



Beyond Opioids: How Physical Therapy Transforms Pain Management To Improve Health: 2021

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This APTA white paper updates the association’s initial report released in 2018, continuing our examination of efforts to address the opioid epidemic and its impact on patients, their families, and the nation.

Executive Summary

While the United States is still combating the COVID-19 pandemic, the country continues to grapple with the opioid crisis. In many ways, the COVID-19 pandemic and the opioid crisis are linked. According to a recent article published in JAMA, “It is likely that the emergence of coronavirus disease 2019 (COVID-19) and subsequent disruptions in health care and social safety nets combined with social and economic stressors will fuel the opioid epidemic” (Haley, 2020). Further, news reports and preliminary studies indicate that opioid overdoses are increasing during the COVID-19 pandemic (Haley, 2020). Data collected by the Overdose Detection Mapping Application Program demonstrated that drug overdoses generally were 18% higher in March, 29% higher in April, and 42% percent higher in May 2020 than in their respective months in 2019 (Shaw, 2020). Those with opioid and other substance abuse disorders likely have “increased risk of COVID-19 and its more serious complications,” according to the National Institute on Drug Abuse at the National Institutes of Health (Volkow, 2020). Additionally, during the COVID-19 pandemic, providers are being challenged with addressing the needs of patients with opioid use disorder, and navigating the laws and regulations surrounding methadone and buprenorphine (Green, 2020).

The ongoing opioid crisis in the United States reflects the unintended consequences of a nationwide effort to help individuals control their pain. For decades, the health care system has employed an approach to pain management that focuses on the pharmacological masking of pain, rather than treating the actual cause(s) of the pain. This strategy has resulted in a dramatic increase in opioid prescribing, causing widespread opioid misuse and addiction. It also has led to a growing realization that current strategies for managing pain have to change. At best, opioid-centric solutions for dealing with pain mask patients’ physical problems and delay or impede recovery. At worst, these antiquated models can be dangerous and even deadly. In response, the health care system has begun to reexamine its approach to pain, including how causal factors are identified, what tools or measures are used to quantify pain and its impact, and how the approach to treatment is aligned with the patient’s goals and values. Patients and families need to be aware of and have access to various options for managing pain.

“Beyond Opioids: How Physical Therapy Transforms Pain Management to Improve Health: 2020” updates APTA’s 2018 white paper, continuing the association’s examination of efforts to address the opioid epidemic and its impact on patients, their families, and the nation. It also reaffirms that physical therapists are an essential component of the multidisciplinary team that will be required to improve patient outcomes and alter the trajectory of this public health crisis.

Introduction

The presence of pain is one of the most common reasons people seek health care. National surveys have found that chronic pain — defined as pain lasting longer than three months — affects approximately 100 million American adults and that the economic costs attributable to such pain are estimated to be between \$560 billion and \$635 billion annually (IOM, 2011; Johannes, 2010).

Pain has been described in the medical literature as a “uniquely individual and subjective experience” and “among the most controversial and complex” medical conditions to manage (IOM, 2011; Volkow, 2016). Pain has many origins that include an injury experienced recently or long ago, a medical procedure, or an underlying illness such as diabetes or cancer. A report on the subject by the U.S. Department of Health and Human Services notes that pain and its treatment “can be a lifelong challenge at the individual level and is a significant public health problem” (Interagency Pain Research Coordinating Committee, 2017).



Modern society too often puts a premium on quick-fix solutions to complex problems. This is evidenced by the prescription drug consumption in the United States. When it comes to pain and prescribing opioids, this desire for a quick fix can be counterproductive and dangerous. Often when individuals experience pain, nonopioid options are safer, more effective, and longer lasting (Fritz, 2015; Pain Management Best Practices Inter-Agency Task Force, 2019). Incorporating such options as standards of practice should be a central tenet in addressing the opioid crisis.

The treatment of pain, particularly chronic pain, often requires an integrated, multidisciplinary approach due to the many variables that may contribute to a patient’s perception of pain and response to treatment. These variables can include the impact that the pain is having on the patient’s ability to function, the available and accessible options for pain prevention and treatment, and the patient’s personal goals, values, and expectations around health care. Nationwide, the U.S. Department of Health and Human Services reports that patients with pain “face many systemic hurdles to appropriate care.” Evidence suggests, the department adds, “that wide variations in clinical practice, inadequate tailoring of pain therapies to individuals, and reliance on relatively ineffective and potentially high-risk treatments such as inappropriate prescribing of opioid analgesics ... not only contribute to poor-quality care for people with pain, but also increase health care costs” (Interagency Pain Research Coordinating Committee, 2017).

