j.1526-4637.2005.00072.x.
53. Brown, R. L., and L. A. Rounds. 1995. Conjoint screening questionnaires for alcohol and other drug abuse: Criterion validity in a primary care practice. *Wisconsin Medical Journal* 94:135–140. Available at: https://pubmed.ncbi.nlm.nih.gov/7778330/ (accessed June 30, 2020).
54. World Health Organization. 2020. *Alcohol Use Disorders Identification Test (AUDIT).* Available at: https://www.drugabuse.gov/sites/default/files/audit.pdf (accessed June 30, 2020).
55. Washington State Agency Medical Director's Group. 2018. *Utah clinical guidelines on prescribing opioids for treatment of pain.* Available at: http://www.health.utah.gov/vipp/pdf/RxDrugs/UtahClinicalGuidelinesOnPrescribing.pdf (accessed on October 31, 2019).
56. Sullivan, M. D., J. A. Turner, C. DiLodovico, A. D'Appollonio, K. Stephens, and Y. F. Chan. 2017. Prescription opioid taper support for outpatients with chronic pain: A randomized controlled trial. *The Journal of Pain* 18(3):308-318. https://doi.org/10.1016/j.jpain.2016.11.003.
57. HHS Office of the Surgeon General and National Action Alliance for Suicide Prevention. 2012. *2012 National Strategy for Suicide Prevention: Goals and Objectives for Action.* Washington, DC: HHS. Available at: https://www.ncbi.nlm.nih.gov/books/NBK109917/ (accessed on October 31, 2019).
58. Ilgen, M. A., A. S. Bohnert, D. Ganoczy, M. J. Bair, J. F. McCarthy, and F. C. Blow. 2016. Opioid dose and risk of suicide. *Pain* 157(5):1079–1084. https://doi.org/10.1097/j.pain.0000000000000484.
59. Im, J. J., R. D. Shachter, E. M. Oliva, P. T. Henderson, M. C. Paik, J. A. Trafton, and the PROGRES Team. 2015. Association of care practices with suicide attempts in US veterans prescribed opioid medications for chronic pain management. *Journal of General Internal Medicine* 30(7):979–991. https://doi.org/10.1007/s11606-015-3220-y.

60. Haque, R. 2009. ARMOR: A tool to evaluate polypharmacy in elderly persons. *Annals of Long-Term Care* 17(6):26–30. Available at: https://www.managedhealthcareconnect.com/content/armor-a-tool-evaluate-polypharmacy-elderly-persons (accessed on October 31, 2019).
61. Medicare Payment Advisory Commission. 2015. *Chapter 5: Polypharmacy and opioid use among Medicare Part D enrollees.* Available at: http://www.medpac.gov/docs/default-source/reports/chapter-5-polypharmacy-and-opioid-use-among-medicare-part-d-enrollees-june-2015-report-.pdf?sfvrsn=0 (accessed on October 31, 2019).
62. Bachhuber, M. A., S. Hennessy, C. O. Cunningham, and J. L. Starrels. 2016. Increasing Benzodiazepine Prescriptions and Overdose Mortality in the United States, 1996-2013. *American Journal of Public Health* 106(4):686-688. https://doi.org/10.2105/AJPH.2016.303061.
63. Sun, E. C., A. Dixit, K. Humphreys, B. D. Darnall, L. C. Baker, and S. Mackey. 2017. Association between concurrent use of prescription opioids and benzodiazepines and overdose: Retrospective analysis. *BMJ* 356:j760. https://doi.org/10.1136/bmj.j760.
64. NPS MedicineWise. 2016. *Recommendations for deprescribing or tapering opioids: Information for health professionals.* Available at: https://www2.health.vic.gov.au/Api/downloadmedia/%7B87F855AD-CF33-42DC-8205-0F02893F525A%7D (accessed on October 31, 2019).
65. Mackey, K., J. Anderson, D. Bourne, E. Chen, and K. Peterson. 2019. *Evidence brief: Benefits and harms of long-term opioid dose reduction or discontinuation in patients with chronic pain.* Washington, DC: Evidence Synthesis Program, Health Services Research and Development Service, Office of Research and Development, Department of Veterans Affairs. VA ESP Project #09-199. Available at: https://www.hsrd.research.va.gov/publications/esp/reports.cfm (accessed June 30, 2020).
66. U.S. Food and Drug Administration. 2020. *FDA recommends health care professionals discuss naloxone with all patients when prescribing opioid pain relievers oro medicines to treat opioid use disorder.* Available at: https://www.fda.gov/drugs/drug-safety-and-availability/fda-recommends-health-care-professionals-discuss-naloxone-all-patients-when-prescribing-opioid-pain (accessed August 3, 2020).

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