That evidence, in fact, was the driving force behind recommendations by the U.S. Centers for Disease Control and Prevention in its 2016 “Guideline for Prescribing Opioids for Chronic Pain” (CDC MMWR, 2016). While CDC has clarified that the Guideline does not apply to chronic pain for cancer treatment, palliative care, and end of life care (HHS correspondence, 2019) the Guideline states: “Non-pharmacologic therapy and non-opioid pharmacologic therapy are preferred for chronic pain.” The Guideline further suggests that “many nonpharmacologic therapies, including physical therapy ... can ameliorate chronic pain.”

Physical therapy is a dynamic profession with an established theoretical and scientific basis for evaluating, diagnosing, and creating a plan of care that is capable of restoring, maintaining, and promoting optimal physical function. Physical therapists work both independently and as members of interprofessional health

care teams to enhance the health, well-being, and quality of life of their patients, who present with a wide range of pain conditions. The CDC's recommendations point to "high-quality evidence" that interventions by PTs furnish are especially effective at reducing pain and improving function in cases of low back pain, fibromyalgia, and hip and knee osteoarthritis. Additionally, a number of studies show the efficacy of physical therapy in preventing, minimizing, and, in some cases, eliminating pain in patients postsurgery, in patients with cancer, and in other clinical scenarios (Goulette, 2016; Wenger, 2018; Gagnon, 2018; Childs, 2015; Fritz, 2015; Robinson, 2019).

However, opioids do have a role in addressing pain, and we must ensure that we do not limit access to opioids for patients for whom they are a needed component of care.

Our white paper, "Beyond Opioids," describes the opioid crisis and explains how PTs can contribute to its solution. We present evidence documenting the effectiveness of physical therapy in treating pain and preventing the onset of chronic pain, thus, quite likely, reducing opioid use. We also list recommendations to policy makers, payers, health care organizations, providers, and others who are in a position to change the way the system works. It is time for health care to look beyond opioids — and to use proven nonpharmacological strategies, including care by physical therapists, to transform pain management.

The Opioid Problem

Opioids are most often prescribed for pain. Pain has been defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" (Okifuji, 2015). Acute pain typically comes on suddenly as a result of a specific incident such as surgery, childbirth, a fracture, or trauma. Acute pain serves a useful biologic purpose and is self-limiting. Chronic pain, on the other hand, serves no biologic purpose and has no recognizable endpoint. Chronic pain can be considered a disease state and can persist for months or years.

When the CDC issued its 2016 guideline for prescribing opioids, it did so against the backdrop of a national crisis (CDC MMWR, 2016). Deaths caused by overdose of prescription opioids had quadrupled over the previous 15 years, noted CDC director Thomas Frieden in a *New England Journal of Medicine* article that accompanied the guideline's release (Frieden, 2016). "We know of no other medication routinely used for a nonfatal condition that kills patients so frequently," he wrote.

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"While efforts to reduce the availability of prescription opioid analgesics have begun to show success," noted a report by the National Institute on Drug Abuse, "the supply of heroin has been increasing" (NIDA, 2018). In 2014, more than 750,000 people in the United States were receiving substance-abuse treatment for prescription opioids, and the number of those getting treatment for heroin was twice what it had been in 2002 (CDC, 2020). In 2018, the latest year for which statistics are available, the CDC reported that nearly 70% of drug overdoses involved an opioid, that overdose deaths from prescription opioids and heroin had increased 4-fold since 1999, and that 32% of the year's 46,000-plus opioid-related deaths overall were from prescription opioids (NIDA, 2020).

Opioid dependence takes a toll not only on the user but on their finances and their families. In 2018, opioid misuse had been estimated to add nearly \$180 billion in costs, including \$72.6 billion in mortality costs, \$60.4 billion in health care costs, \$26.5 billion in lost productivity costs, \$10.9 billion in criminal justice costs, and \$9 billion in child and family and education assistance costs (Davenport, 2019). Today, with such evidence that health care costs associated with individuals who abuse opioids are significantly higher than those of individuals who do not, and with families and communities affected by the opioid crisis demanding an end to the epidemic, some providers are finally changing their approach to pain management.

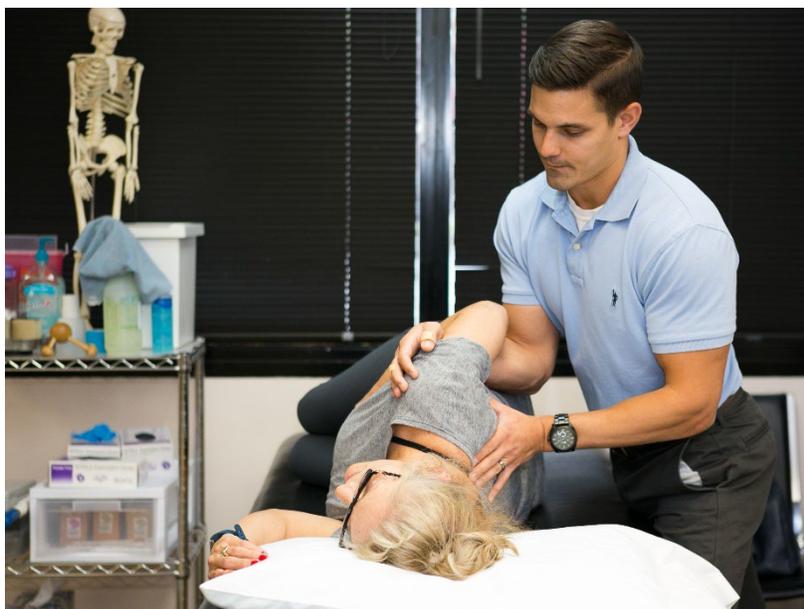
While there is a role for opioids, clinicians must focus on addiction prevention. In addition, they must understand — and convey to their patients — that opioid use comes with significant risks and that effective nonpharmacological solutions to pain management are available. The best way to prevent opioid abuse and addiction is to prevent exposure to opioids when they are not the appropriate choice for managing a patient's pain.

Physical Therapy Can Contribute to the Solution

Ending the opioid epidemic will require collaboration among patients, families, providers, payers, and professionals across the continuum of health care settings, from primary care practices and pharmacies to hospitals and behavioral health facilities. Physical therapists, who engage in an examination process that focuses on not only the symptoms of pain but also the movement patterns that may be contributing to pain, must become central to this multidisciplinary strategy. In a 2019 interagency report, HHS recognized the importance of the PTs' role in multidisciplinary pain management teams to treat pain, particularly through restorative therapy. The report called for more PTs, among others, to be a part of these teams. (Pain Management Best Practices Inter-Agency Task Force, 2019).

Who Are Physical Therapists?

Physical therapists are licensed clinical professionals who have completed an accredited physical therapist education program earning a doctor of physical therapy degree and have passed a national licensure examination. As health care providers, PTs are experts in human movement who combine their extensive education, clinical experience, and the latest medical research to assess and treat people of all ages and abilities to maximize their capacity for movement and, in doing so, help them improve or maintain their function and quality of life. Based on their judgments about diagnoses and prognoses, and based on each patient's personal goals, PTs design individualized plans of care, provide appropriate interventions, continually monitor results, and modify treatment as necessary to optimize patient outcomes. They also coordinate with and refer to other professionals in the health care system, such as physicians, psychologists, and social workers.



The Role of PTs in the Management of Pain and Prevention of Chronic Pain

When PTs work with patients in pain, they use tests and measures to determine the causes and the impact of the pain. They assess the pain pattern, intensity, impact on function, and quality of life. PTs also evaluate individuals for risk factors for pain to help prevent future pain issues. These risk factors include:

- **Disease history.** Conditions such as arthritis, diabetes, and neurological conditions can affect an individual's pain experience.
- **Cognitive and psychological factors.** Disorders such as anxiety, depression, catastrophizing, fear, and posttraumatic stress disorder can be risk factors for the development of chronic pain.
- **Beliefs.** Negative beliefs surrounding one's condition can contribute to persistent pain and a belief that hurt equals harm.
- **Sedentary lifestyle.** There is a strong association between immobility and chronic musculoskeletal conditions, such as pain. Lack of physical activity is associated with a higher prevalence of chronic musculoskeletal conditions (Holth, 2008).

Once the contributors to a patient's pain are identified — and the patient's goals are ascertained — the PT designs an individualized treatment program combining the most appropriate techniques, including but not limited to therapeutic exercise, manual therapy, and patient education to address the underlying problem(s).

- **Therapeutic Exercise.** Studies have shown that people who exercise regularly experience less pain (Fernández-de-Las Peñas, 2015). PTs develop, administer, modify, and progress exercise prescriptions and programs to address poor conditioning, impaired strength, musculoskeletal imbalances, or deficiencies that may lead to pain.
- **Manual therapy.** Manual therapy involves hands-on movement of joints, muscles, and other soft tissue to modulate pain, reduce swelling and inflammation, and improve mobility. Research shows that manual therapy techniques are effective at reducing low back pain, discomfort associated with carpal tunnel syndrome, and other sources of pain (Delitto, 2012).
- **Patient Education.** This includes education on pacing, posture, ergonomics, self-care strategies, and activities of daily living.
- **Stress Management.** Interventions such as mindfulness, relaxation, visualization, and graded exposure to stress-producing events can help patients reduce pain and improve their functional capacities.
- **Sleep management.** Individuals with persistent pain often complain of sleep disturbances. Evidence has shown that sleep deprivation can increase sensitivity levels and contribute to increased stress and pain (Finan, 2013). PTs can help educate patients regarding appropriate sleep positions to help combat the vicious cycle of persistent pain.
- **Pain neuroscience education.** Individuals who don't understand the mechanisms and contributors to their pain may be more likely to seek pharmacological treatment for that pain. PTs can educate patients about modern pain science that highlights the processes involved in pain, which empowers patients in their journey to overcome pain.

Research Shows the Effectiveness of Physical Therapy in Managing Pain and Preventing Chronic Pain

Studies have established the efficacy of physical therapy in treating and reducing pain as well as preventing chronic pain. For example:

- **Low back pain.** A review of more than 60 randomized controlled trials evaluating exercise therapy for adults with low back pain found that such treatment can decrease pain, improve function, and help people return to work (Qaseem, 2017). The American College of Physicians states that “non-pharmacologic interventions are considered first-line options in patients with chronic low back pain

because fewer harms are associated with these types of therapies than with pharmacologic options” (Mover, 2017). A 2019 study (Kazis, 2019) cosponsored by APTA demonstrated that seeing a PT first for low back pain lowers the odds of early and long-term opioid abuse.

- **Before and after surgery.** A review of 35 randomized controlled studies with a total of nearly 3,000 patients found that in patients undergoing total hip arthroplasty, preoperative exercise and education led to significant reductions in pain, shorter lengths of stay postoperatively, and improvements in function (Fransen, 2014).
- **Arthritis.** Studies have shown that therapeutic exercise programs can reduce pain and improve physical function among individuals with hip and knee osteoarthritis (Messier, 2013; Deyo, 2015).
- **Musculoskeletal pain.** A 2018 study (Sun, 2018) found that early physical therapy reduces longer-term and lowers intensity of opioid use for those with musculoskeletal pain.

Meanwhile, research on the efficacy of opioids for long-term pain management shows they often result in unwanted side effects. Evidence also shows that the use of opioids can decrease a person’s response to naturally occurring rewards.

Low back pain. One review of the literature found that “opioids do not seem to expedite return to work in injured workers or improve functional outcomes of acute back pain in primary care.” And for chronic back pain, there is “scant evidence of efficacy ... Opioids seem to have short-term analgesic efficacy for chronic back pain, but benefits for function are less clear” (Hah, 2017). Also, patients with low back pain who received care from a physical therapist first experienced lower out-of-pocket, pharmacy, and outpatient costs after one year and reduced their likelihood of receiving an opioid prescription by 87% compared with patients who never



visited a physical therapist (Frogner, 2018). The physical therapist-first group also was associated with a 28% lower probability of having imaging services and 15% lower odds of making a visit to an emergency department. Evidence also shows that when patients with low back pain see a physical therapist first, high-cost medical services and opioid use are reduced, with cost shifts reflecting the change in utilization. An analysis of more than 200,000 commercial and Medicare Advantage insurance beneficiaries revealed what researchers describe as a “significant” pattern: Among patients seeking treatment for low back pain, those

whose initial visit was with a physical therapist, chiropractor, or acupuncturist decreased their odds of early opioid use by between 85% and 91%, and lowered their odds of long-term opioid use by 73% to 78%, compared with those whose initial visit was with a primary care physician (Kazis, 2019).

After surgery. Research shows that surgical patients who are prescribed opioids are at increased risk for chronic opioid use (Brummett, 2017). “New persistent opioid use is more common than previously reported and can be considered one of the most common complications after elective surgery,” notes a 2017 investigation in *JAMA Surgery* (Ivers, 2012).

Arthritis. Studies have shown that use of opioids to treat arthritis leads to higher risk of bone fracture and increased risk of cardiovascular events, hospitalization, and mortality (American College of Rheumatology, 2017). The author of a recent study on opioid use for pain management among spine osteoarthritis patients pointed to concerns around the “potential for misuse, dependency and increased adverse events,” including

death. “Growing evidence demonstrates little if any clinically significant benefit of opioids for OA (osteoarthritis) pain, particularly when compared to other medications,” he said (National Quality Forum, 2018).

Musculoskeletal pain. Studies have shown that patients who seek primary care for musculoskeletal disorders and are triaged to a physical therapist self-report slightly better outcomes related to pain, disability, and health-related quality of care (Bornhöft, 2019). Early access to physical therapy also holds the promise of reducing opioid use among patients with musculoskeletal pain. Researchers recently examined claims data to assess whether early physical therapy was associated with decreases in long-term opioid use (Sun, 2018). The results suggest that early physical therapy is associated with an approximate 10% reduction in the probability of any long-term opioid use for patients with shoulder, neck, knee, and/or low back pain.

Scenario: A patient avoids opioid use and gains control over her condition without secondary complications or issues.

Summary: Greta, a 33-year-old woman, experienced an inversion left ankle sprain two weeks ago and has severe pain in her outer ankle and foot. She has come in for treatment by a physical therapist and tells the PT that her pain level is an eight out of 10. She also states that she has avoided physical activity and “favors” her left ankle and foot, both because of her pain and because she is afraid of making the injury worse or causing permanent damage. From this and other data collected during the examination, the PT has determined Greta to be at high risk for developing persistent pain because the patient presents with increased stress and anxiety from her injury, hypervigilance and fear of activity, pain catastrophizing, inability to pace her activity level appropriately to her condition, financial concerns that may keep her from seeking adequate treatment, and concern about long-term implications.

Focus of Care: The PT collaborates with other team members, and they work together with Greta to address her beliefs and behaviors in order to reduce her fear and anxiety, improve her mobility at an appropriate pace, and create accurate expectations for her recovery. For example, Greta works with a behavioral health psychologist to change conditions that escalate her distress and fear. She learns to adopt a positive attitude toward her healing process, practicing gratitude for the good things in her life and engaging in activities that bring her happiness. The PT develops a plan of care that effectively involves Greta in her recovery and improves her pain-coping skills by incorporating instruction in effective pain-management techniques including pacing, relaxation breathing, and resuming activities that promote enjoyment without increasing pain.

Treatment focuses on gradually restoring her function and activity as her injury heals. Between her early and later sessions, there is a definite shift in Greta’s perception of her pain and how it is affecting her physically, emotionally, and financially.

Outcomes: Greta is able to return to work and does not develop persistent pain. She was motivated and empowered through her treatment to independently manage her symptoms, increase her physical activity at a safe pace, and educate herself on preventing further damage or future injury — all without the need for opioid pain medication.

Scenario: A patient lowers her dependence on pain medication when the PT actively engages her in a sustainability plan that also improves her function and decreases her need for repetitive care.

Summary: Jean, a 73-year-old woman, has been taking Percocet daily for several years after being diagnosed with degenerative changes in her neck, back, knees, and feet. She has been seen by PTs several times intermittently in the past, but the prescribed treatments haven't been sustainable, while the pills offered her some immediate — if less than satisfactory — pain relief. Jean now presents for an initial visit with a PT with a goal of discontinuing the Percocet. She offers that her granddaughter is a supportive caregiver who can be counted on to assist in her plan of care. Upon examination, the PT determines that Jean has generalized weakness, poor balance, poor fitness, fair overall health, and difficulties with performing activities of daily living. Jean also has developed some fear of movement and expresses a great deal of stress associated with her longstanding condition.

Focus of Care: The PT determines that an integrated plan of treatment will be most beneficial to Jean, combining physical therapist interventions with fitness, such as yoga, and behavioral health strategies. The PT identifies community resources and works with Jean and her granddaughter to identify beneficial programs at the local senior center that are compatible with their schedules. The PT develops a comprehensive pain treatment strategy beginning with an evaluation of how effectively Jean's current use of pain medication addresses her chronic conditions. The approach then is to create a model of sustainability that Jean can achieve through her work with the PT. Jean will transition into self-management to avoid sliding back into heavy medication use. Steps will include managing Jean's chronic conditions to lessen her periods of active pain, educating her about her pain, and building strength, balance, and endurance to improve her overall health. Peer support for behavior changes also are part of the plan. The PT involves Jean's granddaughter in her treatment plan and sessions in order to promote a smooth transition from skilled therapy.

Outcomes: Jean no longer takes pain medication routinely, limiting her use to the occasional situation in which her pain is exacerbated. At other times, she self-manages her conditions by participating in gym workouts and group yoga classes, often enjoying those times with her granddaughter, who is pleased to see her grandmother healthier and more active.

Scenario: Physical therapist treatment is an effective and viable approach to helping a patient who wants to end his dependency on opioids but still needs to manage his pain.

Summary: Cliff is a 63-year-old male with chronic pain resulting from a series of seven surgeries over the past eight years, not all of them successful. He rates his pain level at seven out of 10, despite taking 10 325m Vicodin daily. He indicates that he has little energy and that loss of appetite and nausea affect his eating habits. Upon taking a history during examination, the PT learns that Cliff's surgeries include a failed meniscal repair of the right knee, a failed implant in the right great toe for arthritis, three surgeries to repair traumatic fractures of both ankles, surgical repair of a left elbow fracture, and surgical repair of a left wrist fracture.

Focus of Care: As a member of an interprofessional team including an opioid-addiction specialist, the PT works with Cliff to develop a plan of care that will move Cliff from being pain-centric to function-centric as soon as possible. With Cliff's long history of pain and resulting dependence on Vicodin, the team works together to address the effects of opioid withdrawal as a component of the overall treatment plan. This includes monitoring and addressing withdrawal symptoms while incorporating techniques that will improve Cliff's function without increasing his pain. For the best chance of success, the team involves Cliff up front in treatment decisions to determine which strategies have worked and which have failed, gaining his confidence and trust in the plan of care. Treatment begins right away, and while the first few weeks are challenging, as Cliff adjusts to being off the Vicodin, he is able to better tolerate his exercises and improve his functional performance.

Outcomes: Cliff states that the results of his treatment are "unbelievable." Following the collaborative plan of care, his pain symptoms have decreased by 80%, he has increased energy, and his appetite has improved.

Conclusion

The National Quality Forum, a leading health care research and advocacy group, convened the National Quality Partners Opioid Stewardship Action Team in 2017 to address the opioid epidemic. The team, which included representatives from the CDC, the American Society of Health System Pharmacists, and the American Physical Therapy Association, among others, developed the "NQP Playbook: Opioid Stewardship" in March 2018 to provide concrete strategies and implementation examples for effective pain management and opioid stewardship. Other programs launched to help bring the opioid crisis to an end include NIH's HEAL Initiative, the Academy of Integrative Pain Management's Integrative Pain Care Policy Congress, of which APTA is a member, and

The opioid epidemic is a complex problem that will be solved only through multidisciplinary collaboration.

APTA's own #ChoosePT opioid awareness campaign (choosept.com/pain), which encourages consumers and prescribers to follow the CDC's opioid-prescription guidelines.

The take-home message from each of these initiatives is that the opioid epidemic is a complex problem that will be solved only through multidisciplinary collaboration, and that individuals with chronic pain must be offered interventions that not only control pain but also address the causes of pain. The CDC, NQF, and other major health agencies and organizations all have affirmed that nonpharmacological and nonopioid therapy can be effective in managing chronic pain. It's time for the health care system to look beyond opioids to options such as physical therapist interventions and care management to treat pain and combat chronic pain by addressing its source(s).

Recommendations

APTA recommends that policymakers include the following activities and actions as part of a comprehensive response to the opioid crisis.

- 1. The federal government should develop and implement a comprehensive public awareness campaign targeting health care providers, payers, regulators, employers, and the general public on pain assessment and options for pain management.**
- 2. Public and private health plans should include benefit design, reimbursement models, and integrated team approaches that support early access to nonpharmacological interventions, including physical therapy provided by or under the supervision of licensed physical therapists, for the primary care of pain conditions.**
- 3. Private and public health plans should remove barriers to effective care by reducing or eliminating patient out-of-pocket costs and by increasing access to and payment for person-centered, nonpharmacological pain management and treatment interventions.**
- 4. Public and private health plans should educate primary care providers and physicians on the value of nonpharmacological, person-centered interventions and how to appropriately assess, treat and refer patients with pain. This education should include differentiating between services provided by physical therapists and non-skilled care delivered via health coaches or technology applications.**
- 5. Federal and state policymakers should identify and finance the replication of effective models of pain management care, including reducing or eliminating patient out-of-pocket costs and allowing for bundled payment methods for multidisciplinary programs.**
- 6. Federal and state student loan repayment programs should incentivize health care professionals, including physical therapists, to work in underserved communities disproportionately affected by the opioid crisis.**

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